

# Summary of Services Annual Report

*July 2013 — June 2014*

*Our Mission: ‘...to maintain facilities and grounds and present them to the university tenants and the public in a safe, clean, and functional condition...’*



***Middle Tennessee State University  
Facilities Services Department***

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*October 2014*

I AM *true* **BLUE**  
MIDDLE TENNESSEE STATE UNIVERSITY



**MIDDLE  
TENNESSEE**  
STATE UNIVERSITY



MTSU Facilities Services is a department reporting to Senior Vice President John W. Cothorn of the Division of Business and Finance.

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## **ASSISTANT VICE PRESIDENT'S SUMMARY**

*Assistant Vice President's Summary* 3

## **CENTRAL ADMINISTRATION**

*Accounting Information Services* 5  
*Center for Energy Efficiency* 6  
*Employee Development Services* 9  
*Recycling Program* 7  
*Work Order Services* 8

## **CONSTRUCTION ADMINISTRATION**

*Construction Administration / Capital Maintenance Services* 14

## **CUSTODIAL SERVICES**

*Custodial Services* 17

## **ENERGY SERVICES**

*Central Plant* 10  
*HVAC* 11  
*Performance Measures* 11

## **ENGINEERING AND BUILDING SERVICES**

*Building Services/Construction Services* 12  
*Construction / Renovation Services* 12  
*Environmental Health and Safety* 12  
*Key Shop* 12  
*Performance Measures* 13

## **FEATURES & COMING ATTRACTIONS**

*Campus Master Plan Excerpts* 18  
*Capital Maintenance Project List* 19  
*Featuring APPA Involvement* 17  
*MTSU Sustainable Campus Fee Project List* 20

## **GROUNDS SERVICES AND GREENHOUSE SERVICES**

*Grounds Services and Greenhouse Services* 15

## **MOTOR POOL SERVICES**

*Motor Pool Services* 16

## **SYSTEMS ENGINEERING**

*Systems Engineering* 16



**F**iscal Year 13/14 has concluded and FY 14/15 is underway. Campus growth and aging facilities continue to be drivers for Maintenance and Operations (M&O) and utilities. New facilities and new road and infrastructure projects add to the utility and M&O requirements for Facilities Services. In addition, the existing facilities and infrastructure continue the normal aging process which also increases the utility and M&O requirements. The M&O budget for Educational and General facilities has remained fairly flat straining the departmental resources and personnel. To that end, Facilities Services provides constant attention to productivity management, innovation, informed decision making, and effective communication in serving the campus community.

This report highlights many accomplishments in FY 13/14 for the department, updates the O&M and capital budget situations, and revises deferred capital renewal projections. The following are samples of the Accomplishments and Challenges.

## Accomplishments

### Performance Metrics

The Summary of Services report from the previous FY identified a combined total of 99 individual goals across the departmental work units for the FY 13/14. Overall, 75 of the goals were completely met or had substantial progress toward their completion (75.8%), 19 of the goals had progress toward completion but remain on-going (19.2%) and 5 of the goals had showed little to no progress (5.0%).

### Capital Projects and Construction Renovation Projects

- 16 capital construction projects were completed totaling \$134.3 million
- 194 renovation projects were completed totaling \$3.9 million
- The Student Services and Admissions Center was completed and is operational
- Construction on the Science Building was substantially complete
- Construction on Murphy Center renovation began

### Customer Service and Communication

- All work units combined to complete approximately 17,200 work orders for the year
- Maintained a brochure for academic and administrative personnel that outlines campus maintenance and operations



and work order processing

- Updated Residential Life Handbook

### Management and Productivity

- Quarterly meetings were conducted for every work unit within the department
- Extensive training was performed throughout the department

### Energy Management

- The TN Sustainable Design 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 were issued to 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
- Several Facilities Services personnel serve in leadership positions and various support positions within APPA

## Challenges

### Budgets

Maintenance and Operations (M&O) budgets are for basic operational needs such as custodial services, grounds services,

(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 constraint.*

(Continued from page 3)

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 been fairly flat over the years. FY 13/14 saw a nominal increase in M&O funding.

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 \$3.0 million – \$4.5 million

**In FY 13/14, MTSU received \$3,530,000 for capital maintenance.** This under funding of capital maintenance accumulates over time to a condition referred to as “deferred capital renewal.” Deferred capital renewal puts an increased burden on the M&O needs because systems that need to be replaced remain in operation and are subject to more failures. As stated above, this condition is reported on in the Campus Master Plan and highlighted in the body of this report.

### Utilities/Energy Costs

On the whole, energy and utility costs increased approximately 9% in FY 13/14. Natural gas continues to remain fairly low compared to pricing peaks a couple of years ago. This continues to be positive considering the reliance on natural gas to fuel the 5 MW turbine/cogeneration system. In addition, the Tennessee Valley Authority continues to adjust (net increases) electrical rates. These increases create additional incentive to be judicious in our utilities operations and more efficient in every aspect of energy usage management.

### New Buildings and Infrastructure

New buildings add to the M&O and utility needs of the campus. The recent growth continually stretches M&O services as well as the infrastructure capacity. Construction on the Science Building project was substantially complete at the very end of the fiscal

year. It is now planned to be operational Fall of 2014.

The Middle Tennessee Medical Center facilities and property (Bell St. properties) remained unoccupied but a renovation project is in design. In addition, several renovation projects were completed as was another phase of the Parking and Transportation project.

### Energy and Sustainability

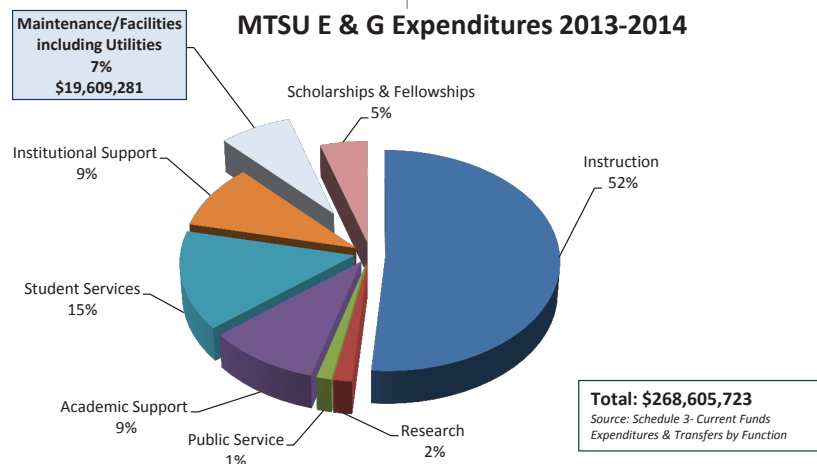
Sustainability is both an opportunity and challenge for the campus. There are many initiatives designed to increase the greening of the campus such as the Sustainable Campus Fee program, the Tennessee Sustainable Design Guidelines for capital projects, the recycling program, etc. These programs and initiatives are effective but are also limited by economic factors such as first costs and paybacks. Energy and environmental regulations are increasing as well.

### Summary

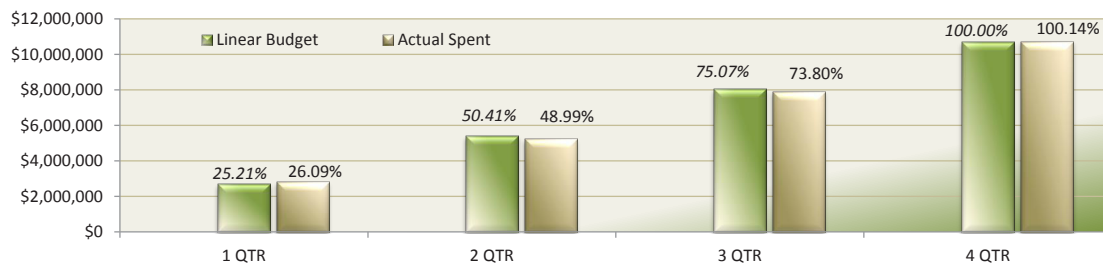
Although highly constrained by resources, we continue striving to maintain the campus in a safe, clean, and functional manner while aligning the department with the University mission and the Academic Master Plan. I want to express appreciation to the Facilities Services staff for their dedication and good work in pursuit of these goals. The accomplishments listed throughout this document are a testament to their commitment to Middle Tennessee State University while facing real challenges to success.

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.

