

T FACILITIES SERVICES
ANNUAL REPORT 2016



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EXECUTIVE SUMMARY

The Facilities Services Department strives to advance the University of Tennessee's overall mission by maintaining and optimizing the physical resources and environments of the Main and Agricultural campuses.

Facilities Services' number one priority is to create and maintain a clean, safe environment for students to learn, faculty to teach and perform research, and staff to work. Our dedicated staff of nearly 700 achieve this goal through their 5,500 years of combined service. This was accomplished even with an average of 94 vacant positions per month in the department (largely due to circumstances beyond our control).

Our record of accomplishments during the 2015-16 academic year includes, but is not limited to:

FACILITIES SERVICES DEPARTMENT

- Added building and work inspection programs in Zone Maintenance, Utilities Services, and Building Services
- Initiated training and certification programs in Building Services, Landscape Services, and Project Management
- Reducing emissions through the conversion from coal to natural gas, as well as through Renewable Energy Credits
- Successfully processing nearly 43,000 campus work requests
- For graphic review of Facilities Services Department performance for FY 16, see APPENDICES beginning on page 37 of the Annual Report at fs.utk.edu

ADMINISTRATIVE & SUPPORT SERVICES

- Processed 17,000 invoices and 10,000 procurement card transactions, managed 125 vendor contracts for materials & services, and procured \$23.9 million in materials & services

COMMUNICATIONS & INFORMATION SERVICES

- STARS (Sustainability Tracking, Assessment and Rating System) Rating achieved by our Office of Sustainability, its first rating since 2013. The campus was also ranked number one in the SEC and in the nation for Green Power use
- Developed Career Paths, completed OSHA training goals, refined CCP program, and ex-

The department continually improves upon best industry practices in order to support the goal of providing the best possible services while also maintaining the best cost model, with our employees' vested loyalty and ownership in the work they provide to the State of Tennessee and to the UT Knoxville campus community.

As we look forward to the university's continued advancement, with the constant support of our department, we compiled a report of our achievements for the last year in our Annual Report as we strive to exceed our goals for the 2016-2017 academic year.

panded our Employee Orientation program

- Continue to pursue best practices and trending benchmark metrics through Archibus, our fully automated integrated workplace management system.

CONSTRUCTION SERVICES

- Completed 487 projects during the academic year, for example:
 - Walters Life Science Auditorium – Refurbished seating, upgraded audio/video equipment, new white boards, blinds, ceiling, lighting, carpeted, and paint
 - English Language Institute (ELI) – Relocated to Conference Center Building first floor. Renovated area (9,682 square feet) included a lobby and reception area, computer lab/library, eight classrooms, five offices, open workstations, staff support area (printers, copier, files, work space)

DESIGN SERVICES

- Nearly 50 Capital Projects totaling over \$1 billion are taking place on campus

FACILITIES ADMINISTRATION

- Maintaining the lowest administrative cost per square foot among SEC peers
- Performed ongoing research and study of best practices in the facilities management industry to help achieve our goal of staying on the cutting edge of innovative and best practices here at UT Knoxville

EXECUTIVE SUMMARY

FACILITIES OPERATIONS

- Increased square-foot coverage per employee while maintaining levels of service as we improved cleanliness scores with the in-sourcing of our Building Services subunit
- During football game days UT Recycling recycled a total of more than 160 tons of material, donated 5,913 pounds of food, and averaged a 66% waste diversion rate

UTILITIES SERVICES

- Converted two buildings to low flow fixtures, installed 25 energy efficient water fountains/bottle filling stations to conserve energy and reduce use of disposable bottles

- Changed out wooden cooling tower on the Reese Hall Chiller House with cooling tower reclaimed from the old University Center
- Installed high-voltage (HV) 11 way switch which will allow sectionalizing existing HV circuits for future facilities projects

ZONE MAINTENANCE

- The Facilities “One Call” program is available 24 hours a day, every day of the year. Customers can call 865-946-7777, or 6-7777 from a campus phone, and speak live with a Facilities Services representative.
- Achieving the lowest maintenance total cost per gross square feet among SEC peers

As the most visible staff on campus, we pride ourselves with our above 98% customer satisfaction rate and aim to maintain and improve on our quality of service, and positive impact on campus in the year to come.



INTRODUCTION

“UT can’t reach our Top 25 and Master Plan goals without our Facilities Group being Top 25.”

– UT Chancellor Jimmy Cheek



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

FACILITIES SERVICES

This report is presented to showcase the continuing initiatives of the University of Tennessee, Knoxville Facilities Services Department in our drive to become a Top 25 Facilities Department. We are committed to be in the forefront of achieving the university’s goal to become a Top 25 Research Institution.

It takes a team of dedicated Facilities Services employees to provide the services worthy of the University of Tennessee. This is an introduction to our commitment to being that team.



FACILITIES SERVICES DEPARTMENT

The Facilities Services Department is the largest non-academic department on the University of Tennessee, Knoxville campus.

Our department is responsible for the basic operation and continuous maintenance of most facilities on the Main and Agricultural campuses of the University of Tennessee.

Campus facilities include approximately 280 buildings, slightly more than 15 million square feet of space, and more than 700 acres of land.

In addition to these facilities, we are also responsible for electrical substations that provide power to most of our campus buildings, and a central steam plant that provides heating and hot water in most campus spaces.

We currently have more than 677 employees distributed through several specialized units in our department. These units are Administration, Administrative & Support Services, Communication & Information Services, Construction Services, Design Services, Facilities Operations, Special Projects, Utilities Services, and Zone Maintenance.

Our specialized subunits include STAR Team, Business Services, Central Supply, Plumbing & Heating Services, Electrical Services, Air Conditioning Services, Steam Plant, Landscape Services, Building Services, Building Finishes, Lock & Key Services, Sanitation Safety, Rapid Response Team, Communications & Public Relations, Employee Training & Development, IT Support & Maintenance, Project Coordination, Construction Team, Estimating, Stormwater Management, Landscape Response, Interior Design, GIS Projects, Archive & Space, Codes Enforcement, and Project Management.

Facilities Services staff members also oversee the university's environmental programs, including UT Recycling and The Office of Sustainability.

Key parts of our organization are operating continuously, 24-hours-a-day, 365-days-a-year, and we are always on call.

Anyone on campus can contact Facilities Services 24-hours-a-day using our "One Call" program at 946-7777. Someone is always available to provide customer service and support to the campus community.

Our goal is to always enhance and maintain campus environments that are highly conducive to learning and research.

FACILITIES VISION:

Our vision is to be recognized as a model facilities services organization by providing outstanding support and superior services to the university community.

This is accomplished by developing staff who are motivated, highly skilled and customer focused; by building diverse relationships based on mutual respect, effective communication, and shared goals; by creating innovative processes that will be effective, efficient and supported with the required resources and appropriate policies; and by becoming a trusted provider that promotes a clean, safe, and sustainable environment for UT.

FACILITIES MISSION:

Our mission is to provide, maintain, and optimize the physical resources and environments of the campus for the university community through the integration of people, technology, and innovative work practices in order to fully support and promote the University of Tennessee's VolVision, its long-range Master Plan, and its goal of becoming a Top 25 Research Institution.

FACILITIES VALUES:

We incorporate several important values into our daily operations. By embracing and enforcing these values, our department can better support the university's own standards in education, research and public service.

Quality – We strive to exceed the expectations of the community in the areas of our responsibility.

Reliability – We labor to retain customers who can count on us for an appropriate and consistent response (in a timely fashion) to their concerns, requests, and problems.

Professionalism – We operate with the most highly skilled and knowledgeable staff, fostering teamwork, collaboration, and open communication – ultimately serving our customers with both integrity and respect.

Innovation – We continually seek out creative ways to improve our operations and the way we provide our services to meet our customers' ever changing needs.

Accountability – We perform in a manner at all times that makes us responsible and answerable to our customers, the university, the community, as well as to the people of the State of Tennessee.

Commitment – We are dedicated to an inclusive, safe, and sustainable work environment.

FACILITIES SERVICES COMPLEX

The Facilities Services Department relocated to the new Facilities Services Complex in spring 2016.

The 91,000-square-foot building on Sutherland Avenue now houses more than 200 of the department's employees after a two-year renovation and new construction project.

The building was constructed in 1908 as a marble and precast factory. During the renovation, overhead cranes were preserved as decommissioned artifacts, and elements like the original steel structure, concrete floors, and wooden decking were refurbished. The office section of the building is assembled in an open floor plan to foster collaboration among employees and departments.

The project frees up space for core academic buildings in the center of campus, which is among the goals of UT's master plan.

BUILDING QUICK FACTS

91,000-square-foot building
Dimensions: 447'W x 335'D
\$18.7M adaptive-reuse project
Project Start: spring 2014
Project Completion: spring 2016
Original Structure: c1908
Expansion: c1920
Seven acre site



FACILITY & SITE HISTORY

Former site of Southeast Precast Corp. from 1966 – 2012. Prior to this it was home to the Empire Marble Company, and then the Gray Knox Marble Company.

The original structure on the site was constructed in 1908 for the Empire Marble Company as a cutting and finishing facility, it was then enlarged by the Gray Knox Marble Company in 1920.

Near the middle of the twentieth century, the complex was a combination of old and new buildings. Some of the original frame Empire Marble buildings remained alongside the outward, decidedly more modern, enlarged plant building.

The property originally had a rail spur, and a branch ran through the building perpendicular to the N-S axis.



FACILITIES SERVICES COMPLEX



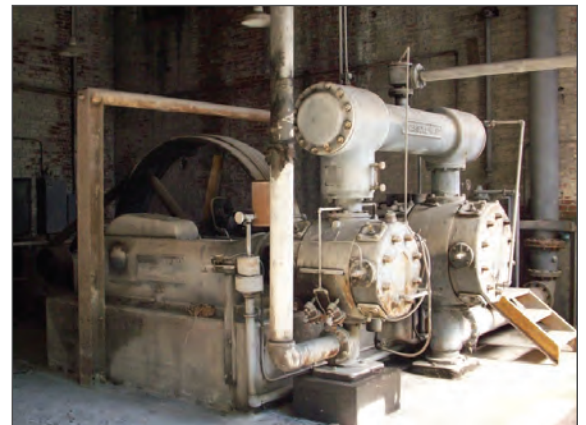
ADAPTIVE REUSE

Preserving the building's volume and recalling its industrial character were critical during the project.

The central hall's original 46-foot ceiling height remains. Overhead cranes were preserved as decommissioned artifacts, and elements like the original steel structure, clerestory windows, concrete floors, and wooden decking were refurbished, recreated, or salvaged and repurposed in other areas of the building.

Two water towers that were used as part of the marble cutting and fabrication process were preserved. The large tower near the front of the building will be painted Smokey Gray with the Orange and White checkerboard at the top and bottom. The smaller tower north of the building will be painted UT Orange and Smokey Gray.

Some of the original mechanical equipment and generators will be reinstalled as decommissioned artifacts and sculptures in the gardens that Facilities Services staff will add on the building's east and south sides.



BUILDING FEATURES

The computer training room at the Facilities Services Complex has several design features in addition to training. Audio/visual and communications are such that the room can be easily converted into an emergency operations center.

