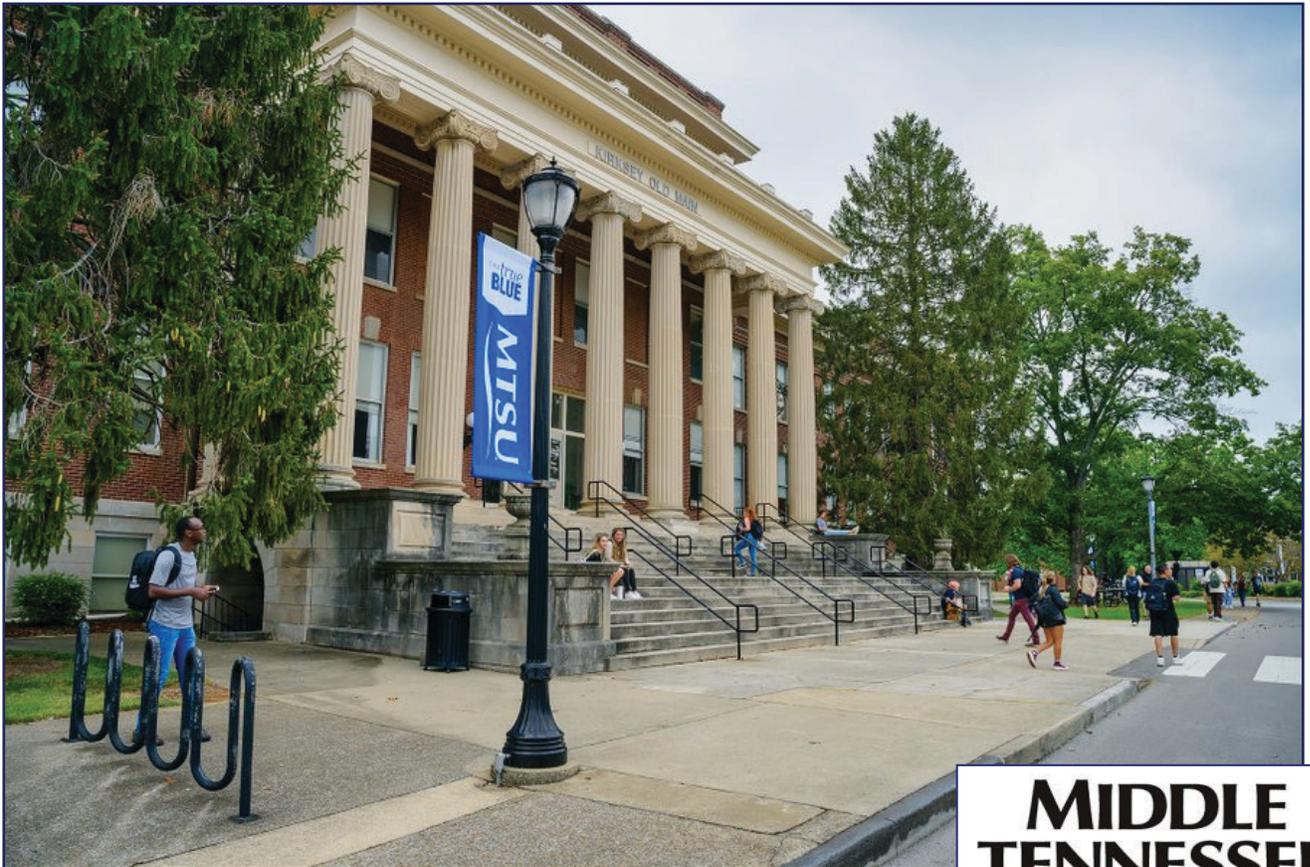


FACILITIES SERVICES SUMMARY OF SERVICES ANNUAL REPORT

July 2022 - June 2023



**MIDDLE
TENNESSEE**
STATE UNIVERSITY



Facilities Services Department
PO Box 32 Murfreesboro, Tennessee 37132
Phone 615-898-2414
www.mtsu.edu/facserv/

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



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



FSD website

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

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.

FY 22/23 has concluded and FY 23/24 is well underway. The departmental budget remained relatively level. A dedicated staff provided professional services to the university community and visitors throughout the year. 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 FY22/23 for the department and updates the Maintenance and Operations (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 98 individual goals across the departmental work units for the FY22/23. Overall, 69 of the goals were completely met or had substantial progress toward their completion (70%), 25 of the goals had progress toward completion but remain on-going (26%) and 4 of the goals had showed little to no progress (4%).

Capital Projects, Construction Renovation Projects, and Maintenance Projects

- 9 capital construction projects were completed totaling \$40.31 million
- 12 capital construction projects in design totaling \$171.24 million
- 170 renovation projects were completed totaling \$3.41 million
- 166 major maintenance projects were completed totaling \$3.31 million

Customer Service and Communication

- All work units combined to complete 20,300 work orders for the year

- Administered the customer survey process that produced useful feedback and consistently high ratings for services
- Continued weekly meetings with Residential Life maintenance staff to review work progress for Housing

Management and Productivity

- The business intelligence software program was expanded within the department providing for significantly 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



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

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

(Continued on page 4)



(Continued from page 3)

remained level over the years.

FY22/23 concluded with significant signs of significant inflation on both an annual basis and month-to-month basis. Inflation factors will impact all aspects of operations including in-house labor costs (and staffing), material costs, contractor support costs, and utilities. This will be a major area of focus for FY23/24 and beyond.

Capital maintenance projects are submitted each year, typically totaling \$10 million - \$18 million, to provide for the major repair and replacement needs of the campus. Funding formulas indicate an annual need of approximately \$22 million just to remain level. FY23/24 submissions of \$15,807,000 resulted in approved funding for 2 projects totaling \$5,000,000. 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 FY22/23 increased 9.31% from the previous FY. This increase is associated with increased energy demand from new buildings and inflation of energy/utilities. Even with the increased energy use/costs, there is an aggregate cost reduction of 3.1% compared with FY 16/17. Beyond the consistent use and efficient operations of the facilities and utility plants over the years, natural gas rates had been consistently low.

However, inflation and market volatility has driven the commodity price up considerably. MTSU was able to lock in two years of lower natural gas rates prior to the market effects blunting the price increase in the short run. 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. The Concrete and Construction Management Building was completed in 2022. The Student Athletic Performance Center and the Applied Engineering Building are two large projects currently under construction.

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.

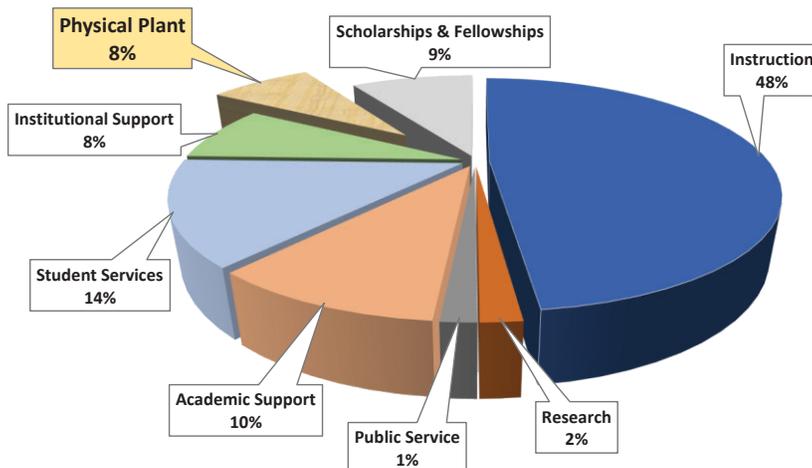
Conclusion

Although constrained by resources and inflationary pressures, 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.

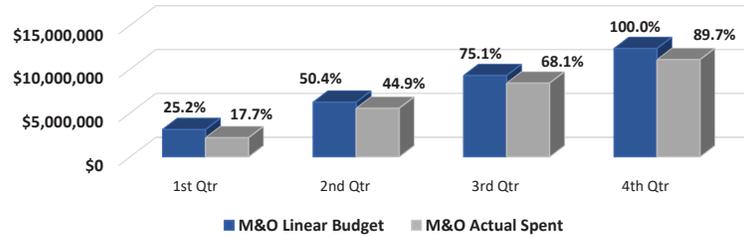
—Joe Whitefield

MTSU E&G Expenditures 2022-2023



Total: \$345,623,571
 Source: Schedule of Current Funds Expenditures and Transfers by Function, for year ended June 30, 2023

Facilities M&O E&G Budget & Expenditures FY 2022/2023 by Quarter



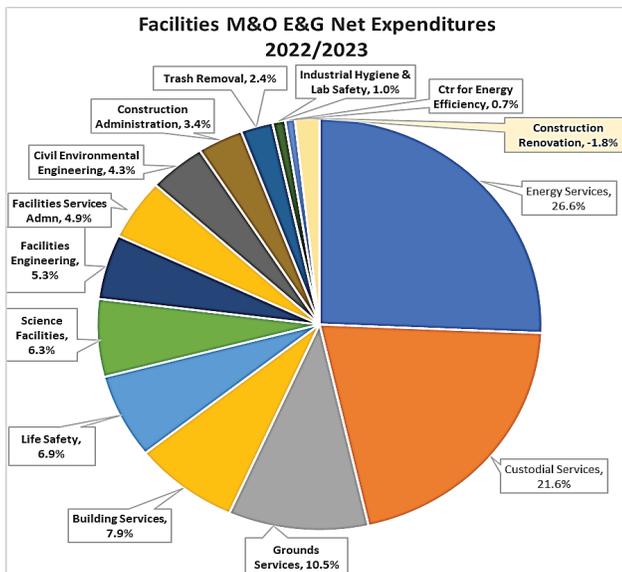
FY2022/2023	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	End-of-Year Totals	% of Total
Total M&O E&G Budget	\$7,683,425	\$7,683,425	\$7,516,394	\$7,599,910	\$30,483,154	
Total M&O E&G Expenditures	\$5,290,290	\$8,114,898	\$6,559,323	\$6,197,881	\$26,162,392	
-Non-Facilities M&O E&G Expenditures	-\$2,194,603	-\$3,668,163	-\$2,620,993	-\$2,363,965	-\$10,847,724	
Facilities M&O E&G Budget	\$3,113,321	\$3,113,321	\$3,045,640	\$3,079,481	\$12,351,763	59%
Facilities M&O E&G Expenditures	\$2,184,934	\$3,358,155	\$2,868,497	\$2,669,864	\$11,081,450	
% of Facilities Exp/Budget	17.69%	27.19%	23.22%	21.62%	89.72%	
+ Facilities Work for Others	\$1,365,358	\$599,419	\$1,232,494	\$1,933,615	\$5,130,886	41%
+ Const. Renov. Work for Others	\$582,461	\$194,575	\$742,916	\$1,096,745	\$2,616,698	
Facilities M&O E&G Expenditures with WFO	\$4,132,754	\$4,152,149	\$4,843,907	\$5,700,224	\$18,829,033	