—David Gray

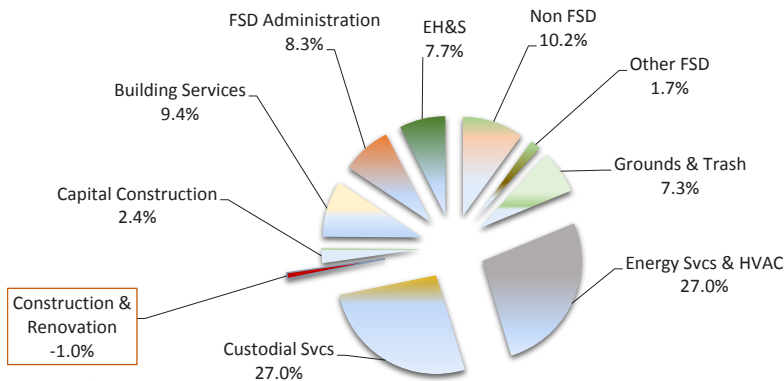


## Education and General (E & G) Maintenance and Operations Budget FY 2013 - 2014 by Quarter



2013-2014	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Annual Totals	% of Total
<b>Total M &amp; O Expenditures</b>	\$ 4,515,266	\$ 3,809,471	\$ 4,106,538	\$ 5,645,078	\$ 18,076,353	
<b>Work for Others</b>	\$ (1,723,203)	\$ (1,358,387)	\$ (1,450,890)	\$ (2,825,614)	\$ (7,358,094)	41%
<b>Net E &amp; G Expenditures</b>	\$ 2,792,063	\$ 2,451,084	\$ 2,655,648	\$ 2,819,464	\$ 10,718,259	59%
<b>E &amp; G Budget</b>	\$ 10,703,320	\$ 10,703,320	\$ 10,703,320	\$ 10,703,320	\$ 10,703,320	
<b>% of Budget</b>	26.09%	22.90%	24.81%	26.34%	100.14%	

### Net E & G Expenditures for M&O Function 2013/2014



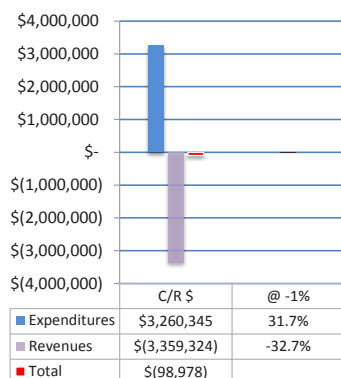
### Accomplishments & Highlights 2013/2014

- Continued work to implement automated work order billing
- Continued regular staff meetings for information sharing
- Underwent a thorough P-card review with positive results, no findings
- All FSD Accounting employees attended a leadership seminar
- One employee attended College Business Management Institute 2nd year conference
- Implemented Argos Reporting tool
- Continued to verify that Mainsaver financial amounts agree to Banner

### Goals 2014/2015

- Implement automated work order billing
- Update Motor Pool billing by using work orders & FuelMaster reports
- Add budget to QuickBooks Pro
- Update Plant Cost Allocation Spreadsheets to reflect Science Building
- Update year-end allocations to reflect how services are provided
- Seek new technological processes and integrate software to improve workflow and reduce redundancies
- Produce training video, procedure manual, PowerPoint presentation to train FSD employees on administrative processes
- Encourage employee development, education and certification, including team building and communication

#### Construction/Renovation: -1.0%



## Accomplishments &amp; Highlights 2013/2014

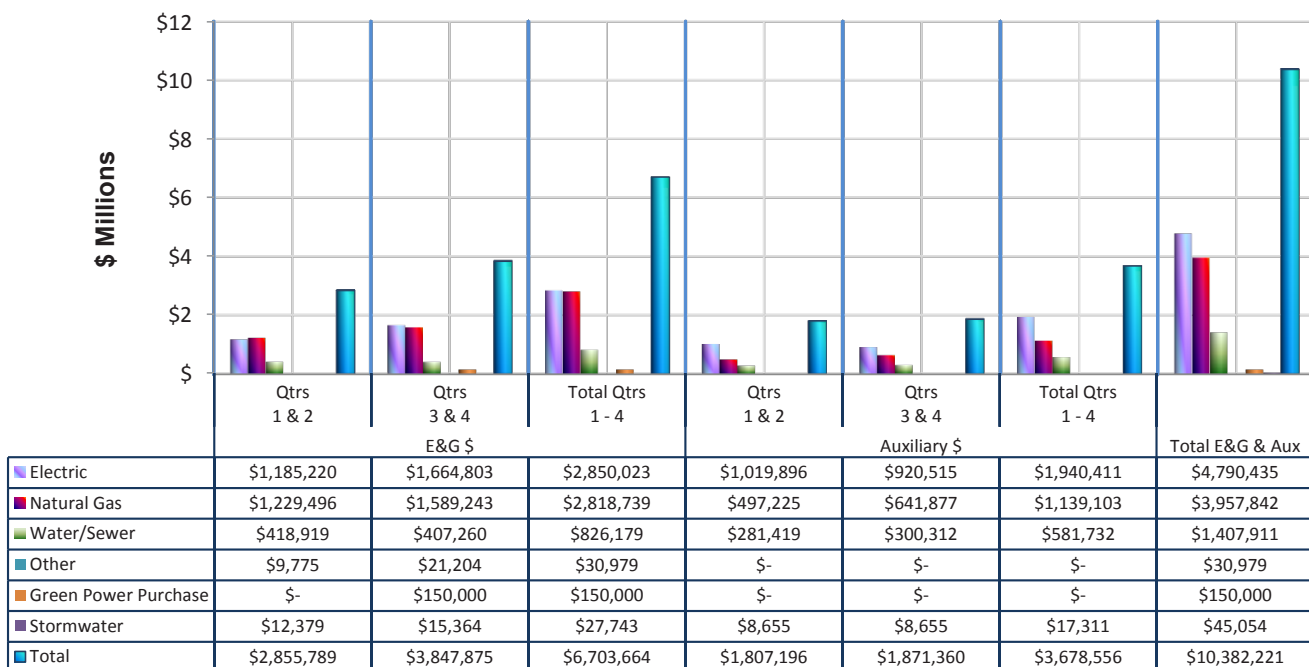
- Negotiated utility related contracts with Tennessee Valley Authority and Murfreesboro Electric (Amended MED utility contract, Generation Partners, Green Power Purchase Agreement)
- Worked with underground electrical project pertaining to IDGS (Interactive Distributed Generation System)
- Supported utilities planning for new Science Building
- Worked with State Architect and TBR to develop High Performance Building Standards (updates to TN Sustainable Design Guidelines)
- Completed THEC and NCAA annual reporting
- Supported property demolish projects
- Continued working with the MTSU Sustainable Campus Fee Committee (Page 20)
- Updated Facility Surveys for TBR and Construction Administration
- Created intern position for Center for Energy Efficiency
- Provided regular column for Facilities Manager Magazine (J Whitefield)
- Continued on the President's Commission on the Status of Women
- Published Summary of Services Annual Report for 12/13
- Attended SRAPPA, TNAPPA 2014

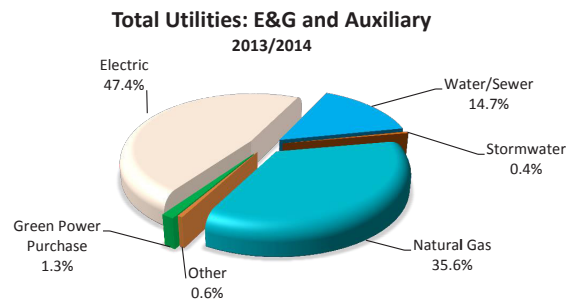
## Goals 2014/2015

- Support development of new campus master plan
- Continue to support start-up for new MED substation for campus
- Support distributed generation changes
- Provide transition support for newly acquired Bell St Center properties
- Establish new gas service and metering for New Science Building
- Support utilities planning for new Science Building
- Continue to monitor alternative electric utility with MED into time of use rate system
- Support APPA Institute for Facilities Management and Leadership Training
- Continue to provide utility and energy management support and research to university departments
- Continue support of MTSU Sustainable Campus Fee Program
- Continue to support Engineering Technology, Honors, and other classroom instruction and projects where possible (on-going)
- Continue training and professional development

## Total Campus Utilities

2013/2014





## Recycling Program - MTSU Recycles

Linda Hardyman

### Accomplishments & Highlights 2013/2014

- Maintained recycling program to meet campus needs employing student workers
- Utilized MTSU Sustainable Campus Fee project funds for improvements to the recycling program (bins and equipment)
- Improved MTSU Recycles appearance in buildings with new and appropriate bin styles to encourage further recycling
- Supported Capital Construction and Construction/Renovation move-out projects in Cope, McFarland, BAS, Murphy Center, and additional campus locations as requested
- Improved ergonomic and safe handling of materials with addition of lift-gates on recycling trucks
- Initiated tailgate recycling program for game days, including recycling for baseball and football stadiums
- Supported Students for Environmental Action pilot program for dorm room recycling in Monohan and Lyon Halls
- Outfitted new Student Services Building and new office spaces across campus for recycling
- Provided paper props for commercial video shoot for a Nashville business
- Provided safety and diversity training for recycling staff