The computer training room and dispatch center are equipped with masonry construction on all four walls, as well as a concrete ceiling structure that allows them to be used for sheltering in the event of severe weather. The emergency operations center will have visibility into our planned dispatch center.

The dispatch center will be equipped with a video wall with connectivity to HVAC, fire alarm, electrical distribution, campus cameras, etc.

In addition, conference room 102 will be equipped with additional phone lines to allow it to be set up as a call center for times that the Facilities Services One Call program is overwhelmed.

To enhance its value as an emergency operation center, the building has full generator power backup and can operate off the grid in event of an emergency.



SELF-ASSESSMENT & BENCHMARKING

SIGHTLINES & FPI SURVEY

Improving self-assessment and benchmarking measures has also been a key component of the Facilities Services reorganization.

The ability to monitor current campus facilities conditions and forecast future risks is crucial to maintaining a safe and enjoyable campus environment.

Engaging with Sightlines Facilities Asset Advisors, University of Tennessee Facilities Services has embarked on rigorous benchmarking and analysis, ensuring that reorganization efforts address critical needs on campus.

See Appendix A for more detailed Sightlines information and Appendix B for detailed APPA FPI Report information.



ARCHIBUS SYSTEM

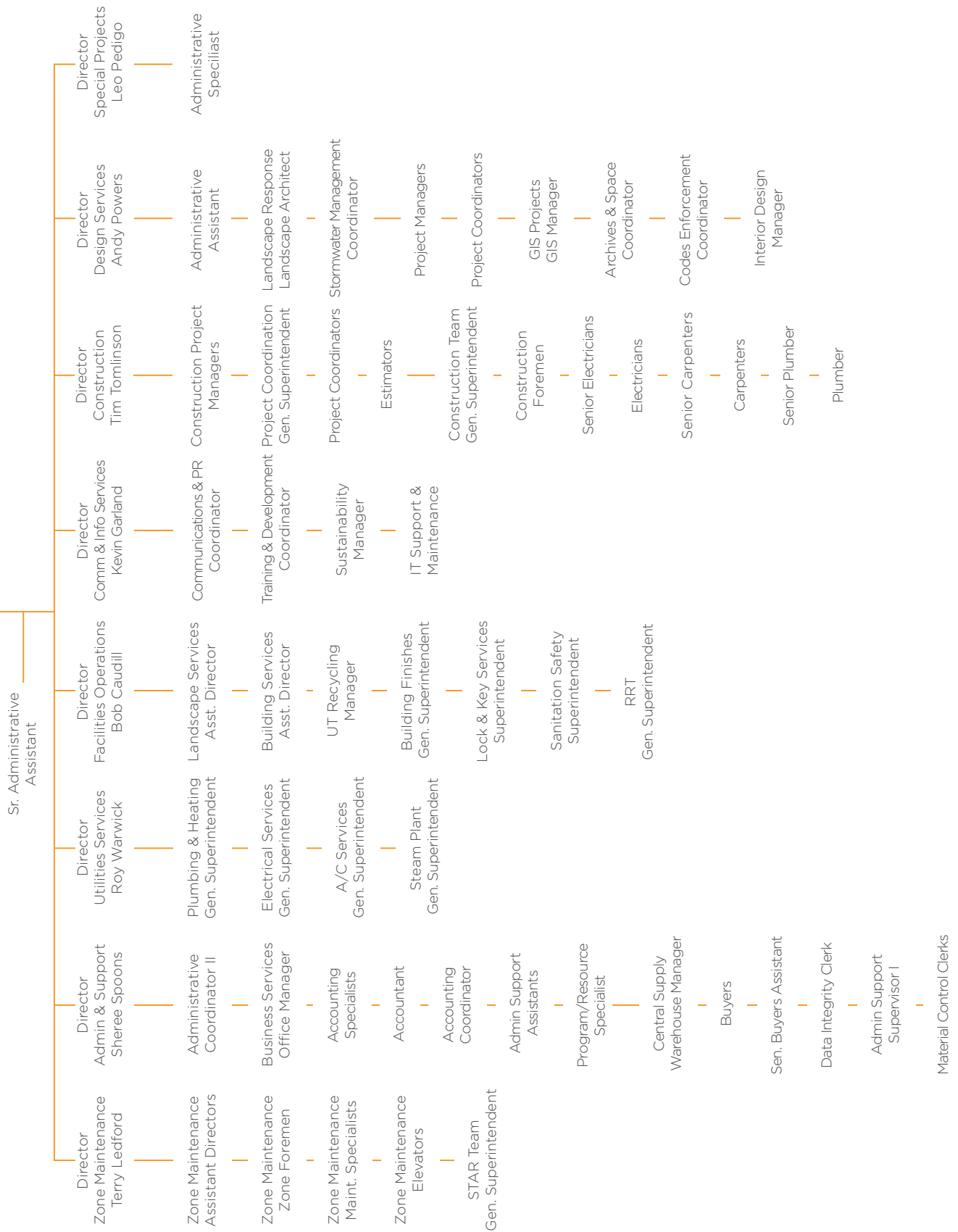


A primary component of Facilities Services increased accessibility, self-assessment, and benchmarking capabilities is the implementation of a custom Integrated Workplace Management System to replace the department's aging legacy system for requesting, tracking, and reviewing work orders. Archibus allows Facilities Services to better schedule, dispatch, manage, and report maintenance tasks efficiently using self-service capabilities to reduce operational costs and increase customer transparency and satisfaction.

The Archibus system gives our customers easier access to general work order information, broader access to more detailed reports, and real-time updates on work orders in our system. From there customers are also able to view or submit Project Requests, Key Requests, or Event Solicitations. Financial Officers are able to approve/reject work or provide substitute approvers when they know they will be out of the office.

DEPARTMENT ORGANIZATIONAL CHART

Associate Vice Chancellor Dave Irvin



2016 ANNUAL REPORTS



THE UNIVERSITY OF
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KNOXVILLE

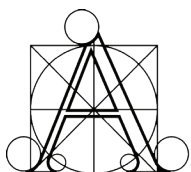
FACILITIES SERVICES

FACILITIES SERVICES ANNUAL REPORTS

SPECIAL PROJECTS

Archibus

Implemented a new IWMS (integrated workplace management system) on the Knoxville campus. Archibus allows Facilities Services to become more efficient in responding to work requests or issues on campus. It also allows the department to be more transparent to the University community. Users can now log into Archibus and check the status of their work requests, be notified of any potential issues with their work requests (parts on order, when the work is scheduled, etc.) and even approve chargeable work before the request ever gets to our workers.



ARCHIBUS

In addition, Archibus is a valuable tool in keeping up with the preventive maintenance work in each building. Whether preventive maintenance needs to be completed monthly, on a piece of equipment, or yearly, for regular cleaning of carpets, Archibus can schedule and automate the tasks on a daily, monthly, quarterly, yearly or any other regular schedule that may be determined. Phase I applications included Asset/Equipment Management, Work Order Management, PM Scheduling/Management, Material Management, Purchasing (AR/AP), Labor Management, BIRT reporting, a Performance Metrics platform, and tight IRIS integration. In Phase II we will be rolling out several more applications through the end of the year and into the next, including: Capital Budgeting, Capital Projects, Condition Assessment, EHS, Clean Building, Energy Management, Waste Management, Commissioning & BIM, a Mobile platform, integrated GIS ESRI extensions, and an all-new Key Control system that plugs in seamlessly with Archibus.

Research

Ongoing research regarding innovations and best business practices within the facilities management industry. Analyze the research results to identify those items most applicable to improvements here at The University of Tennessee. The goal is to stay on the cutting edge of best industry practices.

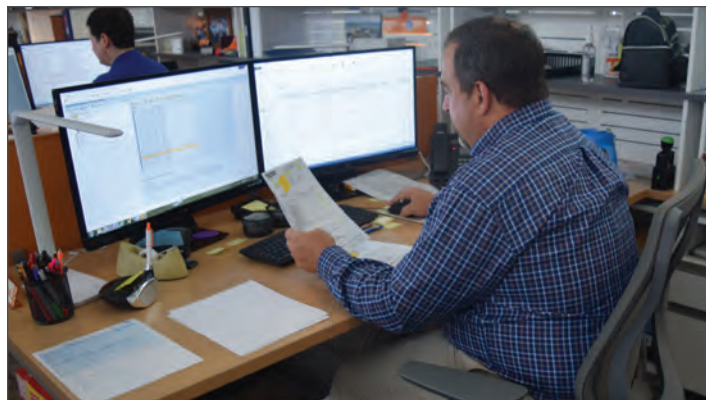


ADMINISTRATIVE & SUPPORT SERVICES

The responsibilities of the Administrative & Support Services Unit can be categorized into three primary areas: Financial Support Services, Material Procurement/Receiving and Warehousing, and Personnel and Administrative Support Services. These primary areas of responsibilities are conducted within three offices: Business Services, Central Supply, and Human Resources Administrative Support.

Business Services Office (BSO)

The Business Services Office is responsible for accomplishing financial support functions such as: budget build and execution, accounts management, accounts payable and receivable, ledger reconciliations, travel requests and expense reimbursements, procurement card administration, contract administration, payroll, scholarships, equipment inventories, and maintaining multiple financial and administrative databases for the Facilities Services Department.



The Business Services Office is responsible for the financial administration and execution of the annual Facilities Services Departmental Budget which encompasses over 40 E&G Cost Centers as well as income accounts and WBS restricted accounts. In addition, this office provides information and guidance regarding university fiscal policies and procedures and serves as the central point of contact for all questions related to Facilities Services financial matters. There are two subunits within the Business Services Office: Accounts Payable and Accounts Receivable, with responsibilities for each summarized below.

Accounts Payable

Accounts Payable operates within the Business Services Office and is the area in which Facilities Services expenses incurred are processed for payment for items purchased, received, services rendered, etc. These payments include invoices, transfer vouchers, procurement card payments, petty cash reimbursements, travel reimbursements, and requests for special payment and special remittance.

FACILITIES SERVICES ANNUAL REPORTS

During FY 2016 (July 1, 2015 through June 30, 2016) the Accounts Payable subunit processed the following:

Total invoices during FY 2016: ~17,000 invoices

Total procurement card transactions: ~10,000

Total vendor service contracts: 125

Total procurement of goods and services during FY 2016: \$23.9 million



This subunit also acts as a liaison between Facilities Services Shops and over 500 vendors for the procurement of goods and services needed to

maintain the University of Tennessee, Knoxville campus. Goods and services are procured in several ways: through Facilities Services' Central Supply, UT Market Place, existing contracts and purchasing agreements, and via a competitive bid process.

In addition, Accounts Payable is responsible for the following:

- Maintaining the Facilities Services Department vendor database, including vendor contracts and contract details.
- Overseeing the Facilities Services Department procurement card purchases, distributing all of the procurement card charges to the appropriate accounts and reconciling account charges for over 40 E&G cost centers per fiscal policies.
- Creating vendor requests, updating vendors remit to addresses, and obtaining W-9s for applicable vendors.

**40+
E&G Cost
Centers**



- Preparing travel documents such as Travel Requests, Travel Expense Statements, Conference and Seminar Registration Prepayment requests, Travel Advance Requests, and Direct Bill of Airfare and Car Rental applications.