Accomplishments & Highlights 2022/2023

- Updated spreadsheets to utilize data bases & spreadsheets to manipulate the data set with functions & formulas to produce increasing data integrity, data consistency, and better data analytics
- Transitioned a facilities' Account Clerk into a Senior Account Clerk position to supervise and provide support to the Director
- Transitioned a facilities' Work Order Clerk into an Account Clerk position
- Continued to update the Facilities' contract list & contract information
- Provided continuous accounting support to the Facilities Department, ensured monthly billing demands, accumulated costs to reclassify, & met University cut-offs throughout employee shortages & long-term medical leave
- Continued to provide Notary service to the university

Goals 2023/2024

- Optimize technology to improve efficiency and expand the Facilities accounting day-to-day financial operations & management functions
- Continue to seek new technology to improve Facilities Services workflow by reducing inefficiencies & improving productivity
- Implement University Point of Sale (POS) software & interconnected POS devices in one work area for accurate, real-time sales of goods & services to calculate the amount owed by the customer, issue a receipt for the transaction, purchasing, FIFO inventory management with barcodes, financials for month-end billing, cost analysis, & sales trends
- Prepare descriptions for outline to move forward with the documentation of a Facilities Accounting's procedures manual
- Input information utilizing Excel Forms to produce an Asset / Building / Property Facts & Figures reference manual
- Track, manage, & organize projects with project management software to achieve all scope & budget goals within the given time constraints



- Increase Accounting team with new hires & new positions to reduce the physical & mental health of over-worked employees which will increase productivity levels, employee morale, financial accuracy, & prevention of burnout
- Continue to work toward providing training resources for new employees & annual training for current employees / managers / supervisors
- Build on knowledge as an essential force in the financial development to update data, track changes, & refine the framework of spreadsheets & documents
- Annually review & update the Facilities' contract list and contract information
- Encourage employee development, education, and certification, including team building and communication

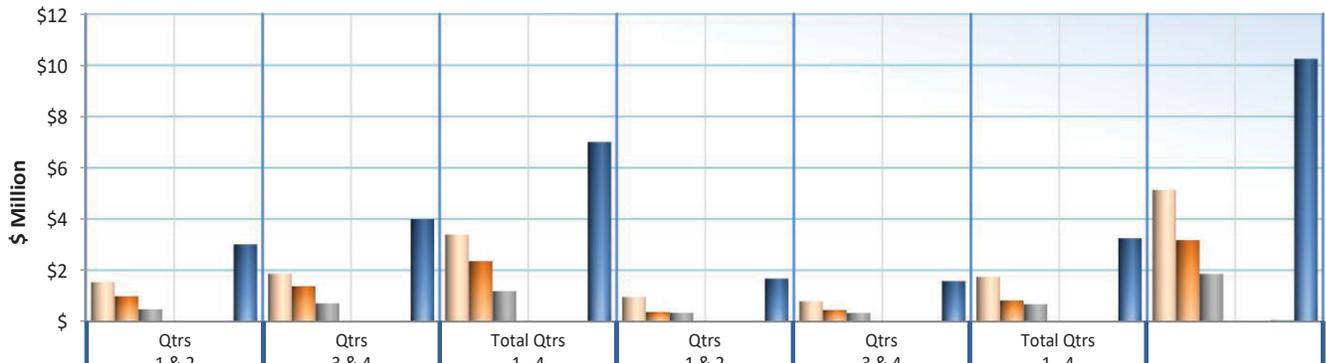
Accomplishments & Highlights 2022/2023

- Achieved annual utility related agreements with Tennessee Valley Authority and Middle Tennessee Electric (MTE): Generation Partners, Green Power Switch, TVA's Back to Work credit
- Completed annual utilities reports for THEC, NCAA requirements; provided EIA monthly emissions data for required reporting
- Provided utility cost information for monthly auxiliary and leased properties invoicing
- Supported State Facility Utility Management (SFUM) platform for State of Tennessee
- Updated Physical Facility Inventory Surveys (PFIS) for facilities and capital maintenance under THEC
- Continued partnered support of MTSU Sustainable Campus Fee Committee (SCF) under Student Affairs; oversight of multiple awarded sustainable projects and Students for Environmental Action (SEA) projects
- Provided support for utilities/metering/controls design specs for new construction (Advanced Engineering Building, tennis facility improvements, renovation projects (College Heights Building, Dairy Farm, capital projects), and Cogen Plant turbine valve and gas meter updates
- Continued serving on the President's Commission on the Status of Women, Women in STEM, and Tennessee Girls in Stem Boards
- Published Summary of Services Annual Report for FY21/22
- Continued discussion with MTE regarding monthly billing modifications/arrangements

Goals 2023/2024

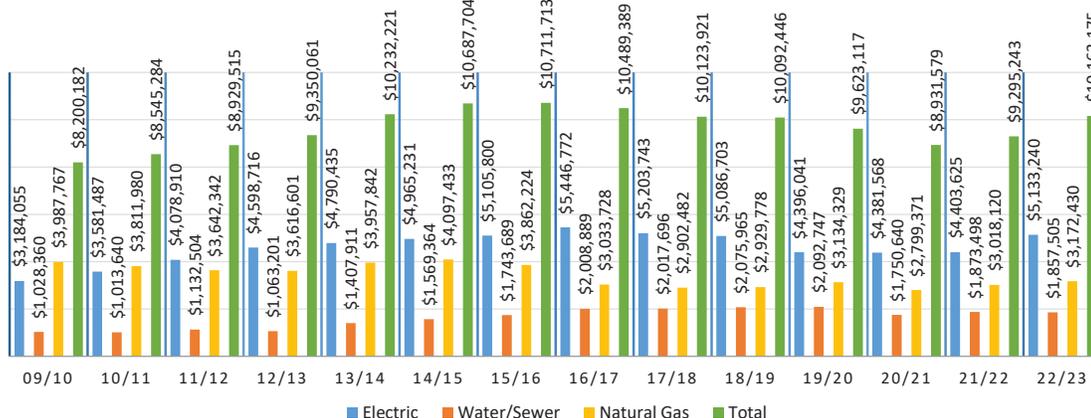
- Support utilities and sustainability design processes in new campus construction and renovations
- Continue involvement with building utility information for State Facility Utility Management (SFUM) for State of Tennessee
- Work through RFP requirements for renewing natural gas contract
- Continue updating Physical Facility Inventory Surveys (PFIS) for facilities and capital maintenance for THEC
- Continue communicating with vendors and university departments with information as needed: utilities/energy management data, support, research (new service, demolition projects, audits) and resolving various software issues
- Continue support of MTSU Sustainable Campus Fee Program and other sustainable practices on campus; develop sustainability website for FSD
- Continue support of University Academics areas through internships, student workers, and volunteer opportunities, support classroom instruction for university departments per request
- Support enhancement and implementation of Power BI Analytics Program for utilities, energy projects, building surveys, SCF projects
- Continue to collect, maintain, and monitor thorough data for all utilities for the University
- Support meter replacements for utility vendors
- Continue 'Green Snapshots' information system for campus sustainability reporting

Total Campus Utilities 2022/2023



	Qtrs 1 & 2	Qtrs 3 & 4	Total Qtrs 1 - 4	Qtrs 1 & 2	Qtrs 3 & 4	Total Qtrs 1 - 4	Total E&G & Auxiliary
E&G \$			Auxiliary \$				
Electric	\$1,531,422	\$1,861,364	\$3,392,786	\$955,098	\$785,356	\$1,740,454	\$5,133,240
Natural Gas	\$982,010	\$1,372,140	\$2,354,150	\$368,775	\$449,504	\$818,280	\$3,172,430
Water/Sewer	\$476,504	\$707,426	\$1,183,930	\$339,735	\$333,841	\$673,576	\$1,857,505
Propane	\$5,140	\$10,431	\$15,571	\$-	\$-	\$-	\$15,571
Green Power Purchase	\$-	\$25,000	\$25,000	\$-	\$-	\$-	\$25,000
Stormwater	\$13,393	\$19,479	\$32,872	\$7,637	\$7,637	\$15,273	\$48,145
Total	\$3,008,470	\$3,995,839	\$7,004,309	\$1,671,244	\$1,576,338	\$3,247,582	\$10,251,891

MAJOR CAMPUS UTILITIES BY FISCAL YEAR



Recycling Program - MTSU Recycles

Linda Hardyman



Accomplishments & Highlights 2022/2023

- Maintained recycling program to meet campus needs employing student and temporary workers
- Supported recycling efforts for Campus Planning, Capital Construction, and Construction/Renovation projects in multiple building's renovation projects, move in/move outs
- Expanded recycling efforts for maintenance metal recycling
- Improved recycling vendor negotiations for paper and cardboard
- Maintained implementation of Sustainable Campus Fee (SCF) projects submitted by campus personnel and students; supported/completed several awarded grants (Health & Human Performance) for water refills
- Continued facing major commodities issues relating to downturn in recycling markets, i.e. vendor availability, restructured recycling for local community, limited access to particular commodity collections; partnership arrangement with Rutherford County; staffing
- Continued athletic recycling support in suites and stadiums, continued tailgating areas recycling with Students for Environmental Action (SEA) as Sustainable Campus Fund (SCF) project; expanded for additional sports venues
- In addition to routine program tasks, responded to more than 700 individual requests for recycling on campus
- Supported Customs and other special outreach events on and off campus per opportunity