### Goals 2014/2015

- Continue to provide campus recycling education, upgrade appearance of recycling containers
- Continue to work with Murphy Center Complex staff to provide recycling at athletic events
- Continue to support Capital Construction and Construction/Renovation project work and planning for new construction/renovation areas
- Continue working with MTSU Sustainable Campus Fee Program for recycling project funding
- Explore new initiatives as the opportunity arises to grow the program and increase commodities collection while helping lower campus trash going to the landfill
- Continue partnership opportunities with Recycle Rutherford and TN Department of Environment and Conservation
- Continue to provide classroom support for environmental seminars and storm water initiatives
- Continue participation in training and development programs

Recycling Program Collections	
Commodity	2013/2014 Pounds
Aluminum	6,083
Mixed/White Paper	507,476
Newspaper/Magazines	303,554
Maintenance Metals	83,717
Cardboard	513,768
E-waste	78,000
Plastics	132,704
	Units
Batteries	1,070
Ink Cartridges	1,578
Pallets	1,083



Tailgate recycling center

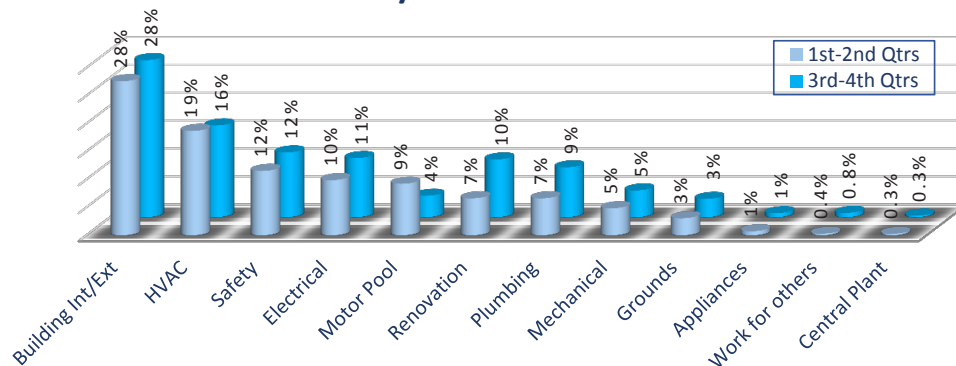


Video shoot paper props!



Liftgate

### Work Orders Originated 2013/2014



### Accomplishments & Highlights 2013/2014

- Hired consultant to help export reports to Argos; learn to edit Argos reports
- Coordinated with accounting group to adapt internal procedures and practices to be compatible with Mainsaver to Banner interface requirements.
- Assisted FSD personnel in moving email messages to first tier, learning new processes for remote desktop, complex passwords and sending FAX messages.
- Coordinated with Building Services Engineer to design and implement asset and work order tracking systems for new science building.
- Hired and train part time work order clerk.
- Coordinated with ITD to replace printers in compliance with the new Managed Print Solution contract.
- Coordinated upgrade of Mainsaver software to latest version.

### Goals 2014/2015

- Work with Energy Services to design and implement filter tracking database
- Continue to learn to design and edit work order reports using Argos Enterprise Reporting Solutions
- Investigate possibility of distributing internal reports via Access or other MTSU standard software
- Continue to offer computer support with installing software and troubleshooting minor software and hardware issues.

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



### 2013/2014 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	41	1%	26	1%	36	1%	28	1%	131	1%
Building Interior/Exterior	1,196	26%	1,166	29%	1,249	31%	1,183	26%	4,794	28%
Central Plant	14	0.3%	14	0%	12	0%	14	0%	54	0%
Electrical	460	10%	389	10%	487	12%	408	9%	1,744	10%
Grounds	154	3%	111	3%	114	3%	171	4%	550	3%
HVAC	941	21%	660	17%	617	15%	804	18%	3,022	18%
Mechanical	203	4%	215	5%	221	5%	195	4%	834	5%
Motor Pool	450	10%	343	9%	350	9%	566	12%	1,709	10%
Plumbing	296	6%	274	7%	12	0%	321	7%	903	5%
Renovation	322	7%	250	6%	448	11%	326	7%	1,346	8%
Work for Others	17	0.4%	13	0%	42	1%	27	1%	99	1%
Safety	463	10%	526	13%	494	12%	509	11%	1,992	12%
Total	4,557	100.00%	3,987	100.00%	4,082	100.00%	4,552	100.00%	17,178	100.00%

# Central Administration: Employee Development Services

Joe Whitefield Connie Hagberg



## Accomplishments & Highlights 2013/2014

- Facilitated employee training sessions for FSD work units
- Coordinated forklift hands-on training session by certified trainer; offered enrollment to employees in other University departments



## Goals 2014/2015

- Review current training program; add new training sessions (as required or requested)
- Continue to review specific cleaning tasks and grounds work, with overall focus on improved campus facility and grounds cleanliness and appearance
- Continue maintenance and productivity studies for FSD with emphasis on custodial services
- Attend professional development and leadership training



2013/2014 FSD Employee Training Records		Leadership/Professional Development			Technical Training		
By Training Type	Employees (Full-Time)	Employees Trained	Total Hours		Employees Trained	Total Hours	
			In-House	Conference		In-House	Conference
Central Administration							
-Assistant Vice President	2	2	11	77	2	7	39
-Accounting Services	5	5	43	70	5	7	0
-Center for Energy Efficiency	3	3	8	40	3	4	27
-Employee Development	1	1	2	18	1	2	2
-Work Orders	3	3	13	8	3	9	0
Building & Engineering Services	39	32	49	177	38	194	120
Construction Administration	4	4	9	28	4	9	2
Custodial Services	23	23	33	23	22	77	10
Energy Services	17	17	29	21	17	76	6
Grounds Services/Motor Pool	20	18	28	3	20	84	12
<b>Total</b>	<b>117</b>	<b>108</b>	<b>224</b>	<b>464</b>	<b>115</b>	<b>465</b>	<b>218</b>

Number of Employees Per Total Hours Trained	Employees (Full-Time)	0 Hrs	1-10 Hrs	11-20 Hrs	>20 Hrs
Central Administration					
-Assistant Vice President	2				2
-Accounting Services	5		2	1	2
-Center for Energy Efficiency	3		1		2
-Employee Development	1				1
-Work Orders	3		2		1
Building & Engineering Services	39		28	8	3
Construction Administration	4		2	1	1
Custodial Services	23		22		1
Energy Services	17		16		1
Grounds Services/Motor Pool	20		19	1	
<b>Total</b>	<b>117</b>	<b>0</b>	<b>92</b>	<b>11</b>	<b>14</b>

## Accomplishments & Highlights 2013/2014

- Managed 308 after hours callbacks
- Prepared EPA report for Green House Gas emissions
- Prepared air pollution control permit report
- Continued completion of safety training
- Provided training to maintain compliance regarding confined space and code issues
- Continued to evaluate operating schedules for the natural gas turbine generator with respect to natural gas and electric pricing
- Supported design and installation of new lube oil coolers for turbine
- Supported construction of new science building
- Supported Construction/Renovation projects

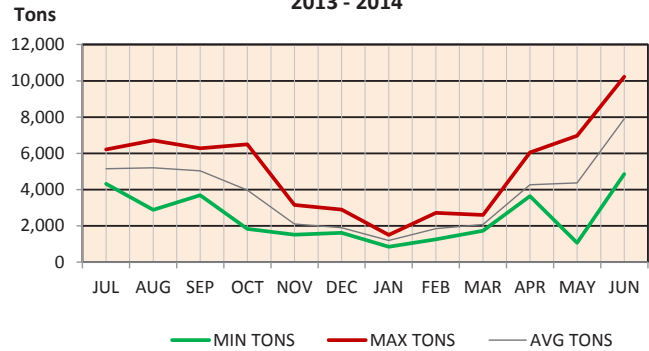
## Goals 2014/2015

- Replace/repair cooling towers at Main Central Plant
- Replace economizer on energy recovery boiler
- Continue to support capital and construction/renovation projects on campus
- Continue to investigate training opportunities
- Continue exploring recovery of loop system condensate
- Retube energy recovery boiler
- Continue to support physical plant upgrades
- Upgrade of Solar turbine controls