Accounts Receivable

Accounts receivable represent debts owed to Facilities Services for maintenance, repairs, rentals and services provided to auxiliaries, campus departments, groups, or individuals surrounding the University of Tennessee's Knoxville Campus.

These debts are considered short-term and are normally expected to be paid to the university within 30 days after the service requests are completed. The Accounts Receivable subunit operates within the Business Services Office and is the area that invoices and

collects Facilities Services maintenance, repairs, and service receivables while following set UT policies and standards for the administration and support of any and all UT Facilities Services work requests. Accounts receivables for Facilities Services can be broken down into three main categories: Auxiliary Charges, Campus Departmental Charges and Project Charges.

Total Work Requests Processed:
~42,510



During FY2016 (July 1, 2015 through June 30, 2016) the Facilities Services Department accounted for the following work, projects and charges:

Total Work Requests Processed: ~42,510

Total Chargeable (Recoverable) Work Requests: ~18,000

Total Interdepartmental Transfer Vouchers from single Work Requests: \$7.1 Million

Auxiliary Charges: \$4.3 Million

Total Project Work Requests: 1,650

Project Charges: \$9.0 Million

Total FY 2016 Accounts Receivable Recoveries from Work Requests and Projects: \$20.4 Million

Utilities Receivable

Another part of the Facilities Services Accounts Receivable subunit is payment and processing of all utility charges on a monthly basis. Utility charges include the following activities: review and audit of utility bills from vendor(s), entering utility data into the program for processing, review for accounting and metering accuracy, payment to vendor(s), interdepartmental and auxiliary billing.

Facilities Services Business Services Office paid, managed, and audited the following during FY 2016 (July 1, 2015 through June 30, 2016):

Total Utility invoices per month: 200+ Utility invoices per month (campus-wide)

Total Utility payments during FY 2016 (UT Campus-wide): \$30.8 Million

Total Utility Recoveries (from Auxiliaries): \$14.9 Million

Total Number of Buildings Served: 289

Total Square Footage Served: 14.6 Million

In addition, the Facilities Services Business Office maintains payments, charges, ledgers and reports for all Utility Services including:

- Consumption and charges database and reports
- Installation and tracking of all new campus construction needs and costs for utility applications



200+ Utility Invoices per Month

FACILITIES SERVICES ANNUAL REPORTS

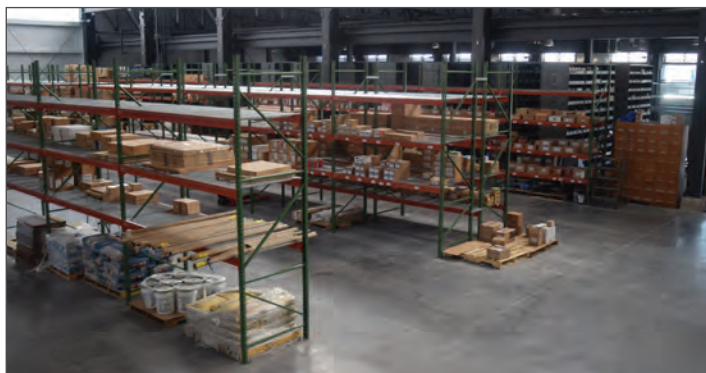
- Processing of utility contracts, applications and agreements for wastewater capacity and grease control permits
- Backflow testing requirements
- Utility meter lists
- Monthly and yearly budgets for all utilities
- Title V Compliance Certification and Emissions Fees records and payments
- Reconciliation of Utility Account Ledgers

The Accounts Receivable area also maintains related fiscal records for the Facilities Service Department while providing detailed information, summaries, service, and support to the University community.

Central Supply Office

The Central Supply Office handles purchasing and warehousing functions for the Facilities Services Department. The Central Supply Warehouse is a consolidated, well-organized, state-of-the-art warehousing facility. Located in the new Support Services Complex, it is the central receiving and issuing point for special order and stock replenishment purchases and maintains an inventory of commonly used stock items to support the Facilities Services units in providing maintenance and renovation services to the University of Tennessee, Knoxville campus location.

Parts Warehousing



Around the year 2010, UTK Campus Administration recognized the need for and importance of maintaining campus assets (buildings, grounds, research labs and equipment, etc). As part of the Top 25 goal-setting initiative, the Facilities Services Administration began a department-wide overhaul and reorganization, which included the push for an up-to-date, organized and maintained MRO Storeroom. As of July 2016, all warehousing locations are clearly marked and have undergone a comprehensive, hands-on physical inventory. The Central Supply Warehouse includes the following descriptives:

- Part Number
- Part Description(s)
- Part Type
- Part Location(s)
- Quantity on Hand
- Vendor(s)
- Cost Details
- Special Information

Facilities Services Maintenance Supply is consolidated into six main parts and SKU locations for ease of service to the UTK Campus. The total SKUs and inventory costs for FY 2016 are listed below.

Location	Number of SKUs FY 2016	Number of Transactions FY 2016	FY 2016 Inventory Total Cost
Central Supply Warehouse	2,265	8,656	\$581,824.71
HVAC Warehouse	1,446	92	\$547,523.97
Electrical Services Warehouse	399	768	\$127,824.24
Plumbing Services Warehouse	1,343	25	\$43,326.47
Custodial Services Warehouse	93	7,091	\$198,539.97
Landscape Services Warehouse	186	362	\$11,904.98
TOTALS FY 2016:		16,994	\$1,510,944.34

FACILITIES SERVICES ANNUAL REPORTS

Central Supply Warehouse physical inventory verification results are exceptional year after year. The FY2016 physical inventory verification is underway however, FY 2015 results are as follows:

Inventory Parts Accuracy FY 2015: 96.39% of items without discrepancy

Total Dollar Value Accuracy FY 2015: 99.23% accuracy for \$581,824.71

The next goal for the Central Supply Warehouse is the implementation of a bar-coding and tracking system for all inventory, which will be fully integrated with Archibus (the recently implemented IWMS system for Facilities Services). Bar-coding technology makes part and tool checkout easier, quicker, and more accurate. It also allows physical inventories and cycle counts to be conducted more efficiently and accurately, and enables the storeroom clerk to manage stores effectively on a day-to-day basis.

Parts and SKU Purchasing

The Facilities Services Central Supply Buying Group operates as an extension of the UT Purchasing Department and has delegated purchasing authority up to \$25K. The Central Supply buyers adhere to all UT Fiscal Policies for contracts and purchases and have extensive training and expertise with bidding opportunities and UT Market Place transactions. During FY 2016, Central Supply buyers were responsible for the following in purchases:

Total Purchase Orders (Documents): 11,047

Total Procurement of Goods and Services: \$23,998,605.83

The products and services that the Central Supply Buyers procure facilitates the effective maintenance and operation of the University of Tennessee Knoxville Campus, while still accommodating on-demand and emergency requirements.

Central Supply Vehicle Operations

After the Facilities Services Department moved to the Sutherland Avenue Support Services Complex, the Facilities Services Administration implemented a transportation program to deliver parts, SKUs, and personnel from the off-site Sutherland Avenue location to the UTK Campus. Central Supply Vehicle Operations has implemented a schedule that allows van operations

from 7 a.m. to 6 p.m. on a daily basis to best serve the Facilities Services shops maintenance and support program and campus community.

Human Resources Administrative Support Office

The Administrative & Support Services unit is where the HR and payroll functions for the Facilities Services Department are centralized. It is responsible for coordinating and managing the ongoing Human Resource and payroll functions operations of Facilities Services, providing critical support to the eight unit directors and the Associate Vice Chancellor in performing these functions.

The office accomplishes advanced specialized administrative duties: coordinating, managing and overseeing the recruiting, interviewing, and hiring of new staff, and assisting supervisors and staff with personnel and payroll issues. The office serves as a vital centralized link between the Facilities Services Department, UT Knoxville Finance and Administration, the UT Knoxville Office of Equity and Diversity, the UT Knoxville campus Human Resources Office, and the UT Treasurer's Office concerning personnel and payroll matters.

The office interprets, communicates, and advises unit directors and supervisory personnel on HR and payroll policies and procedures and provides direction and guidance in accomplishing personnel or payroll functions.

The unit also coordinates and manages staffing services for over 650 employees to include coordinating performance review evaluations, managing personnel or payroll changes, leave applications, promotions, and disciplinary procedures. The office prepares reports on staffing levels, career path progression and eligibility, employee certification requirements and eligibility, employee leave balances, and payroll expenditures for the unit directors' and employees' planning purposes.

During FY 2016 the HR Administrative Support Office accounted for the following transactions:

Total New Hires Processed: 146

Total Terminations Processed: 164

Total Career Path Upgrades: 27

The HR Administrative Support Office edited, corrected and audited 26 bi-weekly payrolls for over 600 non-exempt staff employees each payroll during FY 2016 and also performed 12 monthly payroll edits, corrections and audits for over 50 exempt staff employees each payroll during FY 2016. Total payroll processed during FY 2016 was \$23 Million.

BAR CODING



STAFFING SERVICES



650+ Employees



FACILITIES SERVICES ANNUAL REPORTS

Facilities Administrative & Support Services Unit Highlights

Facilities Services Business Service Office, Central Supply and HR Administrative Support Services has accomplished many goals throughout the FY2016 period. Some of the highlights are:

Total FY 2016 Payroll Processed: \$23 Million for over 650 employees

Total Work Requests and Projects Processed: 44,160

Total Financial Transactions (Invoices & PCard Purchases) Processed: 27,000

Total Procurement of Goods and Services: \$23.9 Million

Total FY 2016 Recoverable Charges: \$35.3 Million

Total FY 2016 Utility Payments: \$30.8 Million

Inventory Parts Accuracy FY 2015: 96.39% of items without discrepancy

Total Inventory Dollar Value Accuracy FY 2015: 99.23% accuracy for \$581,824.71

Total Transaction Dollar Amount Including Payroll Processed for FY2016: \$113 Million

COMMUNICATIONS & INFORMATION SERVICES

Office of Sustainability

Energy Projects

Green Revolving Fund: As of June 30, 2016, \$450,000 has been allocated to the fund, with a projected energy savings of \$194,502 for the next several years.

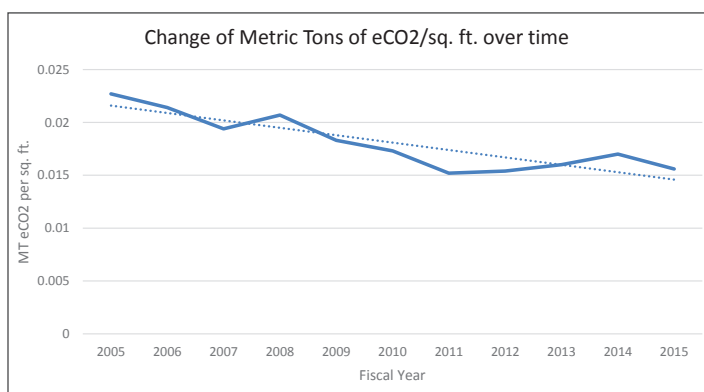
Peak Energy Use Campaign: A marketing campaign to inform campus of higher energy rates during certain times of the day and seasons.