Goals 2023/2024

- Continue to direct Sustainable Campus Fee (SCF) sustainability projects – water refill stations, solar picnic table, lighting, and other maintenance improvements for campus
- 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 – face the many unique challenges
- Carry on support of recycling education, correcting/promoting recycling issues, improving presence of recycling collection bins on campus
- Continue to support Campus Planning, Capital Construction, Construction/Renovation, and maintenance projects as requested
- Continue to work with athletics staff to provide appropriate recycling at athletic events
- Continue working with MTSU Sustainable Campus Fee Program for recycling project funding
- Improve presence of SCF in Power BI
- Explore partnership opportunities with MTSU initiatives, Recycle Rutherford, Rutherford County Government, existing vendors
- Continue to provide classroom support through guest lectures, environmental seminars, and storm water initiatives
- Continue staff participation in training and development programs

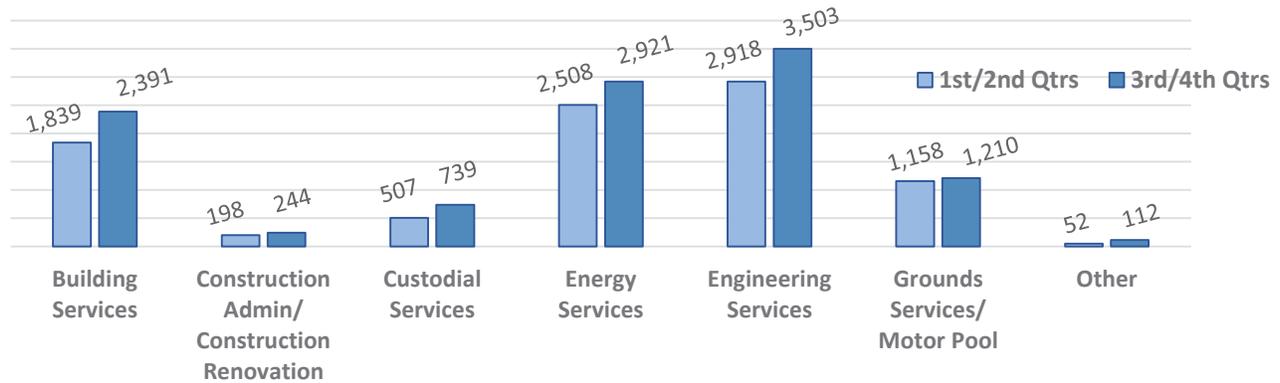




Engineering Services: Work Order Services

Ben Lynch Katie Cullen

Work Orders Closed By Quarter Per Subdepartment 2022/2023



Work Orders Closed	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter		Fiscal Year Total	
Subdepartment	# WO	% of Total	# WO	% of Total	# WO	% of Total	# WO	% of Total	# WO	% of Total
Building Services	853	19.0%	986	21.0%	1,050	21.6%	1,341	21.4%	4,230	20.8%
Construction Administration/ Construction Renovation	98	2.2%	100	2.1%	94	1.9%	150	2.4%	442	2.2%
Custodial Services	244	5.4%	263	5.6%	303	6.2%	436	7.0%	1,246	6.1%
Energy Services	1,305	29.1%	1,203	25.6%	1,305	26.8%	1,616	25.8%	5,429	26.7%
Engineering Services	1,354	30.2%	1,564	33.3%	1,566	32.2%	1,937	31.0%	6,421	31.6%
Grounds Services/Motor Pool	589	13.2%	569	12.1%	507	10.4%	703	11.2%	2,368	11.7%
Other	36	0.8%	16	0.3%	40	0.8%	72	1.2%	164	0.8%
FY Totals	4,479	100%	4,701	100.0%	4,865	100.0%	6,255	100.0%	20,300	100.0%

Accomplishments & Highlights 2022/2023

- Upgraded Mainsaver; digitized work order storage and support documentation
- Designed and implemented new work order format to collect information more effectively
- Created SQL scripts for daily quality checks on new work orders
- Advanced Mainsaver event notification for work order activities for FSD and non-FSD users; automated emails for better communication to customers; created new Mainsaver queries; created notification process for campus safety officer regarding work order related injuries; audited building asset information
- Coordinated with FSD Systems Administrator use of Power BI for specific customer reports; improved access to data; migrating periodic Mainsaver reports to Power BI; improve customer survey process; SCF project tracking
- Assisted shops with better use of Mainsaver; improved queries, work queue views, assignment of contractors and outsource tracking

Goals 2023/2024

- Develop, test, and launch digital form for collecting labor hours per work order to reduce paper consumption and cost
- Improve weekly work order closing QC reports and create SQL scripts for daily quality checks on completed work orders
- Launch redesigned work request web form to consolidate and simplify request webpage
- Consolidate work order instructional documentation into a searchable wiki
- Continue to configure Mainsaver Connect app/web to integrate digital processes as appropriate
- Assist Maintenance Warehouse with digitizing checkout process



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



Maintenance Projects: MP-2's

As part of the Facilities Services (FSD) maintenance project process, MP-2 forms are used to track those maintenance projects which are major repair or replace projects beyond the routine, often involving deferred maintenance, multidiscipline event-related, or non-budgeted repairs that are \$5,000 or greater.

For FSD funded projects that are not considered of a Construction/Renovation nature, outside our normal operating budget, and needing expenditure approvals from a budgetary authority, completion of an MP-2 form provides a preliminary estimate for project approval and funding, assignment of a tracking project number, and allows all elements of projects to be accurately tracked until completed.

MP-2 Project Summary 2022/2023		
Subdepartment	# Projects	Project Value
Building Services	48	\$997,489.32
Energy Services	63	\$924,812.83
Engineering Services	4	\$150,954.34
Environmental Health & Safety	14	\$621,078.74
Grounds Services	22	\$219,990.14
Motor Pool	5	\$221,155.20
System Engineering	5	\$70,638.35
Other	2	\$56,712.89
Split Departments	4	\$42,421.39
Total	121	\$3,305,253.21



Miller Education hot water line replacement



Academic Classroom Sprinkler system repaired (from December 2022 freeze)



Central Plant: Natural gas valve for turbine



Tree damage (from December 2022 freeze)

Customer Satisfaction Survey

The Facilities Services Department 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 Facilities Services to evaluate our systems and procedures and to continue to improve our customer service culture.

“...prompt and efficient handling my request!

...great job by the team!

...Excellent work!!

Thank you for all you do!

2022/23 Work Order Customer Satisfaction Survey	
Did you receive an email when the work order was opened?	97.8%
Did you receive an email when your work order was completed?	96.5%
Did the Corrective Action adequately address the problem or requested work?	4.69
How satisfied are you with the timeliness of the response(s) to your work request?	4.69
How satisfied are you with the customer service you received?	4.75
Scale: 5-Very Satisfied 1- Dissatisfied	Responses: 313

Accomplishments & Highlights 2022/2023

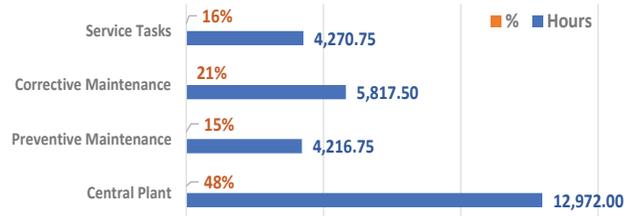
Heating Plant

- Developed Power Points for refresher training of current Cogen operators and learning tools for future operators
- Cogen Operators increased surveillance on the Chiller Plant during the off hours accumulating data to enhance reliability and prevent catastrophic failures, i.e. motor and pump bearings being monitored/recorded for ability to catch issues before failures
- Received high praise from Insurance Inspector on the interior boiler conditions: operator's attention to detail and working closely with vendor attributed to the accomplishment
- Continued Cogen PM schedule on critical equipment to reduce unscheduled outages/downtime
- Implemented a program design to eliminate or reduce heat loss in the mechanical rooms with the use of infrared technology

Chilling Plant

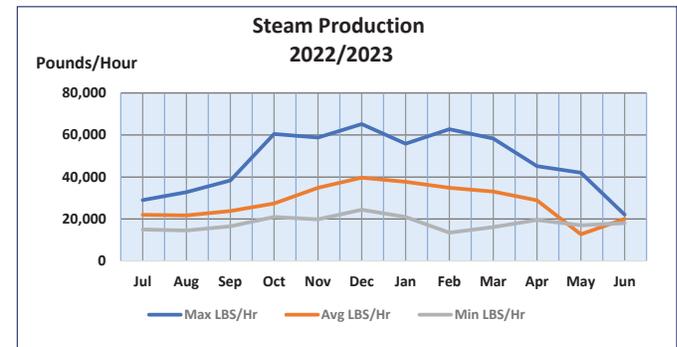
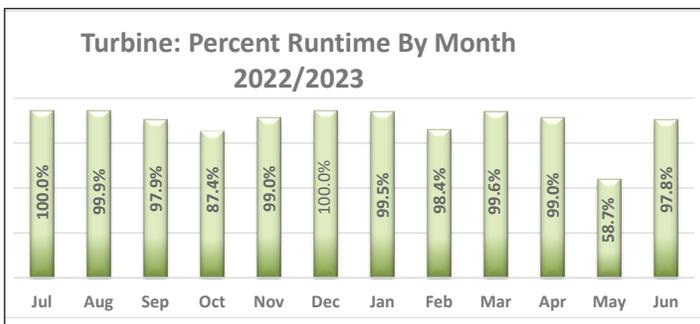
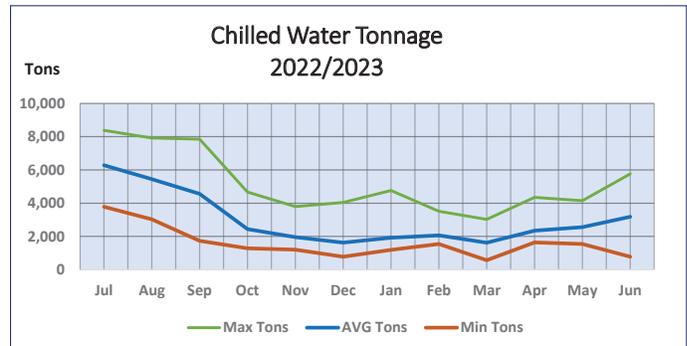
- Continue to develop and refine chiller plant logic to increase system performance and reliability
- Develop equipment rotation protocols that will help even out wear on equipment and increase its reliability
- Utilize new sensors and equipment installed to aid in efforts to improve plant performance and increase efficiency