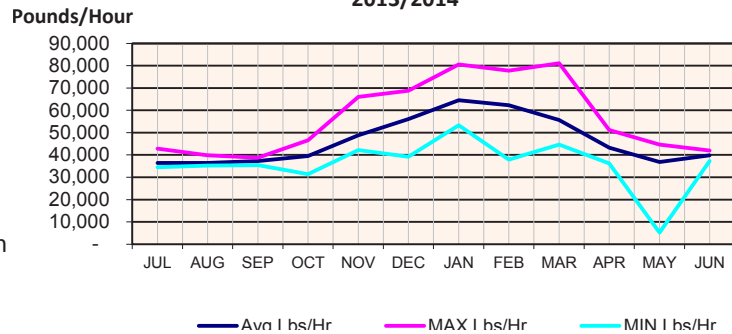


Satellite Plant

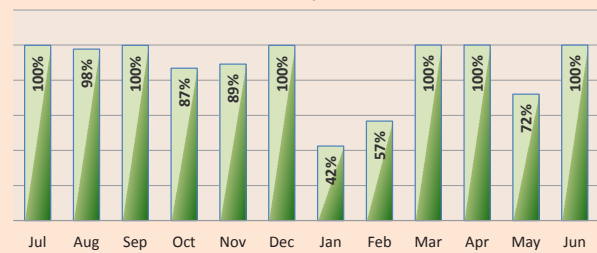
### Chilled Water Tonnage 2013 - 2014



### Steam Production 2013/2014



### Turbine: Percent Runtime By Month 2013/14



### 2013/2014 Central Plant Equipment Peak Operational Levels

Natural Gas Fired Turbine/ Generator					Steam Boilers					Chillers				
5MW (nominal)					85,000 Pounds/Hour (peak)					10,500 Tons (peak)				
	Mid-Year	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	Annual		Mid-Year	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	Annual		Mid-Year	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	Annual
Peak MW	5.20	5.51	5.12	5.51		Ave LBS/ Hr	48,152	60,817	39,970		60,817 <th>Max Peak Tons</th> <td>6,712</td> <td>2,723</td> <td>10,226</td> <td>10,226</td>	Max Peak Tons	6,712	2,723
Ave MW	4.66	4.96	4.64	4.71	Peak LBS/ Hr	68,792	81,042	51,167	81,042 <th>Min Tons</th> <td>2,885</td> <td>850</td> <td>1,073</td> <td>850</td>	Min Tons	2,885	850	1,073	850
Purchased power: 45,638.3 MWH														

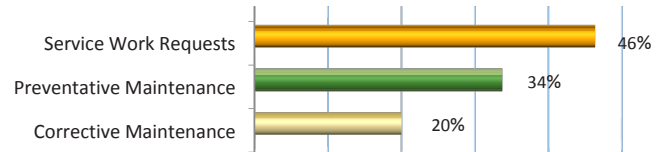
Purchased power: 45,638.3 MWH

## Accomplishments & Highlights 2013/2014

- Managed 95 after hours callbacks
- Continued completion of safety training
- Provided training to maintain compliance regarding confined space and code issues
- Supported construction of new science building
- Supported Construction/Renovation projects
- Reviewed implementation procedures on services to auxiliaries and zone maintenance
- Installation of boilers for Ellington Human Science eliminating building from campus Central Plant steam
- Worked with TVA's Energy Right Program on energy efficient projects on campus



Energy Services  
Total Work Order Hours  
2013/2014



## Goals 2014/2015

- Continue to support capital and construction/renovation projects on campus
- Continue to improve HVAC building air filtering systems
- Continue to investigate training opportunities
- Develop new project for MTSU Sustainable Campus fee
- Investigate new ways of saving energy on campus
- Continue to work with TVA on energy right program
- Improve department processes
- Reduce work order closed past due percentage

### PERFORMANCE MEASURES: Energy Services

2013/2014		# Work Orders Completed		Man Hours		Avg Man Hours/WO		% Closed Past Due	
CORRECTIVE MAINTENANCE (CM)		Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual
	Appliances	18	36	68	144	3.8	4.0	17%	14%
	Central Plant	6	9	29	46	4.8	5.1	0%	0%
	HVAC	524	1,122	2,153	4,178	4.1	3.7	12%	13%
	Mechanical	68	152	515	1,143	7.6	7.5	18%	20%
	<b>Total</b>	616	1,319	2,765	5,510	4.5	4.2	13%	14%

PREVENTIVE MAINTENANCE (PM)		Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual
	Appliances	5	11	10	16	2.0	1.5	0%	0%
	Central Plant	7	15	1,516	3,350	216.5	223.3	14%	47%
	HVAC	414	807	1,794	4,542	4.3	5.6	10%	13%
	Mechanical	297	574	1,031	1,386	3.5	2.4	1%	3%
	<b>Total</b>	723	1,407	4,350	9,294	6.0	6.6	6%	9%

SERVICE WORK ORDERS		Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual
	Appliances	5	10	16	39	3.2	3.9	20%	40%
	Central Plant	11	24	3,494	7,781	317.6	324.2	36%	42%
	HVAC	261	643	1,614	4,825	6.2	7.5	15%	17%
	Mechanical	12	24	85	137	7.1	5.7	17%	29%
	<b>Total</b>	289	701	5,208	12,781	18.0	18.2	16%	18%

## Accomplishments & Highlights 2013/2014

- Implemented a procedure to schedule classrooms for electronic access by creating an import script connecting teachers to classrooms. This process is ongoing and revisions are now required due to software limitations and the size of the new science building.
- Assess the viability of aftermarket electric latch retraction kits to retrofit existing mechanical panic devices in order to reduce hardware costs, associated with new exterior card reader doors, by 50%. In a step to move in this direction, 16 wireless on-line card access locks have been installed in five houses at Greek Row. Currently, we are evaluating their performance.
- Support Campus Planning and Construction Administration in construction of the new Science Building. The new building opened ahead of schedule which resulted in EH&S and the Key Shop working at an accelerated pace to meet the opening date. This was accomplished with support from all areas and each is continuing to meet the demands of this new building.
- Completed domestic water systems on GIS
- Haynes Turner Renovation is ongoing. The target completion date is December 23, 2014; however, in-house crews have been pulled to work on higher priority projects.
- Radiological Safety Officer and Building Services Supervisor positions were filled.

PERFORMANCE MEASURES: Engineering & Building Services									
2013/2014		#Work Orders Completed		Man Hours		Avg Man Hours/WO		% Closed Past Due	
CORRECTIVE MAINTENANCE (CM)		Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual
	Appliances	14	37	40	106	2.9	2.9	0.0%	2.7%
	Building Interior/Exterior	536	1,055	1,122	2,346	2.1	2.2	3.5%	6.4%
	Electrical	517	1,065	1,852	4,126	3.6	3.9	5.4%	8.2%
	Key Shop	669	1,292	1,479	3,086	2.2	2.4	3.7%	6.5%
	Plumbing	476	1,039	997	2,392	2.1	2.3	2.1%	3.5%
	Safety	45	139	9	43	0.2	0.3	13.3%	28.1%
	<b>Total</b>	2,257	4,627	5,499	12,098	2.4	2.6	3.9%	6.8%
PREVENTIVE MAINTENANCE (PM)		Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual
	Appliances	0	0	0	0	0.0	0.0	0.0%	0.0%
	Building Interior/Exterior	82	206	266	326	3.2	1.6	7.3%	46.1%
	Electrical	129	262	92	188	0.7	0.7	13.2%	6.9%
	Plumbing	10	122	21	225	2.1	1.8	10.0%	10.7%
	Safety	759	1,699	607	1,290	0.8	0.8	0.0%	0.2%
	<b>Total</b>	980	2,289	986	2,028	1.0	0.9	2.4%	5.6%
SERVICE WORK ORDERS		Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual
	Appliances	9	14	42	45	4.6	3.2	0.0%	7.1%
	Building Interior/Exterior	744	1,897	1,320	3,006	1.8	1.6	16.0%	17.6%
	Electrical	139	328	667	979	4.8	3.0	5.0%	8.2%
	Key Shop	142	335	621	1,800	4.4	5.4	10.6%	17.3%
	Plumbing	64	147	68	189	1.1	1.3	3.1%	6.1%
	Renovation	452	921	1,170	5,002	2.6	5.4	3.3%	5.4%
	Safety	34	103	28	194	0.8	1.9	5.9%	20.4%
	<b>Total</b>	1,584	3,745	3,915	11,215	2.5	3.0	10.1%	13.4%

## Goals 2014/2015

- Budget Control: Emphasize only Essential Purchases to Support Maintenance and Projects
- Support Capital Projects: Bell St. Center and Davis Science/ Wiser Patton Building Renovations
- Support and Maintain Campus/Buildings with Special Emphasis on New Science Building
- Training and Professional Development
- Support Administration Changes
- Support Construction/Renovation Projects and Plan for Increased In-House Labor Dedicated Projects
- Evaluate Organizational Changes to Improve Efficiency and Productivity
- Improve work orders percentage closed past due

## Accomplishments & Highlights 2013/2014

### Building Services/Construction Services – Gerald Grimes

- Filled vacated Supervisory position for Building Services / Metal Services
- Construction Services gained (2) Maintenance Mechanics and filled a Lead Carpenter vacancy in promoting a more effective work unit
- Expanded "Safety 411" to Construction Services work unit. This is a scheduled weekly safety awareness meeting
- Staff members participated in the annual TNAPPA conference at Tennessee Technological University
- Support and contribute to Capital Construction and Construction/Renovations projects – Document reviews and project
- Assisted Environmental Engineer (EH&S) with the development of Grease Trap Contract specifications and protocols
- Various staff actively participated in educational training; receiving graduate certificates in Welding, Cross-Connection repair, and Homeland Security courses

### Construction and Renovation – Terri Carlton

- Construction/Renovation completed approximately 194 projects and managed more than \$3,907,500 worth of products and services during the course of these projects
- Major renovations include:
  - Renovated Davis Science Building – Classroom 100
  - Fully renovated Greek Row House #1
  - Replaced acoustical walls and flooring in various Mass Communication's studios
  - Prepared Ellington Human Sciences for demolition of the Annex
  - Renovated KOM after relocation of Testing Center to KUC
  - Managed new construction of Softball batting facility
  - Renovated Murphy Center Athletic Offices
- Implemented a multi-year direct order contract with a new general contracting firm

### Environmental Health & Safety – Doug Brinsko

- Filled open Radiological Safety Officer position (RSO) January 2014
- Obtained Broad Scope Radioactive Material License for MTSU from State June 2014
- MTSU (September 24, 2014) is now a Large Quantity, Non-exempt Hazardous Chemical Waste Generator
- Implemented seven on line safety training modules which 2,754 MTSU faculty and staff were trained
- MTSU's Stormwater Program conducted a number of events which included outreach programs, educational events, tree planting and environment cleanups. The co-permit agreement with the city continues to be an effective approach to compliance for both the city and the university.