Greenhouse Gas Emission Reductions

The subunit is estimated to report a 6,000 – 7,000 metric tons of CO₂e reduction for FY 16 (compared to FY

15), however report is not complete. The GHG inventory is compiled during September and October for the previous FY, to be released by November as part of the Environmental Impact Report for campus.

To date, the Office of Sustainability has reported a 41,387 metric tons reduction since FY baseline 2008 and 16.3% overall GHG reduction of metric tons since FY baseline 2008.



The subunit is on track to meet or exceed target goal of 20% reductions by 2021, as set by the Climate Action Plan in 2010, using FY 2008 as a baseline.

Awards

Efforts by the Office of Sustainability resulted in several awards during the last year including TVA Green Power Switch Sustainable Pioneer, EPA Green Power Partnership Conference Leader - SEC, Gold Addy Award - Sales and Marketing Category, and UCDA Design Competition Award Winner.

Rankings

The Office of Sustainability received a STARS (Sustainability Tracking, Assessment and Rating System) Rating, its first rating since 2013, and was ranked number one in the SEC and the nation for Green Power.



Grants

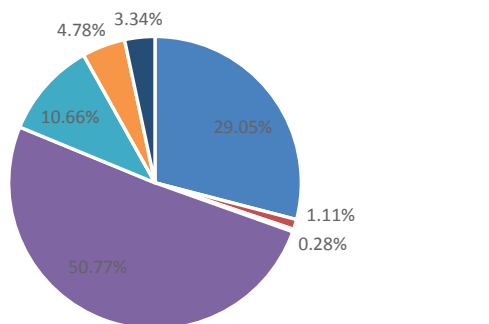
The Office of Sustainability was awarded grants totaling \$44,994 for FY 2016 including an \$800 TWRA Aquatic Habitat Grant, a \$500 TWRA Riparian Tree Planting Grant, and a \$43,694 TDEC Compost Grant.

Engagement

Student Volunteers: 1,350 students participated in Office of Sustainability led, funded, and/or partnered volunteer service opportunities and events, with an average of four hours per student opportunity.

Campus Sustainability Day, Earth Month Celebration and Environmental Leadership Award events hosted

FY 2015 GHG Emission Sources



■ Stationary Combustion ■ Mobile Combustion ■ Refrigerants & Chemicals
■ Purchased Electricity ■ Communting ■ Air Travel
■ T&D Losses

FACILITIES SERVICES ANNUAL REPORTS

more than 1,500 students, faculty, staff, and the public throughout the year, connecting various environmental centers and student groups to the campus population.



Infrastructure

The Office of Sustainability hosted the University of Tennessee's first Arbor Day Tree Planting where more than 1,000 trees were planted by more than 70 volunteers.

Four rain gardens were installed across campus and 85 new bike racks were installed using student design and labor.



Notable Facts

Student Design/Research Fund Projects included the following: Thermal Energy Storage at Hodges Library via M.A.B.E., HVAC Filtration Study for outside air via M.A.B.E., Commuter Data Methodology Study via Civil Engineering, and Second Creek Research Station via Civil Engineering.

An Environmental Progress Report generated by



the Committee on the Campus Environment was submitted to Vice Chancellor Chris Ciminno.

The Office of Sustainability established a new REC rate buying program, saving \$95,050 in overall cost

for the upcoming FY, all the while achieving #1 status in the nation for Green Power Purchase in Academia.

Partnerships with academics is growing as the Office of Sustainability utilizes campus as a living laboratory and works with Experience Learning to provide students real world experience.

IT Support & Maintenance

Facilities Services Department Move

IT Support and Maintenance's major project this past year has been moving the Facilities Services Department from its previous location at 2233 Volunteer Blvd to the new Facilities Services Complex on Sutherland Avenue.



To date, 115 computer workstations and printers have been relocated to Facilities Services Complex with more on the way. Subunit staff have assisted with relocating VOIP telephone and network connections, as well as the setup the new video conference rooms and office space.



Campus-Wide Systems

IT Support and Maintenance continues to assist Electrical Services with maintenance of the campus-wide Building Access and Fire Alarm Systems, and the

FACILITIES SERVICES ANNUAL REPORTS

subunit continues to support Air Conditioning Services with Building Automation Systems across Campus as well.

The subunit also manages the setup and maintenance of several construction webcams on campus for both viewing of site progress and for security.

Mobile Devices



Another major project has been the setup and distribution of more than 120 mobile devices and laptops for use in the field by Facilities Services personnel. In addition to tablets, sub-

unit staff also support and maintain radio communication devices for use by Facilities Services personnel across campus.

IT Support & Maintenance continues to support remote office locations across campus for Zone Maintenance and Building Services as well.

Future Projects

Upcoming IT projects are Self Identification of all 1136 network connected devices in the Facilities Services Department's care, updating state contracted software licenses for all Facilities users, creating a user-friendly mobile app, and migrating the department's web server to WordPress.

Employee Training & Development

2016 Training & Development Plan

Staff developed a "master plan" for Training & Development based upon reflections of current conditions, desired future state, and identified actions to achieve goals.

The plan addresses Training & Development course development, defined roles, EHS management systems, collaboration with University of Tennessee, Knoxville and external organizations, career development, English Second Language policy, and Training & Development funding and budgeting.

Career Paths

The subunit completed career paths for Construction Services and Administrative Services, and completed a draft of the Steam Plant path.

Staff also standardized the formatting for all career path documents, as well as a cost analysis format.



Zone Maintenance Critical Skills Training

A partnership has been established with Pellissippi State Community College to help Facilities Services develop a core curriculum of critical craft skills to allow for an enhanced skill set for all Zone Maintenance employees.

OSHA Regulatory Training through SkillSoft

During the academic year there were more than 4,000 user hits for the training (80 percent of University of Tennessee total). Facilities staff can access 16 courses and 85 percent of all assigned OSHA training was completed. In addition, new Spanish language modules have been added.



Other Safety Training and Incident Prevention Activity

Overview training of Confined Space Entry was provided for all Steam Plant employees.

Scaffolding Competent Person and Scaffolding Fall Prevention trainings were provided at Associated Scaffolding.

Unit level Personal Protective Equipment Assessments were completed.

The Facilities Services Respiratory Protection program management now resides within the Training & Development subunit, including fit testing for half and full mask respirators.



Forklift training was conducted for Central Supply employees and mobile equipment/pedestrian segregation processes were installed in the new warehouse.

Performance Review Refresher Training

The subunit improved and provided annual refresher training for all levels of Facilities Services management involved in the preparation of the Facilities Services employee performance review process.

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Search Committee/Hiring Practices Handbook

The handbook is currently under revision and will be published in late 2016.

Diversity Training

Two new SkillSoft Learning Programs have been created and assigned to all Facilities Services Employees.

The new programs focus on the importance of understanding diversity and harassment issues within the workplace. This information is also currently covered in the new employee orientation.

Archibus Training

The ongoing deployment of Archibus requires the creation of various training-related processes. Classes, job aids, and user manuals have been coordinated by the Training Department in concert with the Archibus team.

PROCESSING A WORK REQUEST CONTINUED

9. (Supervisor Role/Craftsperson Role) In new window, click the blue numbers to update actual hours spent on the job.

Note 1: Enter overtime hours if needed. This would be hours on the job over 8 hours each day.

Specific areas of focus have included verifying WR and Billing Console refresher, Project Management user manuals, Capital Project Management user manual, leave request training for new hires, and Preventive Maintenance module refresher.

Football Training

Facilities Services employees play a large role in the home game day operations. The department's role is growing more and more each year.

With this increased responsibility and increased visibility of Facilities staff, Training & Development conducted football training sessions to ensure that everyone is on the same page with the expectations.

The sessions included information provided directly by UT Athletics, covering game day security measures, the importance of "SEE SOMETHING SAY SOMETHING," weather tracking information and sheltering plan, and customer service.

The customer service training included staff appearance, friendliness, and professionalism.

Custodial Certification Program (CCP)

The latest CCP started during the spring and currently runs through the summer months of 2016. Changes to the program include conducting only one 22-week program per year based on feasibility for Building Services employees.

Eight instructors underwent Basic Instructor Training conducted by Employee Training & Development and three instructors attended CMI's "Train the Trainer" program. A thorough effort was given to standardize the program since it was handed over from Building Services to be managed by the Training & Development subunit.



Comprehensive organization of the program occurred during 2016 to standardize instruction materials and lesson plans into individual module curriculums and teaching aids.

Instructor manuals and training were created and presented to outline the role, responsibility and requirements of the instructor.

Review and discussion questions, math problems, and testing prep materials were created by the subunit for instructors to use in each module.

New Employee Orientation

Orientation continues to be a great success and is the subunit's longest running program. In 2016, 25 sessions have been conducted for more than 50 new employees.

Work has started to streamline the process, making it more valuable to the new employee.

Other Computer Use

The subunit conducts Net ID/password training, as well as guidance with setting up an email. Staff also provide an overview on the navigation of SkillSoft, IRIS employee self-service, MyUTK one stop, and Service Request creation and processing completion in Archibus.

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Zone Maintenance Customer Service Training



This training, launched in 2015, is a customized course administered by UT Employee Organizational Development. Plans are to continue to support the Zone Maintenance unit in pursuit of its customer service objectives.

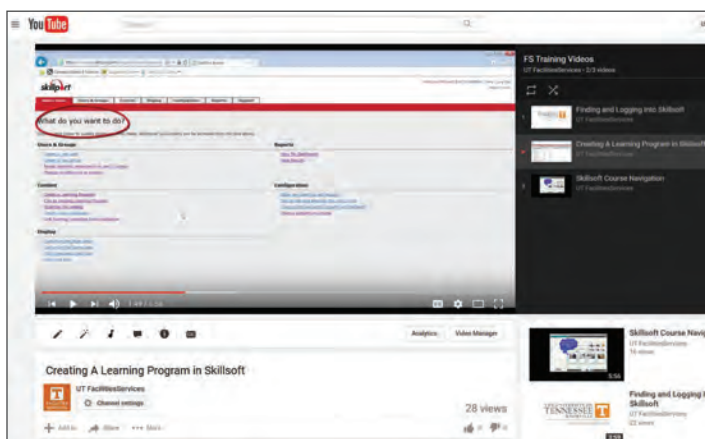
English as a Second Language (ESL) Employees

There are 15 different nationalities represented in Facilities Services and the Training & Development team has translated OSHA training into more than 12 different foreign languages. University and community translators have been utilized to enhance the translation efforts. In addition, five new Building Services SkillSoft modules have been added to the Facilities Services curriculum.

An ESL worker safety course project concept has also been developed with the English Language Institute.

Camtasia

ESL
12+ Department Translations



Employee Training & Development purchased Camtasia video production software to enable the production of short YouTube-style training tutorials. To date, seven tutorials have been completed.

Communications & Public Relations

Web site Development & Maintenance

The communications coordinator is responsible for the development and maintenance of the Facilities Services Department Web site, as well as several other related campus or organization sites including the Cone Zone site, Master Plan site, and TNAPPA site.



The coordinator is responsible for content development, site organization, and maintenance on each of the above listed sites.