Energy Services
Man-Power Allocation
2022/2023



Goals 2023/2024

- Continue producing electronic training modules
- Continue working on Mechanical Room Schematics
- Continue PM Programs to help ensure reliability and the reduction of maintenance costs
- Chemical Management- working closely with vendor to ensure boiler's tubes, remain clean and free of deposits; also ensuring building hot water systems are at proper nitrate and pH levels to prevent interior corrosion



2022/23 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	5.0	5.0	5.0	5.0										
Avg MW	4.5	4.7	4.5	4.6	Avg LBS/Hr	39,685	37,710	28,932	39,685	Max Peak Tons	8,379	4,760	5,762	8,379
Total MWH	19,513.5	10,037.8	8,283.3	37,834.6	Peak LBS/Hr	65,201	62,775	45,122	65,201	Min Tons	774	566	780	566

Purchased Power: 47,144.93 MWH

Accomplishments & Highlights 2022/2023

Building Management Systems

- Completed Sprinkler System repair projects in Greek Row House #7
- Repaired or replaced four Fire Pumps & Pump Controllers on campus
- Repaired fire curtain at Academic Classroom Building
- Oversaw multiple buildings repairs & renovations from Christmas 2022 freeze incident; returning buildings to usable condition before student return January of 2023 (Belfor, etc.)
- Repaired & replumbed Fire Suppression system to be compliant with new additions & renovations in James Union Building kitchen

Building HVAC

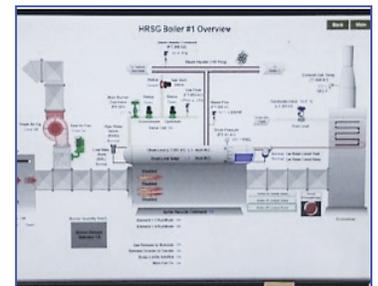
- Managed 65 maintenance projects campus wide: 18 of which were for the housing organization
- Supported Housing organization by completing 1175 work orders
- Developed PM processes for exhaust fans, air compressors, data center AC units
- Replaced 60-ton chiller at Ellington Human Sciences
- Provided support to Housing for three consecutive week-ends during student move-in

Filter Management

- Compiled comprehensive digital list of filters across campus with sizes, quantities, locations and costs
- Initiated filter change-out program to ensure Housing residences are changed on appropriate schedule
- Collaborated with work orders to update PMID attachments with correct filter sizes, quantities, and frequencies
- Collected critical information on boilers across campus for future maintenance contract



Filters



Goals 2023/2024

Building Management Systems

- Increase network reliability and speed by upgrading all controllers using older communication methods to Ethernet
- Increase network and equipment serviceability by changing all controller network protocols to BACnet IP for those currently not using it
- Continue expanding usage of Desigo remote notification feature to further improve after hour response times
- Standardize pump programs to allow for reliable redundancy of equipment where more than one pump is available
- Continue improving and streamlining front-end software for both graphics and programming to boost efficiency in servicing systems

Building HVAC

- Develop PM processes for managing 2000 fan coils in Housing complexes
- Develop maintenance process for start of quarter for Housing department

Filter Management

- Complete location and identification projects for steam and chilled water manholes
- Secure contract to provide required maintenance on boilers across campus
- Continue to update/correct records of filter information for inaccuracies
- Initiate student worker program to provide support to HVAC Technicians while gaining work experience

2022/2023		Energy Services: Project Work Orders								
Project Type	GW (Group WO's)		MP (Maintenance Project)		SCF (Sustainable Campus Fee)		SP (Special Project)		Total	
Subdepartment	# of WO's	Total Cost	# of WO's	Total Cost	# of WO's	Total Cost	# of WO's	Total Cost		
14 - HVAC	14	\$15,278	27	\$165,197	0	\$0	8	\$4,453	49	\$184,928
21 - Steam	5	\$693	17	\$100,172	0	\$0	0	\$0	22	\$100,865
27 - Central Utility Plant	0	\$0	9	\$120,788	0	\$0	0	\$0	9	\$120,788
50 - Insulation	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
52 - Energy Management	10	\$14,187	30	\$195,034	30	\$99,710	1	\$209	71	\$309,140
53 - PM Filters	1	\$1,623	16	\$105,021	1	\$0	0	\$0	18	\$106,644
Total	30	\$ 31,781	99	\$ 686,212	31	\$ 99,710	9	\$ 4,662	169	\$822,365

2022/2023		Energy Services: Maintenance and Operations Work Orders										
Project Type	Corrective Maintenance			Preventative Maintenance			Service Tasks			Total		
Subdepartment	# of WO's	Total Cost	Avg \$/WO	# of WO's	Total Cost	Avg \$/WO	# of WO's	Total Cost	Avg \$/WO	# of WO's	Total Cost	Avg \$/WO
14 - HVAC	1,220	\$424,291	\$348	155	\$31,797	\$205	13	\$203,399	\$15,646	1,388	\$659,487	\$475
21 - Steam	227	\$197,048	\$868	69	\$17,549	\$254	576	\$119,228	\$207	872	\$333,825	\$383
27 - Central Utility Plant	175	\$49,824	\$285	862	\$36,868	\$43	48	\$949,734	\$19,786	1,085	\$1,036,426	\$955
50 - Insulation	8	\$7,284	\$910	99	\$12,493	\$126	4	\$13,357	\$3,339	111	\$33,134	\$299
52 - Energy Management	606	\$252,033	\$416	67	\$40,022	\$597	95	\$546,242	\$5,750	768	\$838,297	\$1,092
53 - PM Filters	120	\$117,417	\$978	878	\$171,505	\$195	38	\$69,253	\$1,822	1,036	\$358,175	\$346
Total	2,356	\$1,047,897	\$445	2,130	\$310,234	\$146	774	\$1,901,213	\$2,456	5,260	\$3,259,344	\$620

Accomplishments & Highlights 2022/2023

Systems Engineering

- Supported construction administration with Science Building HVAC Upgrade capital maintenance project
- Completed in-depth study of window breakages at the Science Building
- Provided detailed estimate for relamping over 20 buildings with LED bulbs
- Organized all fume hood & biosafety cabinet annual inspections across campus
- Estimated & assisted with construction of individual projects from Chemistry & Biology departments about electrical & plumbing changes in Science Building

GIS and Locating

- Completed 435 utility locate tickets for contractors working on campus
- Maintained ongoing coordination with contractors and designers to assist with timely resolutions of utility routing conflicts and questions

Elevators & Generators

- Completed 1,092 total elevator work orders & inspections with associated spill prevention PM activities
- Completed 251 total generator work orders & inspections with associated spill prevention PM activities
- Answered 995 total 811 locate tickets
- Supported 2022/23 Elevator Modernization capital maintenance project updates in KUC, CKNB, Walker Library (4 Passenger elevators), & Peck Hall #1

Information Technology/Operational Technology (IT/OT)

- Paper reduction & process enhancement for daily time sheets & work order file management
- Completed the Desigo migration in HVAC
- Deployed numerous sensors to assist in freeze prevention

Key Shop

- Supported opening of new Concrete & Construction Management Building
- Provided input & direction for new access control systems serving Capital Outlay Projects including Student Athletic Performance Center and new Applied Engineering Building

2022/2023		Engineering Services Activities: Project Work Orders									
Project Type	General Work (Insurance)		MP (Maintenance Project)		SCF (Sustainable Campus Fee)		SP (Special Project)		Total		
	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	
15 - Key Shop	3	\$735	1	\$9,133	0	\$0	49	\$18,651	53	\$28,520	
46 - Systems Engineering	0	\$0	6	\$243,563	0	\$0	0	\$0	6	\$243,563	
47 - Elevators, Generators, & Utility Locating	3	\$533	26	\$19,486	1	\$41	0	\$0	30	\$20,061	
Total	6	1,268	33	\$272,182	1	\$41	49	\$18,651	89	\$292,143	

Goals 2023/2024

Systems Engineering

- Provide review & ongoing participation in the construction phase of Applied Engineering Building & Student Athletic Performance Center; conduct design review & provide engineering input for design of the KOM/RH Renovation & other capital maintenance projects
- Implement sustainable campus projects that reduce energy loss & improve monitoring capabilities across campus

GIS and Locating

- Purchase new electromagnetic & ground penetrating radar equipment with GPS for data collection & updating GIS maps
- Hire new Engineering Services Technician to assist with GIS data collection
- Support documentation of new & existing underground utilities at Applied Engineering Building & Student Athletic Performance Center

Key Shop

- Complete Lenel specific training for personnel in the key shop
- Provide input and direction for new access control systems for the Campus Wide Access Control and Security updates project

Elevators & Generators

- Support new Applied Engineering & Student Athletic Performance Center projects
- Continue improving barcode system procedures to provide more accurate equipment inspection information & diagnostic capabilities

Information Technology/Operational Technology (IT/OT)

- Maintain the ongoing improvement of monitoring & control systems throughout campus
- Promote the dissemination & prioritization of critical information to support decision-making processes
- Simplify business processes & streamline applications
- Enhance & sustain inter-university & inter-departmental communication by utilizing data for informed decision-making
- Modernize & phase out outdated systems that have exceeded their useful lifespan