### Key Shop – Don Chumney

- Completed 1,653 work orders
- Cut a total of 3,073 keys for Residential Life, Construction Administration and Construction/Renovation projects
- Re-keyed Campus School
- Keyed Student Services Building
- Implemented test installation of 16 wireless on-line card access locks on five houses at Greek Row
- Keyed New Science Building

### GIS and Locating – Dwayne Alexander

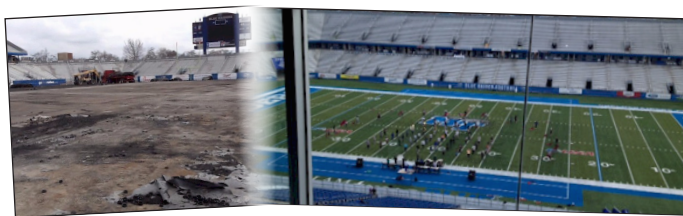
- Rewrote terms of contract for emergency generator services to benefit MTSU
- Completed domestic water layer for GIS mapping service
- Trained employee to use locating equipment for locating infrastructure in my absence from work
- Assist in relocating of infrastructure for road projects and new Science Building
- Coordinated emergency backup generator electrical power for several major power outages across campus

### 2013/2014 Construction/Renovation Project Summary

	1st Qtr		2nd Qtr		3rd Qtr		4th 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	247	\$ 2,304,541	198	\$ 2,019,870	203	\$ 1,834,655	219	\$ 2,961,681	247	\$ 2,304,541
Added Projects	59	\$ 453,164	46	\$ 789,000	72	\$ 2,224,908	50	\$ 1,294,800	227	\$ 4,761,872
Completed Projects	57	\$ 1,269,523	41	\$ 974,215	56	\$ 1,097,882	40	\$ 565,967	194	\$ 3,907,587
Ending Active Projects	198	\$ 2,019,870	203	\$ 1,834,655	219	\$ 2,961,681	229	\$ 3,690,514	229	\$ 3,690,514

## Accomplishments & Highlights 2013/2014

- Continued participation in APPA educational opportunities
- Completed Capital Maintenance Budget for 2015/2016
- Completed construction of new Science Building
- Continued cooperative efforts with Murfreesboro City Codes and other municipal departments
- Continued participation in Sustainable Design and Stormwater efforts on campus generally and Capital Construction projects in particular



Turf replacement

2013/2014 Capital Projects Review			
	New Projects		Completed Projects
July - September	✓ Several Building Envelop Repair - Stark Ag brick repair		✓ MT Conference Center ✓ Track resurfacing ✓ Underground Electrical Phase 2 ✓ Parking garages ✓ Davis Sci fume hood replacement - Phase 2 ✓ Physical Plant upgrade-steamline Co-Gen ✓ Several Building Envelope Repair-Stark Ag brick repair
October - December	✓ Cope building renovations ✓ LRC 101 renovation ✓ Murphy Center HVAC updates/improvements ✓ Murphy Center roof replacement		✓ Lighting improvements - Phase 2 ✓ KUC renovation ✓ Walker Library roof replacement
January - March	✓ McFarland Building renovations ✓ Science steamline replacement ✓ Turf replacement - Football Stadium		✓ Domestic water & sewer system updates ✓ Student Services Building
April - June	✓ Physical plant upgrades-cooling tower		✓ Science facilities improvements ✓ Steamline replacement - New Science Building ✓ Football Field - turf replacement ✓ Murphy Center roof replacement

## Goals 2014/2015

- Complete final phase of Underground electrical project
- Update Campus Standards
- Continue to participate in on and off campus educational opportunities
- Enhance Stormwater protective efforts on Capital Construction projects



MTSU Blvd Parking Garage



MT Conference Center

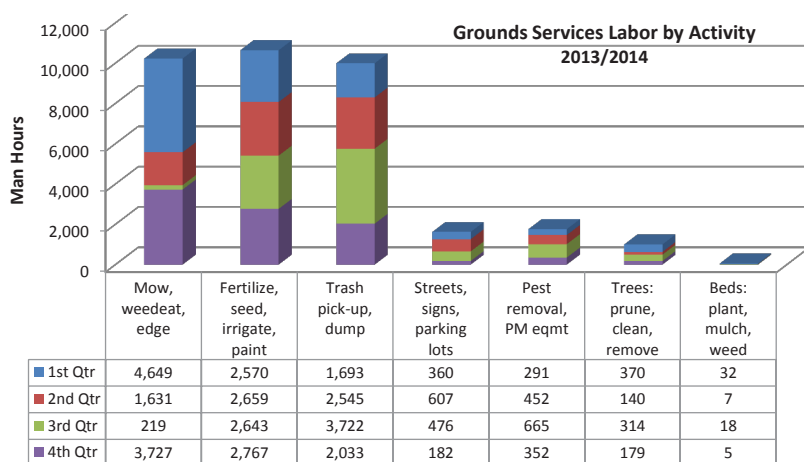


Student Services and Admission Center

2013/2014 Construction Administration Capital Project Summary										
	1st Qtr		2nd Qtr		3rd Qtr		4th Qtr		Annual Totals	
	# Projects	Value of Projects	# Projects	Value of Projects	# Projects	Value of Projects	# Projects	Value of Projects	# Projects	Value of Projects
Beginning Active Projects	13	\$ 142,487,038	7	\$ 119,650,650	8	\$ 122,854,000	9	\$ 109,977,740	13	\$ 142,487,038
Added Projects	1	\$ 44,000	4	\$ 6,793,000	3	\$ 2,829,740	1	\$ 695,720	9	\$ 10,362,460
Completed Projects	7	\$ 22,880,388	3	\$ 3,589,650	2	\$ 15,706,000	4	\$ 92,140,000	16	\$ 134,316,038
Ending Active Projects	7	\$ 119,650,650	8	\$ 122,854,000	9	\$ 109,977,740	6	\$ 18,533,460	6	\$ 18,533,460

## Accomplishments & Highlights 2013/2014

- Installed new irrigation system on baseball field and practice football fields to improve overall quality and playability
- Began sidewalk grinding project to remove small imperfections and uneven spots on sidewalks
- Implemented a strategy to keep parking garages clean
- Continued and monitored new street sweeping plan to keep the roads and parking lots cleaner
- Completed top grade project on game rugby field to improve unevenness and drainage
- Developed and implemented new edging strategy to keep curbs and sidewalks looking sharp
- Continued trash receptacle improvements by adding new barrels with lids and replacing older/worn barrels to help with litter control and improve overall aesthetics of campus
- Attended APPA, as well as, maintained quarterly communications, required training, and cross-training activities



Play ball!