TNAPPA Conference 2017

UT Knoxville will host the 2017 TNAPPA Conference. The communications coordinator has taken on the lead planning role for the conference committees. The coordinator formed the planning timeline and planning committees, serves on several planning committees, acts as the link between committees and TNAPPA, maintains both the TNAPPA Web site and UT vanity conference site, organizes meetings, and keeps all organizers on track.



TNAPPA Web site

During the Tri-APPA 2016 Conference the communications coordinator was voted onto the TNAPPA Board as the organization's Web site Editor. In this two year role the coordinator will be responsible for updating and maintaining TNAPPA's Web site, publishing documents, and communicating pertinent information to TNAPPA members.

Office of Emergency Management

The communications coordinator is involved with Facilities Services portion of emergency management in various levels. The coordinator acts as the Emergency Operations Center Coordinator for the department, as well as the head of the call center. The subunit is also responsible for the maintenance of the department's

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Emergency Response Plan that ties into campus-wide emergency response. The communications coordinator also acts as the campus-wide Public Information Officer for Facilities-related emergencies.

Facilities Services Showcase & Annual Report

The Facilities Services Showcase & Annual Report was another large-scale, department-wide project the Communications & PR subunit worked on during summer 2015. The 71-page document details a department overview, unit summaries, and unit/subunit annual reports.

The communications coordinator worked with each Facilities Services subunit to update their summary and annual review information to compile for the document. The document was then created and published on the Facilities Web site. The annual review portion of this document is something that will be completed every year in the future.

Facilities Fundamental Workshops



Communications & PR launched the new Facilities Fundamentals Workshop program in 2015 and has overseen and managed the continuation of the project. The department has successfully hosted six separate workshops: Helpful Tips for the

DIY Gardener, Everyday Sustainability for Home & Work, Professional Tips for the Interior Painter, and UT Zero Waste Principles & Practices, Plumbing & Heating Essentials, and Pest Control.

The Communications & PR subunit plans and organizes these workshops from beginning to end. This includes scheduling space, publicizing the event, creating content, producing workshops videos, and sending out supplementary materials and surveys after the workshops. Feedback from workshop participants has been overwhelmingly positive.

Facilities Services DIY Videos Series

Following the success of the Facilities Fundamentals Workshops, the Communications & PR subunit launched its Facilities Services DIY Series on YouTube. This video series compresses the information present-

ed in the Facilities Fundamentals Workshops into short, two to three minute videos that cover a variety of topics.

To date, the subunit has produced DIY videos that focus on landscaping, sustainability, the Mug Project, painting, plumbing & heating, and sanitation safety. A total of

12 videos are currently on the department's YouTube page. It is Communications & PR's goal to cover each unit and subunit in the department.

Social Media Outreach



The Communications & PR subunit is responsible for the management of all of the Facilities Services Social Media platforms. In the past year the subunit has maintained its existing social media accounts and has expanded its two new platforms, Pinterest and YouTube.



The reach of the department's existing social media accounts expanded significantly during the past 12 months. The Facilities Services Twitter account now has 781 followers, compared to 600 in August 2015, the Instagram page has 264 followers, compared to 214 in August 2015, and Facebook likes have increased to 346 from 287. Communications & PR also utilizes UT Media Relations Social Media to promote events and accomplishments.

Each month the subunit produces analytics of each of the social media sites to track the department's progress and reach.

Employee Recognition Programs

Communications & PR organizes and promotes departmental recognition programs. These programs include Employee of the Month, Perfect Attendance, and Exceptional Team awards. Employee of the Month has been a great success.

The Exceptional Team parties and gift cards are organized by Communications & Public Relations.



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Program Management Documents

The Communications & PR subunit created Program Management documents in direct response to outsourcing companies. An individual document was created by the communications coordinator for UT Knoxville, UT Martin, UT Chattanooga, UT Health Science Center, and UT System. Each document detailed the campus facilities department's productivity and briefly described their various responsibilities.

Spring & Summer Project Catalogs

The 2016 Spring and 2016 Summer Projects Catalogs were produced and publicized by the Communications & PR subunit. These documents detailed major spring and fall projects that were completed by each Facilities unit and subunit, as well as the planned projects for the summer. The communications coordinator compiled and formatted all of the information for the department-wide document.

American School & University



During the course of the year the subunit organized, created, and submitted 12 separate portfolios featuring campus buildings for American School & University publications. The portfolios consisted of architectural-style images, which the communications coordinator organized and shot with the assistance of UT Photography, project data, site plans, and manufacturers lists.

Portfolios were submitted to two different magazines: Educational Interiors and Architectural Portfolios. All of the University of Tennessee submissions were selected for publication in both magazines. These projects included Brenda Lawson, JIAM, Student Health, Facilities Services Complex, Temple Hall, Strong Hall, Engineering Quad (2), Stokely Family Residence Hall (3), Tickle Engineering, Henson Hall, and Ken & Blair Mossman.

Satisfaction Surveys

In March 2016 the Communications & PR subunit conducted and tabulated the Facilities Services Employee Satisfaction Survey to evaluate the perspectives and opinions of the department's em-



ployees regarding the conditions surrounding their daily work experience. More than 120 employees participated in the 2016 survey and the subunit compiled the results into a detailed report. Communications & PR will conduct the survey again in early 2017.



The subunit also conducted baseline surveys among a group of campus customers in the fall of 2015. These results were tabulated for comparison with future years.

In the next month, the subunit will conduct the 2016 customer satisfaction survey among Building Representatives and building occupants. Once the survey has closed, the communications coordinator will draft a report with the results.

APPA FPI Survey



Each year, the communications coordinator is responsible for the completion of the 450-question APPA FPI Survey. The coordinator gathers all of the necessary information from Facilities, as well as other campus units.

Newsletters

The Communications & Public Relations subunit has continued to maintain and expand upon the content in both Facilities Services Weekly and The Facilitator.

The bi-monthly newsletter is consistently more than 18 pages, and Facilities Weekly has steady participation from all of the Facilities subunits. The design of the weekly newsletter was also recently updated. Distribution lists for both newsletters continue to grow in 2016.

Building Representative List

The communications & PR subunit continues to update the campus-wide Building Representative List three times annually. This affords Facilities Services the ability to keep a more accurate list for both maintenance and emergency preparedness. The subunit also compiled an emergency contact list for the use of Emergency Management and UTPD.



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Cone Zone Web site and Physical Signs

In the past, the communications coordinator has worked with UT Media & Internal Relations to provide timely updates and images to the Cone Zone Web site. Beginning this fall semester the Cone Zone site will be maintained and updated by the communications coordinator through WordPress. The coordinator worked with Media & Internal Relations to redesign the site for increased usability. This site is expected to launch at the end of August 2016.

The subunit has also taken on the task of keeping detailed records of physical Cone Zone signs on campus. An interactive map has been created that links to photos of



signs in the designated map areas. This map will be used to update signs in disrepair and to keep track of signs that may be out of date.

Department Policies

The Communications & Public Relations subunit has continued to update and maintain department policies throughout 2015. All of these policies are kept up to date by the Communications Coordinator and the most recent copies are published on the Facilities Services Web site's Policies & Procedures page.

CONSTRUCTION SERVICES

Overview

The Construction Services unit completed 487 projects, paved nine parking lots, and created a gravel parking lot on Lake Avenue during the 2015-2016 academic year.



Classroom Improvement Projects



Classroom improvement projects took place in several buildings on campus. Some buildings had multiple room projects take place.

Improvement projects took place in HPER, Perkins Hall, Henson Hall, Humanities, Estabrook Hall,

Art & Architecture, Ferris Hall, College of Nursing, Bailey Education Complex, Dougherty Engineering, Jessie Harris, Walters Life Sciences, Earth & Planetary Sciences, Alumni



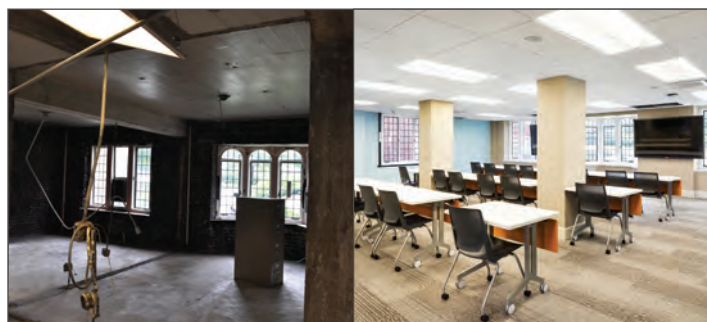
Memorial, Communications & Student Services, Early Learning Center, and the Law Complex.

Building Security Upgrades

Construction Services personnel completed building security upgrades in Brenda Lawson, Pratt Pavilion, and Perkins Hall.

Renovations

The unit completed a number of renovations in buildings during the academic year. The buildings renovated include Dunford Hall, Law Complex, Communications, Volunteer Hall, JIAMS, Tandec, Senter Hall, Solar array at 11th Street Parking, Vol Shop at Neyland Stadium, Vol Shop at Art & Architecture, Hess Hall, Clement Hall, Morgan Hall, Student Services, Conference Center, Art & Architecture, College of Nursing, Baker Center, SERF Labs, Andy Holt Tower, and Min Kao.



BEFORE & AFTER

ADA Projects

Projects that included automatic door operators, ramps, and sidewalk ramps took place at Panhellenic, Melrose, Dunford Hall, Dabney Buehler, South College, and the Student Union.

Flooring, Paint & Railings

Construction Services completed 106 carpet and flooring installations across campus, as well as 292 painting projects. Railings were also installed at the Communications Building.

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Roofing Projects

Roofing projects were completed at the following buildings.

Jessie Harris, Hessler Biology, Joe Johnson Animal Facility, College of Nursing, McClung Tower, Crops Genetics, Food Safety, McCord Hall, Morgan Hall, Biosystems Engineering & Soil Sciences Office



Building, Veterinary Teaching Hospital, Radiological Safety, Ayres Hall, Dougherty Engineering, Earth & Planetary Sciences, Nielsen Physics, HPER, Austin Peay, Philander Claxton Education, Neyland Drive Biology Annex, Printing & Publication, Lindsey Nelson Baseball Stadium, Pratt Pavilion, Tom Black Track Building, Auxiliary Services, Perkins Hall, Ferris Hall, Science Engineering Building, Law Complex, Office of Equity & Diversity, Student Success, Hopecote, Hoskins Library, Blount Hall, Brenda Lawson Athletic, Hearing & Speech, Humanities, Howard Baker, Allan



Jones Aquatic Center, Ayres Hall, Phi Kappa Alpha, Humanities, Communications, Student Services, Greve Hall, Dunford Hall, Stokely Management Center.

Coordination

The yearly cleaning and restoration of five bronze statues: General Neyland, Pat Summitt, “Monty” the dinosaur, Europa, and the Torchbearer.

The low pressure washing of the G-10 parking garage.

DAS systems at Neyland Stadium and Thompson Boling Arena.

Numerous security upgrades.

Lab upgrades in Dougherty Engineering.

Relocation of Human Resources to the Student Services Building and Disability Services to Dunford Hall.

Numerous on-call events for campus.