2022/2023		Engineering Services Activities: M&O Work Orders										
Sub Department	Corrective Maintenance			Preventative Maintenance			Service Tasks			Total		
	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost
13 - Key Shop	1,326	\$231,092	\$174	25	\$4,208	\$168	37	\$101,436	\$2,742	1,388	\$336,737	\$243
44 - Operational Technologies	16	\$7,597	\$475	0	\$0	\$0	0	\$0	\$0	16	\$7,597	\$475
46/48 - Systems Engineering/ General Engineering Services	9	\$17,053	\$1,895	3	\$19,672	\$6,557	12	\$192	\$16	24	\$36,917	\$1,538
47 - Elevators/Generators/ Utility Locating	283	\$23,724	\$84	763	\$36,836	\$48.28	464	\$218,601	\$471	1,510	\$279,161	\$185
Total	1,634	\$279,466	\$171	791	\$60,717	\$77	513	\$320,229	\$624	2,938	\$660,412	\$225

Environmental Health & Safety (EH&S) Services

Alan Parker Mark Hatcher Jake Turner Katherine Antone

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Accomplishments & Highlights 2022/2023

Fire & Life Safety Services

- Completed Campus Wide Siren System Control System repairs & updates
- Removed 192 Guardian III kitchen hood systems from Womack Lane Apartment complex - created fiscal savings of \$82,560 every five years or \$16,512 per fiscal year
- Completed two Sprinkler System repair projects in Greek Row House #3 & #5 - repaired or replaced main lines that were corroded or leaking
- Added two additional monthly inspection programs for Area of Refuge Phones & Automated External Defibrillators designed to provide better service & protection for Campus
- Updated inspection processes for all preventative inspections & maintenance of Life Safety Systems by transitioning from a manual, handwritten process to scannable barcodes & electronic filing of inspections

Industrial Hygiene and Laboratory Safety

- Completed Campus Chemical Hygiene Plan with input from the Chemistry & Biology departments
- Prepared new Concrete & Construction Management building with proper cautionary laboratory signage before students occupy & used building for classes & labs
- Completed IHLS personnel certifications for mold inspections

Civil & Environmental Engineering Services

- Annual Report submitted to TDEC for the 2022-2023 reporting year
- Renewed MOU with City of Murfreesboro for 2023-2024 - renewable through June 2031
- Conducted numerous Stormwater events & activities in coordination with Murfreesboro Water Resources Department
- Coordinated with Campus Planning/Construction Management on stormwater & water utilities to ensure proper design & installation on new Applied Engineering Building, Tennis Complex, & Student Athletic Performance Center projects
- Established ongoing working sessions with Murfreesboro Water Resources Department to collaborate on joint repair & replacement projects on campus

Goals 2023/2024

Fire & Life Safety Services

- Replace Fire Pump & Controller at Floyd Stadium
- Update Fire Alarm network from Existing 4120 Simplex to ES Net Hardware in Three phases
- Complete Murphy Center Structural Issues work in conjunction with Contractor & TN State Fire Marshal's Office
- Continue work on Fire Extinguisher Exchange Program
- Implement a Digital Hot Work permit program for Campus

Industrial Hygiene and Laboratory Safety

- Implement an aerosol can recycling program
- Continue to maintain compliance with all Federal & State regulatory agencies
- Incorporate Freezer Auditing into the IHLS program
- Maintain EHS equipment calibrations
- Work with MTSU Biology committee to revise the Biosafety Manual as needed

Civil & Environmental Engineering Services

- Continue Working with Campus Planning/Construction Management on upcoming campus utilities project(s)
- Coordinate domestic water, sanitary sewer, & stormwater repair work on campus with the City of Murfreesboro
- Update campus drainage map as new projects arise
- File NOI with TDEC for coverage under the new NPDES permit & obtain NOC for the City & MTSU
- Continue working with the City of Murfreesboro on Stormwater Education & Outreach to meet NPDES permit compliance requirements

2022/2023	EHS & Environmental Engineering: Project Work Orders											
	Project Type		General Work (Insurance)		MP (Maintenance Project)		SCF (Sustainable Campus Fee)		SP (Special Project)		Total	
	Subdepartments		# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost
30/33/36 - Fire & Life Safety Services/Inspections	29	\$17,094	15	\$288,884	0	\$0	0	\$0	0	\$0	44	\$305,978
32 - Civil & Environmental Engineering	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
34/35 - Industrial Hygiene & Lab Safety (IHLS)	2	\$2,375	6	\$78,598	0	0	6	\$440.00	14	\$81,413		
Total	31	\$19,469	21	\$367,482	0	\$0	6	\$440	58	\$387,391		

2022/2023	EHS & Environmental Engineering Activities: M&O Work Orders											
	Corrective Maintenance			Preventative Maintenance			Service Tasks			Total		
	# of WO	Total Cost	Avg Cost	# of WO	Total Cost	Avg Cost	# of WO	Total Cost	Avg Cost	# of WO	Total Cost	Avg Cost
30/33/36 - Fire & Life Safety Services	475	\$29,195	\$61	590	\$12,752	\$22	1796	\$575,068	\$320	2,861	\$617,016	\$216
32 - Civil & Environmental Engineering	3	\$1,178	\$393	91	\$2,003	\$22	14	\$1,323	\$95	108	\$4,504	\$42
34/35 - Industrial Hygiene & Laboratory Safety	66	\$11,676	\$177	242	\$38,233	\$158	12	\$644	\$54	320	\$50,552	\$158
Total	544	\$42,049	\$77	923	\$52,988	\$57	1822	\$577,035	\$317	3289	\$672,072	\$204

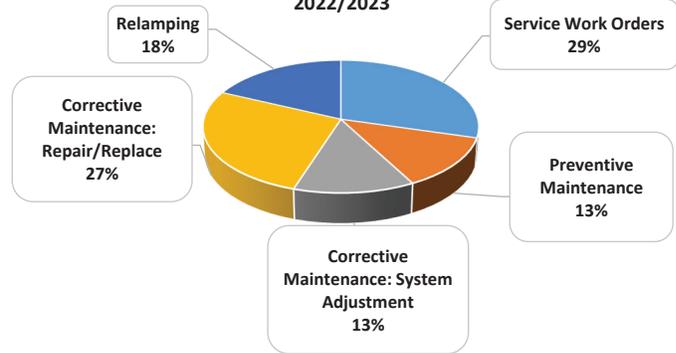
Accomplishments & Highlights 2022/2023

- Status of 2022-23 Goals:
 - Functionality of the main waste line at the Student Services Building continues its improved reliability with the work completed thru continued monitoring the condition; reserving final two stages of proposed modifications if needed
 - Installed additional 220+ Sternberg lights retrofits with LED lamps; program is almost 75% complete for the campus
 - Began updating the PFIS records for roofing, electrical and plumbing for Student Housing; updates are an ongoing process
 - Added new outside lighting to multiple areas to provide students, faculty, staff, and visitors with safer nighttime campus experience
- Completed over 3,600 individual service requests for FY22/23
- Completed 57 (MP-2) maintenance projects valued at \$5,00 or more; completed 84 additional SP-2 special renovation projects valued over \$1,150,000
- Completed first annual audit of the Water Intrusion Plan (WIP) for MTSU; submitted to the State of Tennessee in FY 2021-2022. Exercise of WIP during severe winter freeze of December 2022 limited damages to under \$175,000; other similar institutions suffered well over \$1,000,000 in damages
- Retrofitted over 220 Sternberg Walkway Lights to LED to reduce burnout frequency and electricity consumption
- Completed Womack electric distribution loop repairs from damages sustained during the February 2021 ice/snowstorm; supply chain and manpower issues slowed all types of construction, maintenance, and repair projects during the COVID-19+ era

Goals 2023/2024

- Continue to monitor Power BI for evidence of modifications to the sanitary sewer line at the Student Services Building are producing the desired results; confirm further modifications are not necessary
- Continue to retrofit 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 thus improving lighting reliability and reducing MTSU's carbon footprint
- Continue the process of periodic updating of PFIS records for non-E&G campus buildings
- Continue to develop and implement a responsible party training program for newly adopted MTSU Water Intrusion Plan

Building Services: Man-Power Allocation
2022/2023



New Science Building



2022/23 Building Services: Project Work Orders

Project Type	General Work (Insurance)		MP (Maintenance Project)		SCF (Sustainable Campus Fee)		SP (Special Project)		Total	
	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost
22 - Metal Shop	0	\$0	0	\$0	0	\$0	4	\$1,383	4	\$1,383
40 - General Maintenance	26	\$13,949	36	\$260,622	12	\$167,239	17	\$2,892	91	\$444,702
90 - Construction Services	15	\$12,277	43	\$960,038	0	\$0	154	\$51,813	212	\$1,024,128
Total	41	\$26,226	79	\$1,220,660	12	\$167,239	175	\$56,088	307	\$1,470,213



2022/23 Building Services: M&O Work Orders

Subdepartments	Corrective Maintenance			Preventative Maintenance			Service Tasks			Total		
	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost
22 - Metal Shop	38	\$8,693	\$229	0	\$0	\$0	24	\$7,790	\$325	62	\$16,482	\$266
40 - General Maintenance	2,530	\$427,055	\$169	357	\$88,244	\$247	136	\$129,178	\$950	3,023	\$644,477	\$213
90 - Construction Services	797	\$230,163	\$289	5	\$380	\$76	36	\$51,457	\$1,429	838	\$281,999	\$337
Total	3,365	\$665,910	\$198	362	\$88,624	\$245	196	\$188,425	\$961	3,923	\$942,959	\$240

Accomplishments & Highlights 2022/2023

- Completed construction of the new Concrete & Construction Management Building in October 2022
- Started construction of the new Student Athlete Performance Center in July 2023
- Completed the SCCM Satellite Chiller Expansion & Demo in March 2022
- Started construction of the new Applied Engineering Building May 2023
- Completed roofing projects for the Tennessee Livestock Center and Cope Administration Building in September 2022 and February 2023 respectively
- Started quarterly coordination meetings with Campus Planning
- Finished replacement of the exterior glass curtain wall at Murphy Center with unique, electrochromic (electronically tintable) Sage glass