Sidewalk grinding



New road

## Goals 2014/2015

- Develop and monitor better strategy for leaf cleanup/removal in the Fall
- Develop a plan to top grade recreation fields to improve unevenness and drainage
- Continue to monitor and improve sidewalk grinding project as funding is available
- Continue to provide design review on new construction projects
- Develop a "swat team" approach to help improve landscaping aesthetics of high traffic/visibility areas of campus
- Implement new winter trimming/pruning schedule for trees, shrubs, and bushes
- Continue to monitor and improve strategy for improving the curb appeal of the academic core of campus
- Monitor and improve work orders percentage closed past due

PERFORMANCE MEASURES: Grounds Services								
2013-2014	#Work Orders Completed		Man Hours		Avg Man Hours/ Work Order		% Closed Past Due	
	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual
<b>Maintenance</b>	43	84	231	437	5.4	5.2	9.3%	17.9%
Preventive (PM)	11	14	36	40	3.3	2.8	18.2%	21.4%
Corrective (CM)	32	70	195	397	6.1	5.7	6.3%	17.1%
<b>Service</b>	216	451	3,770	77,760	17.5	172.4	20.8%	24.2%
Routine	216	439	3,770	46,069	17.5	104.9	20.8%	24.8%
Annual	0	12	0	31,691	0.0	2,640.9	0.0%	0.0%
<b>Total</b>	259	535	4,001	78,196	15.4	146.2	18.9%	23.2%

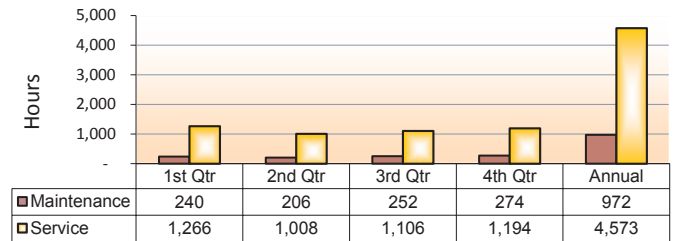
## Accomplishments & Highlights 2013/2014

- Provided on site emission testing
- Attended training
- Provided service and support to other campus departments
- Worked with maintenance department to replace aged vehicles

## Goals 2014/2015

- Upgrade shop equipment
- Annual fuel storage tank maintenance
- On site emission testing
- Continue with training and educational opportunities
- Follow and adhere to new EPA regulations

Motor Pool Man Hours  
2013-2014



Emission testing



### PERFORMANCE MEASURES: Motor Pool

2013-2014	#Work Orders Completed		Man Hours		Avg Man Hours/ Work Order		% Closed Past Due	
	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual
Maintenance	384	941	446	972	1.2	1.0	4.2%	4.8%
Preventive (PM)	379	932	439	953	1.2	1.0	4.0%	4.6%
Corrective (CM)	5	9	8	19	1.5	2.1	20.0%	22.2%
Service	393	775	2,274	4,573	5.8	5.9	10.7%	13.3%
Total	777	1716	2,720	5,545	3.5	3.2	7.5%	8.6%

## Systems Engineering

Joe Whitefield Jeff McConnell

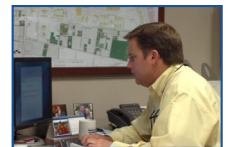
## Accomplishments & Highlights 2013/2014

- Implementation of systems engineering position
- Supported commissioning phase of new 250,000sf Science Building
- Development of budget for staffing and maintenance of Science building
- Supported design phase of Davis Science/Wiser-Patten renovation

## Goals 2014/2015

- Define the asset life-cycle plan and begin implementation of Science building care outside of warranty periods
- Develop and put in place critical asset outsourced contracts for Science building
- Continue to assist the Davis Science/Wiser-Patten renovation

'Coin Toss' articles have been replaced with 'Enabling Leadership' to more accurately describe the important leadership issues presented by author Joe Whitefield - **Facilities Manager Magazine**



<http://www.appa.org/FacilitiesManager/index.cfm>

## Accomplishments & Highlights 2013/2014

- Service for the new Student Services Building, MT Conference Center and Blue Print
- Worked closely with Student Unions administration to address specific Student Union Building needs and custodial service for special events
- Execution of new 5-year contract with Custodial Contractor based on the contract between Custodial Contractor and Educational and Institutional Cooperative Service, Inc.
- Good working relationship with Custodial Services Contract administration; worked closely with contractor to ensure contract terms firmly upheld
- Coordinated special event/conference cleaning requirements with contractor and in-house Custodial Services
- Completed safety and administrative training sessions

E&G Space 2013/2014	Gross Square Feet	Cleanable Square Feet	% Cleanable Square Feet
<b>Facilities Services Department</b>			
<b>In-house</b>	579,878	301,267	14%
<b>Contract Labor</b>	1,864,173	1,291,943	62%
<b>Murphy Center Complex</b>			
<b>In-house</b>	0	0	0%
<b>Contract Labor</b>	606,239	502,312	24%
<b>Total</b>	<b>3,050,290</b>	<b>2,095,522</b>	<b>100%</b>

## Goals 2014/2015

- 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
- Service for the new Science Building for Fall semester opening
- Service for the renovated McFarland Building, with scheduled opening in January



## FSD is APPA Active at WORK!



APPA offers premier training for educating and equipping facilities professionals in leadership, management, and latest technologies. As an active member of APPA, at state, regional, and international levels, the MTSU Facilities Services staff supports APPA in a variety of ways from hosting workshops to holding offices.

### FSD Staff Involvement 2013/2014

	<b>Current Officers</b>
	TNAPPA- 1st Vice-President- David Gray
	TNAPPA- Secretary/Treasurer - Gerald Grimes
	TNAPPA- Web Master/Editor - Kelly Ostergrant
	<b>Facility Manager Magazine</b>
	Joe Whitefield - Columnist

	<b>Leadership Academy - Ft. Lauderdale, FL</b>
	Jeff McConnell

	<b>SRAPPA - Buford, GA</b>
	Attendees - Gerald Caudill, Reggie Floyd, Gerald Grimes, Kelly Ostergrant, Terri Carlton, Julie Im, Linda Hardyman, Sheila Knight, Connie Hagberg

	<b>Attended APPA - Minneapolis, MN</b>
	David Gray, Joe Whitefield, Gerald Grimes, Jeff McConnell, Kelly Ostergrant

	<b>TNAPPA - Cookeville, TN</b>
	FSD Units attending: Assistant Vice-President staff, Center For Energy Efficiency, Employee Development, Energy Services, Building Services, Construction Administration, Construction Renovation, Environmental Health & Safety, Grounds Services, Custodial Services (25 staff members)

	<b>Supervisor's Toolkit - Austin Peay State University</b>
	Brenda Wunder, Phillip Gilmore, Percy Pulido

<b>Upcoming in 2014/2015</b>	
APPA International Conference (San Diego, CA); SRAPPA (Huntington WV), officers: Gerald Grimes- Emerging Professionals Committee Rep, Kelly Ostergrant- VP for Communications; TNAPPA (Murfreesboro, TN)	

The Association of Physical Plant Administrators promotes leadership in educational facilities for professionals seeking to build careers, transform institutions, and elevate the value and recognition of facilities education. [www.appa.org](http://www.appa.org)

**MTSU to host TNAPPA 2015!**

# Excerpts from Campus Master Plan December 2007--2013

The following information categorizes the Education and General (E&G) facilities according to condition and quantifies the overall level of deferred maintenance.

## Existing Building Analysis: Education and General Facilities

Building Name	Year Constructed	Bldg ID	Current Condition (1)	Potential Value (2)	Overall Building Rating (3)	Net SF	Gross SF
Alumni Relations House (2259 Middle Tennessee Boulevard)	1908	P0174	99.8	High	A	5,598	10,105
President's Home **	1910	P0001	87.0	High	B	7,015	7,794
Tom H. Jackson Building **	1911	P0003	86.0	High	B	4,921	8,792
Kirksey Old Main **	1911	P0002	69.8	High	C	45,772	83,705
Jones Hall **	1921	P0005	82.3	High	B	21,110	39,855
Pittard Campus School **	1927	P0007	65.5	High	C	29,805	52,424
Ellington Human Science Annex	1928	P0018	77.6	Low	D	7,254	10,276
Wiser-Patten Science Hall	1932	P0008	83.0	Medium	B	27,991	41,116
Voorhies Industrial Studies	1942	P0009	89.4	Medium	B	28,516	39,289
ROTC Annex	1942	P0010	60.2	Low	D	8,574	10,143
Alumni Office (2263 Middle Tennessee Boulevard)	1948	P0172	100	High	A	1,869	2,796
1114 East Lytle Street (Lytle House)	1948	P0171	95.1	High	A	1,379	1,874
Sam H. Ingram Building (2269 Middle Tennessee Boulevard)	1951	P0169	98.6	High	A	18,907	27,498
Parking Services Building (1403 East Main Street)	1951	P0158	98.2	High	A	7,349	12,099
James Union Building	1952	P0015	84.5	Medium	B	37,101	59,351
Forrest Hall	1954	P0017	90.3	Low	D	8,562	14,177
Photography Building	1957	P0046	76.0	Low	D	8,196	11,873
Todd Hall	1958	P0019	96.0	High	A	65,598	114,388
Saunders Fine Art	1959	P0022	89.6	Medium	B	20,088	32,870
E.W. Midgett Building	1959	P0076	65.0	Low	D	10,804	18,326
Fairview Building	1962	P0149	90.5	Medium	A	22,584	38,250
Ellington Human Science	1962	P0025	83.6	Medium	B	10,828	15,509
Boutwell Dramatic Arts	1964	P0031	81.4	Medium	B	37,655	59,876
Cope Administration Building	1965	P0034	89.4	High	B	30,815	51,184
Keathley University Center	1967	P0042	84.4	Medium	B	78,973	122,671
Davis Science Building	1967	P0041	82.7	Medium	B	44,411	75,258

### Notes:

- 1.) Current condition - Facility Survey Score as of 10/07
- 2.) Potential Value determined by factors including: various land use, program suitability, code issues, original campus structure
- 3.) Overall building rating combines the current condition and potential values