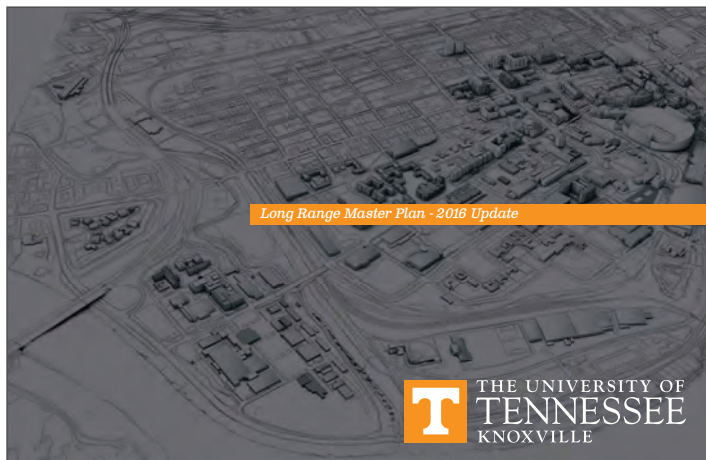
Yearly participants in Fire Watch at Thompson Boling Arena for Women’s and Men’s Basketball games, concerts, and special events.

DESIGN SERVICES

Completed Projects

Capital Projects

Steam Plant windows, Hitachi Building (Cherokee Farm), 1610 University Avenue, and Campus Master Plan update.



In-House Architecture and Landscape Architecture

Student Union Volshop and Bookstore accent painting, Delta Gamma furniture, Henson Hall directories, Circle Park Drive Niches and SERF painting and graphics.

Studies

Pool Utilization, Motor Pool, Gender Neutral/Lactation Room Survey, PCB estimate, and Melrose.

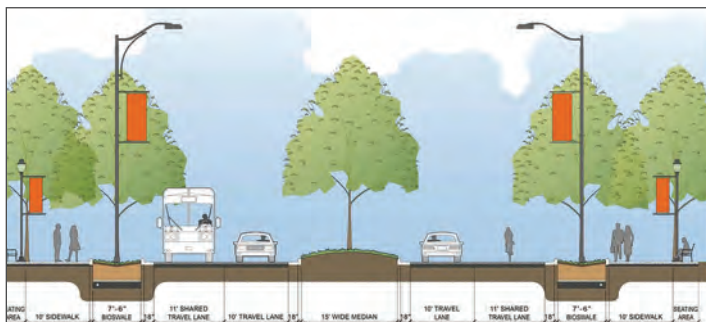
Ongoing Projects

Beautification

Site Stair – Melrose Ave. (International House), Circle Park/Torchbearer Plaza, Humanities Plaza Landscape Development, Second Creek – Phase II, Second Creek Phase I/Engineering Quad, Volunteer Blvd. Streetscape – Phase I, and Campus Entrances – Engraving.

Capital

Review Checklist – Beta Testing, Lake Ave. Garage, new Residence Hall (Gibbs site), UT Gardens – Pavilion, Volunteer Blvd. Garage (Stokely Site) G16, Alpha Gamma Rho, Haslam Fields Expansion, Boathouse,



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Golf Clubhouse, JIAMS Phase I (Ground & First Floor), JIAMS Phase II (Second & Third Floor), Mossman Building, Neyland East and West Skyboxes, UTSL,

Scoreboards, Tennis, Tom Black Track, Hoskins Library Parking Lot, Humanities IT, Senter Hall, Student Union Phase I, Student Union Phase II, TANDEC, Engineering Services Building (Tickle and Kao), Facilities Services Complex, Hodges Library Renovation (Veteran's Resource Center and One Stop Expansion), Library improvements at first floor reading room and Pendergrass, Golf Program, Strong Hall, 11th Street Garage solar, 1525 University Ave., WCR Building 4, WCR Buildings 3 and 6, WCR Phase I Buildings 1 and 2, West Campus Dining, Jessie Harris fire safety upgrades, Nursing fire safety upgrades, Nielsen fire safety upgrades, Austin Peay fire safety upgrades, Perkins fire safety upgrades, Dabney-Buehler fire safety upgrades, Earth and Planetary Science fire safety upgrades, Ferris Hall fire safety upgrades, and 16th & Cumberland steam project.



Color Palette

Jessie Harris.

Committee

Campus Planning & Design Committee, Stormwater Committee, Emergency Management Committee, and Concord Master Plan.

In-House Architecture



Conference Center Building, English Language Institute, EM space allocation and floor plans, Phi Sigma Kappa drainage, Hoskins Library reading room, Conference Center northwest stairwell

repair, HR/HC ramp design at Communications Building, Student Enrollment, UT Development & Research

office renovation (6th floor AHT), Hoskins Library waterproofing, Facilities Services Complex, Perkins Hall graphics, Student Union graphics, Facilities Services Art Studios, Band Tower, Facilities Services Complex graphics, Morgan Hall fire safety upgrades, Dunford Wayfinding, Communications 209 carpet and VCT, and POCAs for Clarence Brown Theatre, Thompson Boling Arena, Allan Jones Aquatic Center, Fleming



Warehouse, Dunford Hall, Henson Hall, Dougherty Engineering, McCord Hall, Estabrook, Goodfriend Tennis, Claxton, McClung Museum, HPER, Thornton Athletics, HPER Swim, and Plant Biotech.

In-House Landscape Architecture



Landscape Vision, NPHC Plots, Project VEGGIE, UT Gardens – Bat House, UT Gardens – Boardwalk, Wayfinding – Building ID, Wayfinding – Parking, Sidewalk repair recommendations, VolShop – exterior signage,

Hoskins Library, Facilities Services Complex, College of Nursing – courtyard, and Dunford Hall landscape.

Process

Big Orange Beacon boxes, interior signage, round table meetings, parking and lane closure procedure, exterior temporary signage policy, City of Knoxville meetings, stormwater general, campus-wide monthly building sprinkler inspections, Archibus Capital Project management test, and evaluations/lessons learned.

Space & Archives

Conference room survey.

Study

Baker Center green roof, College of Nursing (rendering), Walters Life Science (future), Andy Holt Tower garage replacement cost, brick cladding G10, Clarence Brown Theatre restrooms, Plant Biotech green roof, Art & Architecture 101, Art & Architecture windows, Stokely Management restrooms, HPER/Lady Vol Courtyard, and Steam Plant Hill Master Plan.

FACILITIES SERVICES ANNUAL REPORTS

Stormwater Management

2015-2016 Academic Year



Created a Stormwater Best Management Practices Manual.

Completed annual MS4 report.

Installed two rain gardens on campus to more efficiently manage stormwater.

Completed an outfall inventory of 62 campus stormwater outfalls.

Conducted four stream cleanups removing more than three dump truck loads of trash from campus streams.

Planted 1,000 native trees in the Riparian Zone of 2nd Creek.



Created the Stormwater Executive Committee.

Installed four surface water treatment wetlands to manage runoff from a parking area and remove pollutants prior to entering the river.

FACILITIES OPERATIONS

Building Finishes

Paint Services

The Paint Services portion of the subunit has painted common areas and classrooms in 40-plus buildings during the 2015-2016 academic year.

Major projects include Science & Engineering, Student Services for the Human Resources



move, Facilities Services Complex, Greve Hall, and TRECS. Plaster and sheetrock repairs were also completed in several campus buildings.

Sign Services

The Sign Services portion of the subunit has been working on the new Wayfinding signage throughout campus in addition to all other service requests.

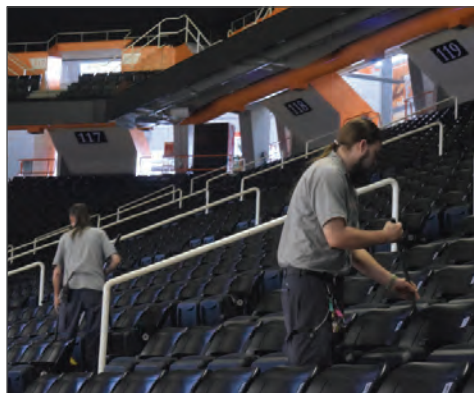
Building Finishes



Throughout the year, Building Finishes has poured and repaired concrete at several buildings, repaired campus sidewalks, and installed items in buildings all throughout the Main and Agricultural campuses. This portion of the subunit also repaired concrete steps, completed block and brick repairs, and installed Wayfinding signage and Cone Zone signs.

Building Services

Accomplishments (July 2015-June 2016)



The Building Services subunit maintains more than 8,000,000 square feet of academic and athletic space for the University of Tennessee, Knoxville and University of Tennessee Facilities around or on the Knoxville Campus. Building Services provides 24 hour-per-day, 7 day-a-week service when and where it is needed. This includes all athletic events, concerts, and University functions.

FACILITIES SERVICES ANNUAL REPORTS



Building Services holds a Cleaning Certification Program for employees which is a 22-week education program on professional custodial techniques.

In the past year, Building Services

has added the following buildings to its cleaning portfolio: The University Center, JIAMS, Facilities Services Complex, Gay Street Art Department, and two Buildings on University Avenue.

The subunit has 13 Supervisors and 260 employees.

Building Services has successfully standardized cleaning products used by the subunit, resulting in reduced inventory levels.

Recycling is an important part of what Building Service employees participate in. During the past year, recycling numbers have grown and solid waste numbers have dropped in spite of the university's continued growth.

Landscape Services

Accomplishments (July 2015-June 2016)



Recipient of the Professional Grounds Management Society "2015 Green Star Honor Award" for implementation of sustained high level maintenance of

the Lake Loudoun Blvd. streetscape corridor.

Implementation of Turf Manager to our horticulture staff professionals.

Development of Facilities Service Snow Procedure guide mapping out essential personnel priorities and responsibilities.

Seasonal Flowers – installation of 20,000 seasonal flowers and 12,000 tulip bulbs.

Developed a campus wide turf fertilization, weed control, aeration, and over-seeding program.

Second Creek Reforestation: Develop and execute plan for native tree and plant installation with student volunteers.

Second Creek Erosion Control: Stabilize and remediate exposed sanitary sewer line on west bank due to erosion.


**20,000
Flowers
12,000
Tulip Bulbs**

Campus wide snow/ice treatment and removal.

Clarence Brown Theatre: Install irrigation and landscape surrounding the new ADA ramp on the north entry of the building.



Circle Park: Assisted contractor with general clean-up and opening the park. On-going turf maintenance and repair during and following football tailgate season. Replacement of seasonal flowers for first home game. Tree pruning throughout park to raise canopies for TN Tailgate.

Philip Fulmer Way: Plant fruitless sweetgum trees and assist Building Finishes with sidewalk repairs.

Panhellenic: Assist Building Finishes with ADA concrete walk installation.

"The Rock": Remove the three-inch thick mat of paint that slid off the rock (3,180 lbs.) and assist Building Finishes with installation of ADA apron.



2000 Sutherland Ave: Removal of old property fence, trees, and brush adjacent to Holston Railroad.

Lake Avenue Parking Improvements: Provide building demolition, site preparation, and landscape improvements associated construction of new parking lots on Lake

Avenue.

Assisted with ongoing campus-wide underground utility repairs (high voltage, steam, water, telephone).

Assist with electric switch gear installation east of Thompson Boling Arena.

Assist with new waterline installation to Steam Plant.

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Assisted HVAC with crane operation for rooftop unit replacements/repairs.