School of Concrete and Construction Management
North Facade

Goals 2023/2024

- Improve communication of construction caused disruptions to stakeholders and the campus community overall; work with Campus Planning in Program and Design phases for better understanding of Construction Schedule timelines
- Continue to look for opportunities to participate in continuing education and Webinars to keep up to date of construction processes and technologies
- Finish construction of the new Tennis Center in November 2023
- Continue to gather and update requests for Capital Maintenance projects and Archive project data into Capital Construction common drive for historical data for preservation; work with Facilities ITD to help transfer information to more accessible and up to date platforms
- Finish construction of the Applied Engineering Building in March of 2024
- Continue to participate in standardizing and updating Facilities work and other standards
 - Support for Campus Planning for continued standardization of work completed on campus locally as well as Capitially funded projects
 - Support Facilities Services for standardization for continuity of equipment, processes, and scope of work
- Work to include project progress photos in Multivista to improve accurate underground utilities for GIS and new conditions

2022/2023 Capital Projects Summary			
FY Funded New Projects (Q1)		FY Completed Projects (Q1)	
Campus Wide Lighting/Lighting Controls	Multiple Bldgs Exterior Envelope Updates	TN Livestock Roof Repair	
Multiple Bldgs Mechanical/Controls Updates	KOM & Rutledge Hall Renovations	Alarm System Upgrades DYS, HONORS	
Campus Wide Access Control/ Security Updates	Multiple Bldgs Elevator Modernization Phase 3		
FY Funded New Projects (Q2)		FY Completed Projects (Q2)	
		SCCM Satellite Chiller Expand and Demo	
		SCCM Building Phase 2	
FY Funded New Projects (Q3)		FY Completed Projects (Q3)	
Water & Sewer System Updates Phase 2		Murphy Center Window Replacement	
		Several Buildings Exterior Repairs	
		Cope Building Roof Replacement	
FY Funded New Projects (Q4)		FY Completed Projects (Q4)	
Scarlett Commons Stairs Repair		College Heights Electrical Upgrades	
Athletic Video Board Upgrades		Campus Wide Life Safety Systems Upgrades	



Murphy Center New Curtain Wall

2022/2023 Construction Administration Capital Project Summary										
2022/2023	1st FY Quarter		2nd FY Quarter		3rd FY Quarter		4th FY Quarter		22/23 FY Totals	
	# Projects	Value of Projects	# Projects	Value of Projects						
Beginning Active Projects	12	\$156,919,080	16	\$205,491,324	14	\$173,408,294	12	\$167,899,201	12	\$156,919,080
New Projects	6	\$49,209,876	0	\$0	1	\$565,483	2	\$4,847,383	9	\$54,622,742
Completed Projects	2	\$637,631	2	\$32,083,030	3	\$6,074,576	2	\$1,511,375	9	\$40,306,612
Ending Active Projects	16	\$205,491,324	14	\$173,408,294	12	\$167,899,201	12	\$171,235,210	12	\$171,235,210

Accomplishments & Highlights 2022/2023

- Utilization of Microsoft Teams for project updates
- Rebid university Direct Order contract
- Continued to attend regular Continuing Education training to support Interior Design certifications and state licensure
- Major completed renovations include:
 - o TAF classroom renovations in Honors, McFarland, and BAS
 - o Health Services exam room paint and flooring replacement
 - o Center for Innovation in Media collaborative area renovation
 - o Creative Marketing Solutions renovation at Fairview
 - o Walker Library monumental stair railing refinishing
 - o ACE Learning Center playground enhancements and expansion
 - o Scarlett Commons – multiple apartment renovations
 - o Fermentation Sensory Lab renovation in SAG
 - o BAS South Lobby – Installation for Insurance Hall of Fame
 - o Miller Education Center – Completion of Songwriter’s suite
 - o Multiple renovations in Cason Kennedy Nursing classrooms and student spaces

Goals 2023/2024

- Utilize Power BI for PFI updates
- Hire and train new Administrative Assistant since retirement of Betty Weigant
- Establish pool of general contractors available to work on small renovations
- Successfully complete major renovations:
 - o BAS Courtyard remodel
 - o Dairy Processing Facility at the Vocational Agriculture site
 - o Large format LED screen installation at Bragg Media & Entertainment
 - o Multiple renovations in Cason Kennedy Nursing Building
 - o Relocation of Unmanned Aircraft Systems classroom and lab
 - o Multiple renovations at Health Services including a new restroom, new office, improved reception/check-in counter, and flooring and painting improvements
 - o Main Men’s Locker Room renovation at Campus REC Center
 - o TAF Classroom renovations in Bragg, BAS, COE, and Horticulture
 - o Renovate Graduate Studies main office and public spaces
 - o Internal Audit renovation and relocation

Insurance Hall of Fame
BAS South Lobby



Isometric Lab
Equipment
Installation
DSB 147

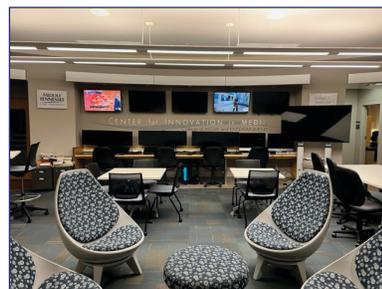


Construction/Renovation Funded Project Summary

2022/2023	1st FY Qtr		2nd FY Qtr		3rd FY Qtr		4th FY Qtr		22/23 FY Totals	
	# Projects	Value of Projects	# Projects	Value of Projects						
Beginning Active Projects	71	\$2,650,713	52	\$2,218,003	53	\$2,603,144	55	\$2,304,110	71	\$2,650,713
Added Projects	34	\$393,294	39	\$1,158,203	42	\$500,839	43	\$1,796,626	158	\$3,848,962
Completed Projects	53	\$826,004	38	\$773,062	40	\$799,873	39	\$1,013,074	170	\$3,412,013
Ending Active Projects	52	\$2,218,003	53	\$2,603,144	55	\$2,304,110	59	\$3,087,662	59	\$3,087,662

Construction/Renovation Requested Projects Summary

2022/2023	1st FY Qtr	2nd FY Qtr	3rd FY Qtr	4th FY Qtr	22/23 FY Totals
Beginning Project Requests	58	78	77	100	58
Added Requests	68	52	76	52	248
Approved Requests = Change to Active Project	34	39	42	43	158
Cancelled & Expired Requests	14	14	11	22	61
Remaining Project Requests	78	77	100	87	87



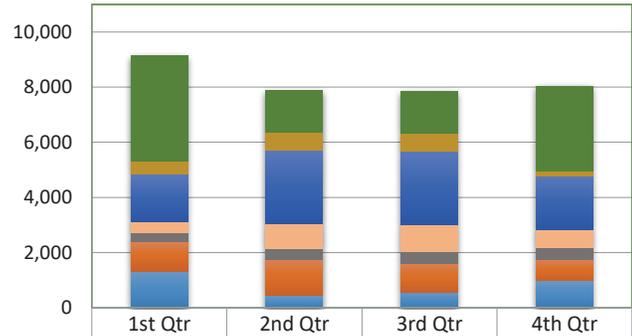
Center for Innovation Media
Bragg 107
Student Collaborative Area

Accomplishments & Highlights 2022/2023

- Continued sidewalk grinding to remove small imperfections and uneven spots on sidewalks around campus
- Continued tree replacement program
- Implemented GPS/Autonomous mowers to mow special areas on campus
- Worked to relandscape areas of campus to improve maintainability
- Continued training

**Grounds Services:
Labor by Activity
2022/2023**

Man-Power
Allocation
by Hour



Goals 2023/2024

- Continue tree replacement program and explore tree care program
- Relandscape areas of campus that were damaged from the severe winter cold
- Explore other areas of campus for GPS/Autonomous mowers
- Continue sidewalk grinding and repair program
- Look for ways to help improve erosion control around certain drainage areas
- Continue training

Total Hours: 32,945



2022/2023		Grounds: M&O Work Orders										
Subdepartment	Corrective Maintenance			Preventative maintenance			Service Task			Total		
	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost
13 - Grounds	251	\$127,772	\$509	41	\$1,404	\$34	138	\$834,068	\$6,044	430	\$963,244	\$2,240
19 - Greenhouse	94	\$8,843	\$94	7	\$10,667	\$1,524	58	\$236,466	\$4,077	159	\$255,976	\$1,610
31 - Dumpsters	28	\$8,409	\$300	2	\$264	\$132	31	\$199,800	\$6,445	61	\$208,473	\$3,418
Total	373	\$145,024	\$389	50	\$12,335	\$247	227	\$1,270,334	\$5,596	650	\$1,427,693	\$2,196

2022/2023		Grounds: Project Work Orders									
Project Type	GW (Insurance)		MP (Maintenance Project)		SCF (Sustainable Campus Fee)		SP (Special Project)		Total		
	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	
13 - Grounds	0	\$0	22	\$193,049	9	\$44,494	2	\$552	33	\$238,095	
Total	0	\$0	22	\$193,049	9	\$44,494	2	\$552	33	\$238,095	

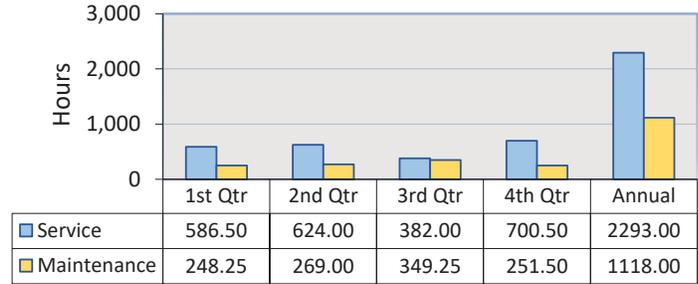
Accomplishments & Highlights 2022/2023

- Continued to upgrade shop equipment
- Purchased new fleet vehicles
- Implemented new fleet vehicle cleaning program
- Met all state requirements for underground fuel storage tanks
- Continued training

Goals 2023/2024

- Continue to upgrade shop diagnostic equipment to keep up with ever changing auto technology
- Explore way to implement computerized fleet vehicle reservations
- Explore replacement plan for underground storage tanks
- Continue to upgrade Motor Pool fleet vehicles
- Continue fleet vehicle cleaning program
- Continue training