Building Name	Year Constructed	Bldg ID	Current Condition (1)	Potential Value (2)	Overall Building Rating (3)	Net SF	Gross SF
Stark Agribusiness and Agriscience Center	1968	P0045	89.3	High	B	15,059	24,813
Peck Hall	1968	P0044	84.0	Medium	B	52,724	110,440
McFarland Health Service	1969	P0054	81.4	Low	D	6,873	10,285
Tennessee Livestock Center	1972	P0070	91.8	Low	D	135,079	158,191
Ezell Hall	1973	P0072	78.5	Low	D	32,497	52,452
Greenhouse	1975	P0073	100	Low	D	4,709	4,774
Ned McWhorter Learning Resources Center	1975	P0074	85.1	High	B	41,763	65,865
Vocational Agriculture	1979	P0080	90.9	Low	D	5,217	6,000
Wright Music Building	1980	P0081	92.8	Medium	A	20,802	31,141
Telescope Building	1986	P0106	n/a	Low	D	328	412
ProjectHELP	1986	P0088	100	High	A	3,258	4,568
John Bragg Mass Communication Building	1990	P0083	95.5	High	A	53,735	91,114
Cason-Kennedy Nursing Building	1994	P0084	97.3	High	A	18,755	31,494
Telecomm Building	1997	P0089	100	High	A	5,957	10,267
Business & Aerospace Building	1997	P0091	99.3	High	A	100,973	184,931
Horticulture Facility	1997	P0093	94.0	Low	D	6,458	9,002
James E. Walker Library	1998	P0094	99.3	High	A	172,928	254,596
Tennessee Center for the Study and Treatment of Dyslexia	2000	P0155	94.0	High	A	4,148	7,169
Wood-Stegall Center	2001	P0156	100	High	A	4,636	10,142
Paul W. Martin, Sr. Honors Building	2003	P0166	100	High	A	11,605	20,720
Printing Services Building	2005	P0175	100	Low	D	3,927	4,320
Nursing Building Addition	2006	P084A	100	High	A	13,924	24,044

\*\* Original campus structure

### Overall Building Rating - Current Condition

Potential Value		90-100	80-90	<80
	High	A	B	C
	Medium	A	B	C
	Low	D	D	D

## Deferred Maintenance

Educational and General (includes maintenance, utilities, and athletics)		
Overall Buildings Ratings	Square Footage	20-year Deferred Maintenance (1)
A	1,212,841	\$15,758,902
B	1,031,907	\$57,839,731
C	297,334	\$32,098,524
D	95,614	\$6,215,084
Other	67,808	\$2,038,594
Infrastructure		\$28,487,709
20-YR Capital Maintenance Funding		\$(24,380,000)
<b>Totals</b>	<b>2,705,504</b>	<b>\$118,058,544</b>

(1) 20-YR Deferred Maintenance is the sum of the Annual Capital Maintenance calculations for the most recent 20 year period for each facility. The Annual Capital Maintenance formula is:

$$ACM = 2/3 (\text{Building Current Replacement Value}) * \text{Building Age}/1275$$

Like many universities and colleges, MTSU has experienced significant growth and associated financial needs over many years. These conditions have led to a postponement of major repairs and replacements of facilities and infrastructure. The delay, combined with the age of the facilities, is leading to a deterioration of the facilities and an increased backlog of maintenance and capital renewal projects. This backlog is commonly referred to as "deferred maintenance".

The E&G Deferred Maintenance table summarizes the estimated cost of 20 years of accumulated deferred maintenance for the Education and General facilities and the infrastructure on campus according to Overall Building Rating category, the 20-year total of capital maintenance funding, and the net deferred maintenance.

## MTSU Capital Maintenance

### List of Projects for Capital Budget Request

2012 - 2013	Priority	Project Name	FY 12/13 Request	Appropriated Funding
	1	Domestic Water/Sewer System Updates	\$ 506,000	\$ 510,000
	2	Murphy Center Arena HVAC	\$ 1,617,000	\$ 1,620,000
	3	Underground Electrical Phase VI	\$ 2,140,000	\$ 2,140,000
	4	Peck Hall HVAC Updates Phase II - VAV	\$ 860,000	\$ -
	5	Murphy Center Exterior Door Repair/Replacement	\$ 633,000	\$ -
	6	Walker Library Roof Replacement	\$ 1,045,000	\$ 1,050,000
	7	Murphy Center Roof Replacement	\$ 2,518,000	\$ -
	8	Jones Hall Plumbing Upgrade	\$ 1,000,000	\$ -
	9	Several Buildings Electrical Equipment Upgrade	\$ 1,000,000	\$ -
	10	Campus Stormwater BMP	\$ 550,000	\$ -
	11	Central Plant Cooling Tower Replacement	\$ 750,000	\$ -
	<b>Total:</b>		<b>\$ 12,619,000</b>	<b>\$ 5,320,000</b>

2013 - 2014	Priority	Project Name	FY 13/14 Request	Appropriated Funding
	1	Murphy Center Roof Replacement	\$ 2,720,000	\$ 2,720,000
	2	Central Plant Cooling Tower Replacement	\$ 810,000	\$ 810,000
	3	Absorption Chiller/Tower Replacement	\$ 1,100,000	\$ -
	4	Murphy Center Accoustical Ceiling Replacement	\$ 800,000	\$ -
	5	Jones Hall Plumbing Upgrade	\$ 1,080,000	\$ -
	6	Several Buildings Electrical Equipment Upgrade	\$ 1,080,000	\$ -
	7	Several Buildings Exterior Renovations	\$ 1,100,000	\$ -
	8	Domestic Water/Sewer Systems Upgrade	\$ 506,000	\$ -
	9	Murphy Center Exterior Door Repair/Replacement	\$ 684,000	\$ -
	10	Peck Hall HVAC Updates Phase II - VAV	\$ 929,000	\$ -
	11	Campus Stormwater BMP	\$ 594,000	\$ -
	12	Sidewalk Repair/Replacement	\$ 350,000	\$ -
	<b>Total:</b>		<b>\$ 11,753,000</b>	<b>\$ 3,530,000</b>

2014 - 2015	Priority	Project Name	FY 14/15 Request	Appropriated Funding
	1	Absorption Chiller/Tower Replacement	\$ 1,320,000	\$ 1,320,000
	2	Several Buildings Electrical Equipment Upgrade	\$ 1,300,000	\$ -
	3	Several Buildings Exterior Renovations	\$ 1,320,000	\$ -
	4	HVAC Control Upgrade	\$ 915,000	\$ -
	5	Domestic Water/Sewer Systems Updates	\$ 610,000	\$ -
	6	Peck Hall HVAC Updates Phase II-VAV	\$ 1,115,000	\$ -
	7	Jones Hall Plumbing Upgrade	\$ 1,300,000	\$ -
	8	Campus Stormwater BMP	\$ 715,000	\$ -
	9	Sidewalk Repair/Replacement	\$ 500,000	\$ -
	<b>Total:</b>		<b>\$ 9,095,000</b>	<b>\$ 1,320,000</b>

2015 - 2016 Request	Priority	Project Name	FY 15/16 Request	Appropriated Funding
	1	Central Plant Controls Upgrade	\$ 2,650,000	\$ -
	2	Generator Replacement	\$ 825,000	\$ -
	3	Several Buildings Electrical Equipment Upgrade	\$ 1,450,000	\$ -
	4	Replacement of BAS Control Panels	\$ 715,000	\$ -
	5	Several Buildings Exterior Renovations	\$ 1,480,000	\$ -
	6	Domestic Water/Sewer Systems Updates	\$ 680,000	\$ -
	7	Jones Hall Plumbing Upgrade	\$ 1,450,000	\$ -
	8	Sidewalk Repair/Replacement	\$ 560,000	\$ -
	9	Campus Stormwater BMP	\$ 800,000	\$ -
	10	Peck Hall HVAC Updates Phase II-VAV	\$ 1,250,000	\$ -
	<b>Total:</b>		<b>\$ 11,860,000</b>	<b>TBD</b>