Installation of temporary irrigation mainline for the football practice facility.

Cherokee Farm: Provided year-round landscape property maintenance to include the Knoxville city greenway expansion.

Cherokee Farm: Provide assistance with ground breaking ceremonies.



Emerald Ash borer: Treatment of ash trees throughout campus for protection against EAB.

Sorority Village: Provided landscape maintenance to common areas and eight houses. Corrected malfunctioning storm water retention pond.

Hazardous tree removal

across campus.

Tree pruning as needed throughout campus to provide clearance around security cameras, campus lighting, signage, and bus stops.

Asphalt pothole repair.

Bush hog mowing along non-UT properties adjacent to campus.

Thompson Boling Arena: Remove ten tandem loads of river boulders under west ramp for plaza expansion. Moved rock to Neyland Stadium and Second Creek to correct erosion issues.

Gate 21 Plaza: Assist with repairs to collapsed storm water paving system under plaza.

Facilities Fundamentals: Assisted with landscape instructional video productions.



Landscape Academy: Ongoing development of training and SOP curriculum.

Bailey Complex (west entry): Minor landscape renovation.

Student Services/Communications: Complete landscape renovation and bike parking installation adjacent to north sidewalk.



Campus wide construction: Provided daily support to contractors and Facilities Services to ensure construction quality.

Assist with electric switch gear installation east of Thompson Boling Arena.

Lake Ave. parking lot construction: Complete installation of cross ties for definition of gravel parking lot and convex mirror at intersection near traffic exit.

Pre/Post football game prep and cleanup throughout campus.

Implementation of campus-wide turf fertilization, weed control, aeration and over-seeding program.

Campus-wide street sweeping.

Landscape Irrigation Systems: Monitor, repair, adjust, and winterize campus wide.

Leaf removal: 175 tons campus wide taken to compost site.

175 Tons

of Leaves
Composted

Ayres Hall: Landscape renovation at south entrance and flag pole.

Preparation for visits by UT Board of Trustees, ESPN SEC Nation, and Presidential Candidates (week of Oct. 5th).

Remove old building signs where new ones have been installed.

Min Kao: Conduit installation and landscape repairs along Cumberland Ave. between Estabrook Rd. to pedestrian bridge tie-in.

Coordinate with KUB to minimize impact on campus landscape during gas pipeline install.

Inventory and develop a plan for street tree replacements during winter months.

Inventory rose population in Sorority Village to develop a Rose Rosette virus management plan.

Excavate for new concrete bike pads at Nursing, Pendergrass Library, and Sorority Village.

Sod repairs throughout campus to include Ayres Hall and Blueberry Falls.

FACILITIES SERVICES ANNUAL REPORTS

Staff lot 9/Bailey Complex/Nursing: Dead wood and lower branch removal from mature trees.

UTIA lot S66/65: Replace dead ash trees with more urban-suitable diverse species

Jesse Harris: Repair road collapse adjacent to steam vault.

Facilities Services Complex: Provide crane operation to install exhaust stack on emergency generator. Assist with future landscape planning

Emergency roadway repair in Andy Holt Avenue caused by improper compaction during utility infrastructure improvements by contractor.

Assist with installation of new wayfinding sign at Joan Cronan Way.

Tree cleanup associated with storm events.



Destination Imagination: Assist with preparation.

Dunford Hall: Assist with sidewalk replacement near main entrance. Landscape renovation (north side).

North Concord property: Cut grass around parking lot and spray weeds in pavement cracks.

Blueberry Falls: Coordinate and conduct excavation for steam line repair and concrete/paver walk replacement.

Excavate and landscape northeast quadrant of Nursing College grounds to control erosion and "ponding."

Academic/Research Support

Crops Genetics Building: Assist Plumbing shop with replacement of storm drains from roof.

BESS Building: Assist Bio-Systems Engineering class with installation of storm water rain garden project.

Bailey Complex Addition: Assist Bio-Systems Engineering class with installation of storm water rain garden project.

Dr. Bass Anthropology Facility: Provide storm water diversion away from long-term research area.



Assist Urban Forestry class with basic rope set-up for climbing instruction.

Continue treatment of Ash trees for Emerald Ash Borer and demonstration for Dr. Lambden's Entomology class.

Met an AP Science class from L&N STEM Academy to review Second Creek Reforestation project.

Coordinating talks with Urban Forestry and Facilities Services staff to develop tree inventory data collection tools, i.e. PDA, laptop, GPS and etc.



Assist Department of Civil and Environmental Engineering with installation of silva cell research project on Agricultural Campus.

Tickle Engineering: Provide gravel install to and removal from pits in research lab.

Tickle Engineering: Move railroad track and railcar from Tickle to Middlebrook Building.

Academic Research: Assist the Department of Biosystems Engineering and Soil Science with commercial mower roll-over protection system research.

Training

Landscape Academy: Conduct sessions with existing staff.

Landscape staff holding a TN Dept. of Ag Pesticide Certification attended the Ag Extension Turf and Ornamental Field Day.

Implementation of Tree Care Hazard Assessment and Chainsaw Safety and Operation Policy.

Heavy equipment staff attended OSHA training to include Trench Safety, Trench/Excavation Competent Person, and 10-hour Construction Standards.

Sam Adams: Earned the ISA Tree Risk Assessment Certification.

FACILITIES SERVICES ANNUAL REPORTS

Lock & Key Services

Large Keying Setups

Throughout this fiscal year, Lock & Key Services has had a few large keying building setups with the opening of JIAMS and 1610 University Ave., Facilities Services Complex and the remodeling of Henson Hall. The subunit is also in the process of setting up 1525 University Ave. and the New Orange & White Dormitories. With these moves come vacated areas to be moved into and many lock changes to meet all needs.

Large Scale Projects



Some of the other large completed projects for the fiscal year include the following:

Stokely Management Center: Stairwell exit hardware replacements worn and outdated hardware.

Dougherty Engineering: Exit hardware replacements.

Stokely Management Center: Installing new mullion and exit hardware mezzanine level.

Clement Hall: All locks in building were replaced. The subunit was tasked with removal and replacement of all cores.

University Housing: Move-out and summer conferences have brought substantial lock changes and repairs

Rapid Response Team (RRT)

Spring Cleanup

Spring Cleanup is a special event held for nine weeks annually as an effort to declutter academic buildings by moving items no longer needed. Staff from Rapid Response Team work building by building to help simplify the process. Computer and laboratory equipment, furniture, office supplies, paper files, and more can be recycled, discarded, or sent to UT Warehousing.



In 2016, 3,312 cubic feet of material was recycled, taken to surplus, or disposed of at C&D Landfill.

Special Events

RRT is responsible for setup and teardown of special events on campus. This includes delivery and setup of tables, chairs, stages, and containers for recycling and trash.

During the 2015-2016 academic year more than 700 work requests were performed by RRT.

Surplus Moves

RRT performs moves of unwanted items to the Surplus Warehouse from offices and buildings. The team also moves items requested from the Surplus Warehouse to offices and buildings.



Banners

Installation and maintenance of banners for the Main and Agricultural campuses is the responsibility of RRT.

Relocations

RRT performs whole building relocations and office relocations. New building moves consist of complete “move-in” of equipment, furniture, supplies, and personnel into facilities.

In January of 2016, the Rapid Response Team coordinated and executed all of the associated moves of JIAMS Phase I project. Moves associated with the opening of JIAMS included Dabney-Buehler Hall, Dougherty Engineering, and SERF. All of these moves were completed within 44 days.



FACILITIES SERVICES ANNUAL REPORTS

Classroom “Clean out”

When a classroom is scheduled for a construction project, RRT removes all furniture, desks, etc. from the space and take items to storage until the construction project is complete. Once the project is finished, RRT returns items back to the classroom.

Sanitation Safety

Overview

Sanitation Safety is responsible for Pest Control and Asbestos, Lead, and Mold Abatement for each of the 250+ buildings on and off campus. Each member of the subunit holds multiple State and/or Federal Licenses and Certifications, which requires personnel to complete multiple hours of refresher training per year. Employees also take the opportunity to seek out additional training via workshops and seminars, to try to better their understanding of their own work and to learn how to communicate more effectively with customers.

The subunit is headed by a supervisor licensed by the State of Tennessee as a Commercial Pest Control Operator. Each of the technicians are Certified Basic Wildlife Control Operators and Certified Applicators. Services provided include insect, rodent, feral cats and dogs, termite, bird, odor, and biological control. Sanitation Safety has managed these services on and off campus for more than 35 years. The ARCHIBUS system enables prompt response to trouble calls. Each year, employees process and complete scores of work requests, the large majority of which are self-generated, Preventive Maintenance Work Requests.



2015-2016 Academic Year

2015-2016



2,000
Work Requests

During that last fiscal year, the subunit processed approximately 2,000 work requests. Each building the team is responsible for has either a weekly, monthly, quarterly, or annual treatment, in addition to regular work requests submitted by our customers. While the Pest Control portion of the subunit's staffing numbers have stayed the same, the personnel continue to provide excellent customer service despite the fact

that the square footage they manage has greatly increased.

Asbestos Abatement: Tests have been conducted in all buildings for friable asbestos. The Sanitation Safety subunit abates asbestos if found during a renovation or maintenance project being conducted by the Facilities Services Department. Facilities Operations has two of three individuals on campus who are state licensed as asbestos abatement supervisors, inspectors, designers and monitors.

UT Recycling

Move In

UT Recycling Staff assisted Students and their families during Move-In Weekend by collecting overflow waste, and recovering materials that are thrown away that could be donated or recycled.

Football 2015



Game Day Recycling: UT Recycling recycled a total of 321,490 pounds of material and donated 5,913 pounds of food. They averaged a 66% diversion rate throughout the football season, with a season best of 75% for the last game.

Game Day Challenge: In the SEC (out of 10 school competing) UT place 2nd in Recycling Per Capita, 4th in Waste Minimization Per Capita, 3rd in Greenhouse Gas Reduction Per Capita, 2nd in Organics Reduction Per Capita, and 2nd in Diversion Rate. UT Recycling has the highest total amount of recycling during the course of the whole season out of all schools in the competition.

Volunteers: Anywhere between 60 to 110 hours worked per game by volunteers.



FACILITIES SERVICES ANNUAL REPORTS

RecycleMania



UT ranked 5th overall out of the SEC for the competition, ranked 1st in the SEC for Bottles and Cans recycling, ranked 2nd in the SEC for Cardboard, ranked 2nd in the SEC for Food Service Organics (Composting), ranked 3rd in the SEC for Paper, and ranked 3rd in the SEC for Waste Minimization.

Movie Showings

More than 100 students participated in three movie screenings hosted by UT Recycling.

Paper Purge Party

UT Recycling visited 55 campus buildings during the course of a week.

Public Drop-Off

Increased usage through better promotion and signage. More materials like glass separation were added. Between July 2015 and June 2016, 13,440 pounds of glass was recycled.

Earth Day

UT Recycling held the Recyclympics event as part of the UT Earth Day Celebration.

Sustainability Art Show

More than 75 individuals visited the art show that featured 10 artists.

7 Island Bird Park

The subunit designed recycling signage for the park.