Motor Pool Man-Power Allocation
2022/2023



2022/2023		Motor Pool: Project Work Orders									
Project Type	GW (Insurance)		MP (Maintenance Project)		SCF (Sustainable Campus Fee)		SP (Special Project)		Total		
Subdepartment	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	# of WO	Total Cost	
23 - Motor Pool	0	\$0	2	\$29,506	0	\$0	0	\$0	2	\$29,506	
Total	0	\$0	2	\$29,506	0	\$0	0	\$0	2	\$29,506	



2022/2023		Motor Pool: M&O Work Orders										
Subdepartment	Corrective Maintenance			Preventative maintenance			Service Task			Total		
	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost	# of WO	Total Cost	Avg. Cost
23 - Motor Pool	479	\$145,168	\$303	1074	\$485,408	\$452	125	\$125,337	\$1,003	1678	\$755,913	\$450
Total	479	\$145,168	\$303	1074	\$485,408	\$452	125	\$125,337	\$1,003	1678	\$755,913	\$450

Custodial Services Brenda Wunder

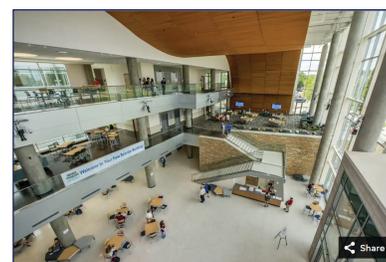
Accomplishments & Highlights 2022/2023

- Brought contractor service on-line for School of Concrete and Construction Management
- Brought contractor service on-line for Housing: Cummings Hall
- Ensured the custodial contractor service met contract terms
- Completed mandatory and recommended training sessions as required by the University and FSD/EH&S

E&G Space 2022/2023	Gross Square Feet	Cleanable Square Feet	% Cleanable Square Feet
Facilities Services Department			
In-house	249,449	114,707	4%
Contract Labor	2,745,424	2,053,537	77%
Murphy Center Complex			
In-house	-	-	0%
Contract Labor	595,019	501,817	19%
Totals	3,589,892	2,670,061	100%

Goals 2023/2024

- Bring Tennis Building and Tennis Platform on-line – December 2023
- Ensure custodial contract terms are upheld as written
- Complete mandatory and recommended training required by the University and FSD/EH&S



Student Union Lobby

Engineering Services: Training

Alan Parker Katherine Antone

Accomplishments & Highlights 2022/2023

- Assigned safety training topics in Safe Colleges to FSD employees
- Updated Safe Colleges training records for employees who completed off-line training sessions
- Coordinated topic-specific safety training (requiring both classroom and hands-on instruction) for the FSD and other campus departments

Goals 2023/2024

- Serve as administrator/coordinator for Safe Colleges on campus
- Create training assignments according to the Recommended Training List developed by EHS
- Incorporate off-line training completed by FSD employees into the Safe Colleges system
- Review and schedule any specialized safety training topics as requested by FSD Directors or Supervisors

FSD Employees Training Records 2022/2023		Leadership/Professional Development			Technical Training		
By Training Type	# Employees	# Employees Trained	Total Hours		# Employees Trained	Total Hours	
	(Full-Time)		In-House	Conference		In-House	Conference
Central Administration							
-Assistant Vice President	2	1	1.0	9	2	10.0	0
-Accounting Information Services	5	1	1.0		5	10.0	0
Engineering Services							
-Director	1	1	5.0		1	5.0	0
-Center for Energy Efficiency	2	2	16.8	0	2	6.5	0
-Work Orders	4	4	4.0	0	4	14.0	0
-Civil/Environmental Services	4	4	4.0	12.0	4	18	0
-Industrial Hygiene & Lab Safety	2	2	2.0		2	10.5	0
-Life Safety & Emergency Management	4	4	4.5		4	30	0
-Key Shop	5	1	1.0		5	24	0
-Training	1	0	0.0		0	0.0	0
-Systems Administrator	1	1	2.0		1	5	0
Building Services	14	14	11.0	9	14	50.5	0
Construction Administration	4	4	4.0		4	46.0	0
Construction Renovation	4	3	0.0	24.0	4	29.0	0
Energy Services	19	19	0.0	14	19	129.0	0
Grounds Services/Motor Pool	21	21	11.5		21	62.5	0
Custodial Services	11	11	11.0		11	55.5	0
TOTALS	104	93	78.8	68	103	505.5	0

Number of Employees per Total Hours Trained 2022/2023	# Employees	0 Hrs	1-10 Hrs	11-20 Hrs	>20 Hrs
Central Administration					
-Assistant Vice President	2		1	1	
-Accounting Information Services	5	1	4		
Engineering Services					
-Director	1		1		
-Center for Energy Efficiency	2		2		
-Work Orders	4		4		
-Civil/Environmental Services	4		3	1	
-Industrial Hygiene & Lab Safety	2		1	1	
-Life Safety & Emergency Management	4		4	0	
-Key Shop	5		5		
-Training	1		1		
-Systems Administrator	1		1		
Building Services	14		14		
Construction Administration	4		4		
Construction Renovation	4	1	3		
Energy Services	19	1	18		
Grounds Services/Motor Pool	21		21		
Custodial Services	11		11		
TOTALS	104	3	98	3	0



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.

Campus-Wide (non-FSD) 2022/2023	
Category	Completed
Emergency Management	100
Environmental Safety	2,101
Environmental Health	609
Human Resources	737
Total	3,547

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	B
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
VEE	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 combing 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		
		> 90	80 - 90	< 80
Site Suitability	High	A	B	C
	Medium	A	B	C
	Low	C	D	D
		Physical Building Rating		

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					
2021 - 2022	Priority	Project Name	FY 21/22 Request	Appropriated Funding	Project Status
	1	Campus Wide Utilities Phase 1	\$ 1,139,000	\$ 1,139,000	Funded
	2	Several Buildings Elevator Modernization Phase 1	\$ 950,000	\$ 950,000	Funded
	3	Campus Wide Life Safety Systems Upgrade Phase 1	\$ 400,000	\$ 400,000	Funded
	4	Cope Building Roof Replacement	\$ 600,000	\$ 600,000	Funded
	5	Science Building HVAC & Exhaust System Upgrades	\$ 2,000,000	\$ 2,000,000	Funded
	6	Several Buildings Elevator Modernization Phase 2	\$ 885,000	\$ 885,000	Funded
	7	Campus Wide Life Safety Systems Upgrade Phase 2	\$ 1,285,000	\$ 1,285,000	Funded
	8	Campus Wide Utilities Phase 2	\$ 1,816,000	\$ 1,816,000	Funded
	9	College Heights Electrical Upgrades	\$ 400,000	\$ 400,000	Funded
	10	Tennessee Livestock Roof Replacement/Refurbishment	\$ 490,000	\$ 490,000	Funded
	Total:		\$ 9,965,000	\$ 9,965,000	
2022 - 2023	Priority	Project Name	FY 22/23 Request	Appropriated Funding	Project Status
	1	Multiple Buildings Elevator Modernization Phase 3	\$ 1,407,800	\$ 1,407,800	Funded
	2	Campus Wide Lighting and Lighting Control Updates	\$ 952,200	\$ 952,200	Funded
	3	Multiple Buildings Mechanical and Controls Updates	\$ 2,000,000	\$ 2,000,000	Funded
	4	Campus Wide Access Control and Security Updates	\$ 800,000	\$ 800,000	Funded
	5	Multiple Building Exterior Envelope Updates	\$ 2,000,000	\$ 2,000,000	Funded
	6	Campus Wide Utilities Phase 3	\$ 2,500,000	\$ -	Not Funded
	7	Multiple Buildings Roof Replacements	\$ 1,400,000	\$ -	Not Funded
	8	Campus Wide Sidewalk Repair and Replacements	\$ 738,000	\$ -	Not Funded
	Total:		\$ 11,798,000	\$ 7,160,000	
2023 - 2024	Priority	Project Name	FY 23/24 Request	Appropriated Funding	Project Status
	1	Central Plant & Campus Utilities Updates Phase 1	\$ 3,000,000	\$ 3,000,000	Funded
	2	Central Plant & Utilities Updates Phase 2	\$ 2,000,000	\$ 2,000,000	Funded
	3	Central Plant & Utilities Updates Phase 3	\$ 2,000,000	\$ -	Not Funded
	4	Multiple Buildings Roof Repairs & Replacements	\$ 1,920,000	\$ -	Not Funded
	5	Multiple Buildings Structural & Exterior Envelop Repairs	\$ 2,000,000	\$ -	Not Funded
	6	Campus Wide Life Safety Systems Updates	\$ 1,500,000	\$ -	Not Funded
	7	Multiple Buildings Elevator Modernization	\$ 2,500,000	\$ -	Not Funded
	8	Multiple Buildings Hydronic Systems Renovation	\$ 480,000	\$ -	Not Funded
	9	Campus Wide Sidewalk Repair & Replacements	\$ 400,000	\$ -	Not Funded
	Total:		\$ 15,800,000	\$ 5,000,000	
2024 - 2025	Priority	Project Name	FY 24/25 Request	Appropriated Funding	Project Status
	1	Campus Fire/Life Safety Systems Updates Phase 1	\$ 2,500,000	\$ -	Funding Request
	2	Multiple Buildings Roof Repairs/Replacements Phase 1	\$ 2,000,000	\$ -	Funding Request
	3	Campus-wide Lighting & Electrical Updates Phase 1	\$ 1,000,000	\$ -	Funding Request
	4	Multiple Buildings HVAC & Controls Updates Phase 1	\$ 750,000	\$ -	Funding Request
	5	Multiple Buildings Structural/Envelope Repairs Phase 1	\$ 1,000,000	\$ -	Funding Request
	6	Campus-wide Access Controls & Security Updates Phase 1	\$ 1,000,000	\$ -	Funding Request
	7	Central Plant & Campus Utilities Updates Phase 2	\$ 1,000,000	\$ -	Funding Request
	8	Multiple Buildings Elevator Modernizations Phase 1	\$ 2,400,000	\$ -	Funding Request
	9	Multiple Buildings HVAC & Controls Updates Phase 2	\$ 750,000	\$ -	Funding Request
	10	Campus-wide Lighting & Electrical Updates Phase 2	\$ 2,000,000	\$ -	Funding Request
	11	Multiple Buildings Roof Repairs/Replacements Phase 2	\$ 1,000,000	\$ -	Funding Request
	12	Multiple Buildings Structural/Envelope Repairs Phase 2	\$ 1,000,000	\$ -	Funding Request
	13	Central Plant & Campus Utilities Updates Phase 3	\$ 1,000,000	\$ -	Funding Request
	Total:		\$ 17,400,000	\$ -	

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 at the time, the intent of the MTSU Sustainable Campus Fee Program is to decrease consumption of non-renewable energy with a directed portion for purchasing 'green power' from TVA to facilitate production of electricity from wind, solar power, and methane gas as a clean alternative to traditional energy sources. The remainder of the funds are used for local campus projects.