MTSU Sustainable Campus Fee (SCF) Program								
Approved Projects	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Green Power Purchase	\$ 220,000	\$ 230,000	\$ 230,000	\$ 230,000	\$ 230,000	\$ 230,000	\$ 230,000	\$ 150,000
Alternative Fuel (Biodiesel) Production Project							\$ 2,500	
AMX Resource Mgmt Suite System Upgrade- ITD								\$ 7,500
Atrium lighting project for Walker Library						\$ 19,366		
Bioremediation of barbiturates for ecofriendly composting						\$ 16,846		
Blast hand dryers for Campus Rec					\$ 11,270			
Bring green chemistry to campus								\$ 13,066
Bus conversion to run on used cooking oil	\$ 15,000							
Campus Rec indoor pool LED lights								\$ 31,450
Change hot water valve tops in Murphy Center						\$ 6,502		
Chilling plant: pressure gauges installation	\$ 1,000							
Clean/replace coils multiple buildings (AMG, Mass Comm, Forest Hall, Voorhies, JUB, Fairview, KUC, Telecomm, BDA, Wiser Patten, TN Livestock Cntr, McFarland, Murphy Center first floor)			\$ 10,288	\$ 7,490	\$ 6,204	\$ 4,100	\$ 20,157	\$ 15,100
'Clickable' Polymers							\$ 600	
Closed loop sediment filtering system multiple buildings (KUC, Walker Library, Murphy Cntr, Todd, Stark Ag, VET, LRC, Mass Comm, Jones. Cope, Cason Kennedy; EHS, and other buildings)		\$ 12,000	\$ 28,900	\$ 30,900	\$ 30,900	\$ 15,450	\$ 46,650	\$ 15,750
Conduct light level studies in Todd, Mass Comm, BAS, Peck				\$ 5,500				
Convert vehicle to operate on natural gas/installation of compressed gas station				\$ 8,500				
Creating MTSU as a bicycle friendly university						\$ 38,169		
Creation of a rain garden to assist with storm water run off				\$ 3,000				
Data Loggers for Energy Efficiency Analysis								\$ 4,000
Dehumidifier project						\$ 2,100		
Dehumidify Voorhies Room 108							\$ 11,500	
Development of a biosensor to detect hydrogen production						\$ 4,250		
Development of flex-fueled engine 1 and 2 (sun and hydrogen)	\$ 13,000	\$ 41,000						
Dorm room recycling bins pilot program								\$ 3,000
DRIPS Project (Development and Research into Pervious Surfaces)		\$ 13,500						
Energy Books purchase							\$ 1,823	
Environmentally Friendly Bio-Composting of Toxic Horse Carcasses							\$ 8,894	
FLIR i7 compact infrared camera for energy audits				\$ 3,450				
Golf cart conversion 1 and 2 (electric to solar)		\$ 10,500					\$ 2,000	
Hot/chilled water valve assessment		\$ 5,000						
HVAC controls replacement Wright Music	\$ 29,950							
HVAC pocket filter project (BAS Phase 1 & 2, JUB Phase 1 & 2, Walker Library Phase 1 & 2, Honors, DSB, Todd, McFarland, Stark Ag, LRC, Holmes, COE, Murphy Center first floor, Photography, Peck; BDA)			\$ 6,250	\$ 41,507	\$ 19,250	\$ 25,806	\$ 40,235	\$ 4,801
Hybrid/Alternative fuel vehicle purchase (subsidy)	\$ 17,250							
Hybrid car project								\$ 15,000
Increasing Production Capacity of Biodiesel							\$ 9,965	
Infrared thermometer guns						\$ 500		
Install 10kW solar system					\$ 81,224			
Install FilterPave Porous Pavement in parking lot on Champion Way				\$ 18,665				
Install frequency drive in BDA					\$ 12,777			
Install milk cooling system					\$ 17,500			
Installation of a geothermal cooler system on the MTSU farm				\$ 27,150				
Installation of programmable thermostats in F/S maintenance shops	\$ 1,200							
Installation of variable speed compressor in the Central Utilities Plant				\$ 24,000				
Insulate pipes- DSB, WPS, SFA, Wright Music, Ellington, Murphy Center, Stark Ag, McFarland, AMG; Todd, TLC, CKN, Midgett; Mass Comm, Peck						\$ 37,337	\$ 5,000	\$ 17,000
Kenaf Agriculture for Sustainable Community (alternative energy crop)			\$ 5,935					
Lamp crusher	\$ 4,000							
Laser alignment devices					\$ 5,681			
LED lamps in Mass Comm and Peck					\$ 39,562			
Library book purchase			\$ 4,500					
Light switch plate labels	\$ 2,500							
Multi-fuel bus emission testing project		\$ 10,944						
Occupancy sensors Honors Building			\$ 3,372					
Permeable Pavers for Sustainable Learning Environment (Forest Hall)			\$ 13,050					
Pleated filter project								\$ 4,427
Poster campaign and Earthwise reusable bag project		\$ 18,160						
Progression towards becoming a bicycle friendly Univ./ advancing the project							\$ 30,668	\$ 19,295
Promotion of SCF Program							\$ 1,000	
Protreat (kills mold in air handling unit pans)						\$ 1,400		
Purchase & installation of surge protectors					\$ 1,904			
Purchase of organic dyes to be used in organic dye sensitized solar cells			\$ 1,100					
Rain Gardens/Bioremediation Ponds on MTSU Campus for MS4 Compliance/Maintenance						\$ 4,000	\$ 3,000	
Re-caulk exterior windows (Davis Science Building)		\$ 14,000						
Recycling - community drop-off relocation/expansion	\$ 3,000							

(Continued on page 21)

(Continued from page 20)

MTSU Sustainable Campus Fee (SCF) Program								
Approved Projects	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Recycling containers/supplies for MTSU Recycling Program	\$ 1,500	\$ 5,000	\$ 5,500	\$ 6,000	\$ 13,500	\$ 5,500	\$ 6,500	\$ 17,500
Recycling- increase behavior thru behavior science principles								\$ 1,300
Recycling at special events pilot program								\$ 3,500
Re-lamp Cason Kennedy Nursing Building (existing portion) and Fairview	\$ 30,600	\$ 30,600						
Replace filters in AHU & clean coils in CKN & KOM					\$ 11,312			
Replace old V-Belts system					\$ 2,900			
Replace older motor with energy efficient motor in Holmes; Wright Music; Murphy Center Phase 1 & 2						\$ 2,279		\$ 26,180
Replace older motors with energy efficient motors-Stark Ag.							\$ 5,300	
Replace use of Helium in DSB with Hydrogen generated via electrolysis								\$ 14,160
Replacement of exterior windows McFarland and Holmes		\$ 35,000	\$ 25,000					
Replacement of incandescent lamps in Murphy Center						\$ 5,729		
ReRev Cardio System elliptical machines in Rec Center				\$ 30,000				
Self sustainability Initiative through Alternative Horticulture							\$ 10,000	
Server consolidation/Virtualization/Blade servers-ITD			\$ 20,000	\$ 21,000	\$ 21,708		\$ 47,000	\$ 32,500
Server consolidation/Visualization- Health Services								\$ 20,000
Solar attic fans in Ellington Human Science						\$ 16,720		
Solar boat project								\$ 6,165
Solar exhaust fans						\$ 12,212		
Steam trap ultrasonic test equipment					\$ 2,600			
Student Suitabilities Education Initiative							\$ 2,500	
Studio lighting installed in Mass Comm and LRC			\$ 22,960					
Sub-metering for Chilling Plant and Murphy Cntr	\$ 8,000							
Test & balance hot water system- KUC								\$ 12,716
Tree planting project								\$ 3,000
Turning manure into gold				\$ 1,000				
Ultrasonic transmitters Midgett			\$ 18,130					
Variable Frequency Drive- Jones Hall							\$ 5,225	
Water bottle filling stations- Rec Center								\$ 3,400
WMTS-FM 88.3 Solar Power Supply Project						\$ 12,000	\$ 19,900	
<b>Annual Total:</b>	<b>\$ 347,000</b>	<b>\$ 425,704</b>	<b>\$ 394,985</b>	<b>\$ 458,162</b>	<b>\$ 508,292</b>	<b>\$ 460,266</b>	<b>\$ 510,417</b>	<b>\$ 440,810</b>

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 on the campus of non-renewable energy.

A portion of the fee is designated 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 remainder of the funds generated by the fee provides support for campus projects that increase or improve energy efficiency on campus, such as retrofitting older systems, lowering consumption and decreasing energy expenses.

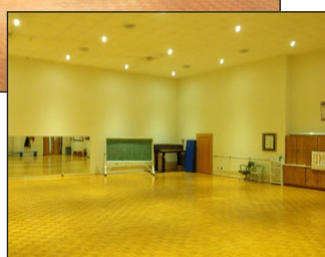
Projects approved support energy and environmental sustainability.

## Sustainable Campus Fee Case Study:

### Murphy Center Dance Studio Lighting Improvements



Before



After project completion

The Sustainable Campus Fee committee funded a project to replace the existing lighting in Murphy Center's Dance Studio "A" & "B". The existing infrastructure for the space was a variable voltage dimming device with a total of fifty 250w quartz halogen lamps. The energy expended for one twelve hour period totaled 150 KW. From a dollars and cents standpoint, this totals \$15.12 per twelve hour period.

Building Services staff removed existing fixtures and controls replacing with updated lighting controls and fixtures. The new L.E.D.'s, Par 38 18 watt, are now controlled with preset dimming controls. The cost of operation for a twelve hour period uses 10.8 KW at a cost of \$1.09 to operate.

Added benefits, beyond the anticipated, include greatly improved lighting levels and reduced requests for replacing non-working lamps.



## *Summary of Services 2013/2014 Annual Report*

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

Linda Hardymon, Editor/Publishing Coordinator

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