MTSU Sustainable Campus Fee (SCF) Program

Approved Projects	2006-18	2018-19	2019-20	2020-2021	2021-2022	2022-2023	Totals
Green Power Purchase	\$ 2,350,000	\$ 50,000	\$ 50,000	\$ 22,500	\$ 25,000	\$ 25,000	\$ 2,522,500
Air Compressor System- Integrated control module/program				\$ 6,000			\$ 6,000
Air Handling Units Energy Upgrades Rec			\$ 70,000				\$ 70,000
Air Flow Meter Installations	\$ 12,500						\$ 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
Alt Fuel - Development of High Performance Additive fuels to Reduce Emission of Pollutants				\$ 4,474			\$ 4,474
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 (7)	\$ 36,223	\$ 12,600	\$ 13,600	\$ 13,600	\$ 14,600		\$ 90,623
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
Bicycle Friendly Campus/shelters PH (1)/ shelter PH (1)/Pump	\$ 97,132	\$ 11,500	\$ 11,500	\$ 5,800	\$ 1,095	\$ 9,360	\$ 136,387
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 - Recycling of Fermentation Waste for Biofuels					\$ 8,500		\$ 8,500
Biofuels- Ultrasonic Generator and Biotech Applications Research	\$ 11,180						\$ 11,180
Biofuels - Reduction of Toxicants CO & Benzene from biofuel combustion					\$ 3,665		\$ 3,665
Biorenewable Solvents for Pigment Extraction and Textile Dyeing		\$ 380					\$ 380
Blast Hand Dryers for REC/ Hand Dryers (LIB,FAIR)	\$ 20,377						\$ 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 PLT- Pressure Gauges Install/Heat Exchanger/ Water Temp sensor	\$ 1,000				\$ 11,000	\$ 12,000	\$ 24,000
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	\$ 84,151		\$ 4,000				\$ 88,151
Closed Loop Sediment Filtering System (KUC, LIB, MC, TODD, SAG, VET, LRC, BRAGG, JH, CAB, CKNB, EHS, BDA, BAS, WMB, MEC other Bldgs)	\$ 211,350	\$ 10,000		\$ 5,000	\$ 9,000		\$ 235,350
Dehumidifier Project in VET 108	\$ 13,600						\$ 13,600
Development of a Biosensor to Detect Hydrogen Production	\$ 4,250						\$ 4,250
Electric Auto-Mower - Murphy Center					\$ 12,800		\$ 12,800
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	\$ 8,060						\$ 8,060
Energy -Flow Meter; Compact Infrared Cameras for Energy Audits	\$ 18,350						\$ 18,350
Energy Analysis- Infr Thermometer Guns/Sensors&Monitoring Tools	\$ 5,405						\$ 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 (2)	\$ 11,617				\$ 14,184		\$ 25,801
Flowmeter BTUmeter for MC/VET/AMG/RH/Cope/Cogen/SCI		\$ 9,000	\$ 27,000		\$ 12,000	\$ 38,000	\$ 86,000
Hot/Chilled Water Valve Assessment	\$ 5,000						\$ 5,000
HVAC Controls Replacement (WMB)(RECS-8)	\$ 29,950					\$ 72,000	\$ 101,950
HVAC Pleated Filter Projects- SCI, JH, FAIR, BRAGG, CKNB, Horse Science, HOB, WMB, ROTC, COE, HONR, Public Safety	\$ 19,999						\$ 19,999
HVAC Pocket Filter- Multiple Buildings (21+)/ Synthetic CKN,PH,BRAG	\$ 151,000	\$ 3,905		\$ 10,765			\$ 165,670
Install FilterPave Porous Pavement in Parking Lot on Champion Way	\$ 18,665						\$ 18,665
Install Variable Frequency Drives- JH, LIB, BDA,MC,BAS,MC; Replace VFD LIB	\$ 53,846			\$ 7,743	\$ 47,000	\$ 35,000	\$ 143,589
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+)	\$ 116,409	\$ 16,200					\$ 132,609
Insulated Garage Door Replacement- Motor Pool	\$ 3,950						\$ 3,950
ITD-AMX Resource Mgmt Suite Sys Upgrade; Virtual Mgmt Software	\$ 17,500						\$ 17,500
ITD- "Lights out" Cope Data Center	\$ 1,316						\$ 1,316

(Continued on page 23)

MTSU Sustainable Campus Fee, continued



Approved Projects	2006-18	2018-19	2019-20	2020-2021	2021-2022	2022-2023	Totals
ITD - Electric Energy Resource Management Solutions						\$ 18,125	\$ 18,125
Lab Upgrade of Instr (ICP-OES) Donated by TN Health Dept. Lab	\$ 7,400						\$ 7,400
Lamp Crusher	\$ 4,000						\$ 4,000
Landscape - JUB				\$ 8,000			\$ 8,000
Laser Alignment Devices	\$ 5,681						\$ 5,681
Light Switch Plate Labels	\$ 2,500				\$ 1,000		\$ 3,500
Lighting- Ann Campbell Early Learning Center LEDs		\$ 5,696					\$ 5,696
Lighting Retrofits Mechtronics Lab, MTSU Airport Ramp Lights, Aircraft Maint Lab	\$ 9,050	\$ 4,300			\$ 13,000		\$ 26,350
Lighting- Retrofitted LEDs/ Outside Lamps : Old Main Circle, Walnut Grove, Rutherford Lot, E Alumni Dr, Greek Row, Ezell, Womack, Sims/Beasley, DSB, JUB, RH, VET, JACK/ JUB-RH, Grove, PrHouse, ING, MON, Lyon, Old Main		\$ 39,412	\$ 39,600	\$ 39,600	\$ 71,100	\$ 142,500	\$ 332,212
S Lib Quad AMG Baseball STAD Woodfin Soccer Cogen Area Central							
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, AMG Gym	\$ 175,789		\$ 5,600			\$ 23,000	\$ 204,389
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
Polution monitoring of Middle Point Landfill - water			\$ 7,990				\$ 7,990
Poster Campaign and Earthwise Reusable Bag Project	\$ 18,160						\$ 18,160
Pressure Differential Sensors for MOH, BRAG, CKN, DSB, JUB, others		\$ 4,000		\$ 4,000			\$ 8,000
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	\$ 8,500						\$ 8,500
Recycling Support for Special Events (9)	\$ 17,500	\$ 3,500	\$ 3,500		\$ 3,500	\$ 3,500	\$ 31,500
Recycling Supplies for MTSU Recycling Program	\$ 77,500	\$ 3,500	\$ 9,600	\$ 3,000	\$ 2,500		\$ 96,100
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 Efcy motor in HOB, WMB, SAG, MC, TLC	\$ 57,394						\$ 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 (PhVI)(PhVII)(PhVIII)	\$ 24,522	\$ 3,510	\$ 2,723	\$ 2,402			\$ 33,157
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- Plastic Recycling Priorities: Quantifying Different types of Microplastic Particles found in Surface Water				\$ 6,636			\$ 6,636
Research- Sustainable Design: Recycling of Ginseng Plant Waste for Biofuel Using Pond Microbe	\$ 9,000						\$ 9,000
Research- Turning Manure into Gold/ Food Waste on Campus	\$ 1,000				\$ 3,600		\$ 4,600
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- Unmanned Aircraft System Solar Project				\$ 32,980			\$ 32,980
Solar Attic Fans in FH and EHS/ WH	\$ 28,932		\$ 3,500				\$ 32,432
Solar- Big Belly Solar Trash Compactors (9)/software upgrade	\$ 46,683		\$ 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		\$ 14,600		\$ 45,995
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
Stormwater Ctrl Proj- Rain Gardens, Bioremediation Ponds for MS4 Compliance/Maint, Bank stabilization, PKG Lot Run-Off, Native Plants	\$ 55,359						\$ 55,359
Student Suitabilities Ed. Initiative; Learning Garden-Raised Bed	\$ 2,500			\$ 4,000			\$ 6,500
Study of Fire Suppressants for Mitigation Exposure to Wildlife Smoke and the Impact					\$ 4,831		\$ 4,831
Sub-Metering for Chilling Plant and MC	\$ 8,000						\$ 8,000
Tree Planting Projects (8)	\$ 36,500	\$ 11,000	\$ 8,000	\$ 6,000	\$ 7,500	\$ 9,000	\$ 78,000
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 (69 units)	\$ 102,329	\$ 25,200	\$ 12,200	\$ 17,500	\$ 10,600	\$ 15,200	\$ 183,029
Y-pattern Valve Changeout- COGN	\$ 7,600						\$ 7,600
Total:	\$ 4,878,554	\$ 356,286	\$ 327,587	\$ 200,000	\$ 287,410	\$ 406,350	\$ 6,456,187



Summary of Services 2022/2023 Annual Report

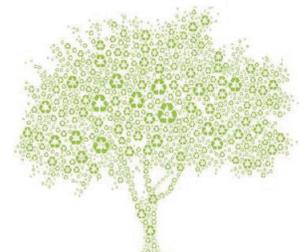
This report is produced by the FSD assistant vice president and staff and published by FSD Administration.
Linda Hardymon, Editor/Publishing Coordinator



FACILITIES SERVICES DEPARTMENT

*Middle Tennessee State University
PO Box 32
Murfreesboro, Tennessee 37132*

Phone 615-898-2414
E-mail: cee@mtsu.edu
Web page: www.mtsu.edu/facserv/



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