Volapalooza

UT Recycling has 19 volunteers who worked more than 90 hours at Zero Waste Stations during the event. Zero Waste was achieved for the event (90%+ diversion rate).

Move Out

During move-out the subunit gathered 21,000 pounds of donations to GoodWill, 8,378 pounds of carpets were recycled, and 1,260 pounds of food donations were given to Smokey's Pantry.

Destination Imagination

UT Recycling employees were stationed at receptacles during the event and 156.29 tons of material was diverted from regular landfill.



Orientation Breakfasts and Lunches

UT Recycling staff were stationed at every breakfast in Presidential Court and Lunch at the TN Terrace to make the orientations Zero Waste events. Everything was composted and recycled.

Social Media

The subunit's Facebook page increased by 308 likes and Twitter followers increased by 100.

Requests

Between July 2015 and June 2016, UT Recycling completed more than 1,100 requests.

Materials

E-Waste: 13.4 tons of E-Waste.

Universal Waste and special wastes: 37.3 tons of Universal Waste and special wastes properly disposed of. This includes cooking oils, printer cartridges, light bulbs, ballasts, and batteries.



Compost Site: 940.35 tons of material taken in and processed at the UT Compost Site.

Students

UT Recycling employed/ hosted 32 student workers and interns throughout the academic year, paying them a total of \$79,571. This is supporting our own economy by helping them pay for their schooling as well as providing them with valuable work experience and often class credit for working with UT Recycling.

Work Study students earned \$20,927, student workers through Facilities Services earned \$36,570, student workers were paid \$22,074 from the Student Environmental Initiatives Fund, and UT Recycling hosted two AmeriCorps volunteers, Kyle Clemmer and Sarah Murray, who contributed more than 3,500 hours of service.



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UTILITIES SERVICES

Air Conditioning Services

Overview



The past year has seen many major improvements to several HVAC systems serving all areas of campus and off-campus auxiliary buildings. Major equipment repair and replacement along with regular and requested maintenance and repair items. The subunit continually supports athletics, food service areas, and research laboratories in multiple areas of campus with service and repairs.

All mechanics on staff are EPA-registered and certified to properly handle refrigerant gases and are trained to perform complicated repairs on essential equipment. The controls group maintains, repairs, and replaces building automation controls (BAC) in all campus buildings including pneumatic and electronic.



Air Conditioning Services also performs hydronic and air balance services to help each system operate at peak efficacy to help save energy. The water treatment team is responsible for water quality in all closed and open hydronic water systems as well as maintaining all of the equipment necessary for chemical distribution. They also have to comply with state and federal regulations in the handling of chemical products. The personnel in Air Conditioning Services are on call to respond to any emergency on campus at any time.

Major Projects

Listed below are some of the major projects we have completed in the past year.

Replaced obsolete cooling towers on the Reese Hall Chiller building with towers salvaged from the University Center demolition.



Installed new secondary chilled water pumps serving the Dougherty Engineering building. Two pumps were installed in place of one original pump for redundancy to prevent loss of service to the building.

Overhauled and replaced thrust bearings in the drive motors of chillers # 1 and # 2 at the Plant Biotechnology building.

Installed four new ceiling mounted mini-split systems in classroom 104 at the Jessie Harris building so noisy, in-the-wall units could be removed.

Salvaged chiller from demolition of University Center and installed it in place of chiller # 1 at the SERF Chiller house as an upgrade of existing equipment.

Removed existing obsolete DX system in room 223 of Perkins Hall and replaced it with a chilled water unit, which increased energy savings for this area.

Installed new motor, gearbox, and propeller in Haslam Building cooling towers located on the roof of the building.

Performed complete rebuild to chiller # 1 at the SERF chiller house.



Installed new chiller and pump in the International House and re-piped the chilled water loop in the building to insure proper water flow.

Installed new chiller in Hodges Library basement.

Removed existing obsolete DX system in room 31 of the HPER building and replaced it with a chilled water unit which increased energy savings for this area.

Installed new heating water pump serving the dining area of Thompson Boling Arena.

Repaired obsolete control system in the Joe Johnson Animal Research building.

Replacing obsolete VAV controllers in the Dabney Buehler Hall.

Upgraded building controls at 1610 University Ave Building.

FACILITIES SERVICES ANNUAL REPORTS

Performed repairs, replacements, and adjustments to Phoenix environmental controls serving laboratory areas of research buildings.

Assisted contractor with completion of controls replacement project for AHU's and process water at the SERF building.

Replaced and repaired multiple steam-operated heat exchangers used for heating water in buildings on campus.

Replaced and installed several replacement coolers and freezers in multiple Aramark food service facilities on campus.

Electrical Services

The projects described below are currently in progress.

UT Main Substation – Gas Insulated Switchgear



Utilities Services is scheduled to replace the main 18th Street Substation outdoor infrastructure with Gas Insulated Switchgear (GIS) at the end of fall 2017. This project was the concept of Facilities personnel

and will greatly improve the appearance and operational safety of the facility and will virtually eliminate unscheduled outages due to animal incursions and extend maintenance cycles from 2 to 5 years, lowering frequency of schedule outages due to maintenance.

Electrical System Design

Facilities personnel are always reviewing 13.2KV electrical distribution system design for efficient and reliable performance of normal and emergency operations. This leads to improvements as new padmount switchgear standards and installations, implementa-



tion of DOE 2016 transformer standards, and other enhancements which greatly increases reliability and flexibility of present and future systems, allowing easy expansion for future projects and power demands. The Utilities unit could not make these improvements without the intimate historical knowledge, passion and vision of the personnel involved with the daily management and operation of the system.

UT Laurel Substation Expansion



Utilities Services is scheduled to install the second phase expansion, of substation distribution infrastructure at Laurel substation with Gas Insulated Switchgear (GIS) at the end of fall 2016 to accommodate future demand by new projects north of

Cumberland Avenue. This expansion will also reduce power loading of existing distribution circuits and will allow for redundancy of the electrical distribution system, increase overall reliability and reduce the possibility of unscheduled outages for all campus properties. The concept for this expansion was incorporated into the original building design by Facilities personnel with a vision toward improvements and understanding of the Campus Master Plan. This approach reduced the overall complexity and cost of the implementation/construction of new electrical distribution system equipment.

Emergency Feasibility Study

A feasibility study for regional generation of power for the campus distribution system during times of extreme emergencies has been completed and it is waiting for approval and funding. This plan would allow the campus to operate as a microgrid, detached from the electrical utility during periods of curtailment or major system failure from the utility thereby providing power to students housed on campus and mitigating losses of major research. The implementation of this emergency microgrid would improve the emergency planning options and possibly allow for future paralleling with the local electrical utility for demand response thereby reducing electricity rates by giving FS Utilities the option to participate in energy saving programs. This opportunity would not be available without the intimate system knowledge of Facilities personnel.

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Supervisory Control and Data Acquisition

A SCADA (Supervisory Control and Data Acquisition) is currently being installed with expansion planned to improve distribution system management, monitoring and control. The first step in expanding and implementing this technology is the installation of radio communication system and new metering for both electricity and water, which is currently underway. The ultimate goal of this system is to improve the acquisition of data for energy management and to greatly reduce or eliminate the possibility of unscheduled outages due to better monitoring and system redundancy.

New Internet Based Building Access System – Campus Wide

There is currently an ongoing project to install new Building Access hardware and software, campus-wide, internet based, to improve field communication, security and access management. The new system will allow campus personnel to quickly interface building access and real time video for faster security response.

Steam Plant

2015-2016 Academic Year

New windows are to be installed.

New roof over the boiler room.

Dealkalizer installed.

New softener control valves installed.

New high pressure gas line installed.

High pressure gas heater installed.



New Scada system installed for monitoring of new gas line.

Stack removed.

Parking lot was patched after stack removal.

Coal shed removed.

Coal scale house removed.

New feed pumps installed.

Modifications made to condensate tanks to allow for chemicals to be added and start-up of dealkalizers.

Modifications were made to DA tanks to allow for chemical to be added.

New isolation transformers were added to suppress noisy control signals.



New steps were added to allow for access to upper level.

New roof exhaust fans were added to remove heat around boiler # 5.

New concrete slab was poured for future fuel oil tanks.

A new sidewalk was poured and grass was installed at the entrance to the steam plant office area.

Still removing old coal handling equipment.



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ZONE MAINTENANCE

With the reorganization of Facilities Services in 2012, more resources have been provided to Zone Maintenance personnel empowering them to perform more tasks without being required to call on others. This has provided more efficient and effective service to the campus community.

One Call Shift

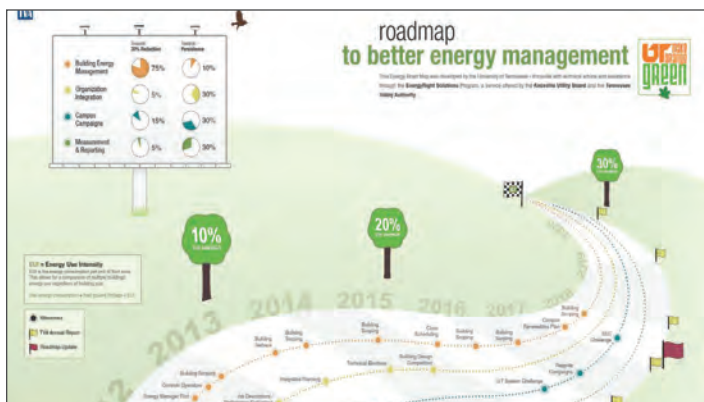
The Zone Maintenance One Call shift is in full operation except for the day shift on Saturday.

There is a minimum of two people on site at all times during the shift. Having two individuals on site gives the unit a better ability to handle repairs requiring more than one person and personnel are better able to handle repairs during busy times. One person can stay with a problem while the other handles calls. "Droppable" tasks are assigned for slow periods.

This shift also provides enhanced off-hour coverage for the Zone Maintenance unit. Three people are assigned to each shift (first, second, and third.) These shifts rotate seven days on, four days off, eight on, two off, and repeat every fourth week.

STAR Team (Special Team to Assist Research)

The STAR Team is a specialized team responsible for providing a more focused service function to the research community. This is accomplished by assisting new researchers, assisting existing researchers, with changes in programming requirements and assisting existing researchers with day-to-day problems that may arise.



This team also took over the responsibility for the TVA Energy Road Map which includes energy auditing of buildings, and is leading the way to predictive maintenance techniques with vibration analysis, shaft alignment, and thermal analysis.

STAR Team also takes the lead in developing projects for the Student Environmental Initiatives Revolving Fund. The Team has identified several projects with expenditures nearing \$250,000 and savings of over \$150,000 per year. These savings route back to the Fund to allow funding of additional utilities savings projects.

Emergency Management

Zone Maintenance continues to take an active role in campus emergency management. Zone Maintenance personnel take an active daily role in emergency management, serving as emergency planning coordinators. In this role, the Maintenance Specialists take the lead in emergency response on a building-by-building basis, working with emergency responders to help assure the safety of the building occupants.



In addition, some Zone Foremen are serving as Zone Coordinators and are tasked with a more overarching role in emergency response. As other individuals rotate out of Zone Coordinator appointments, more of these positions will be filled by Zone Maintenance.



The unit has also purchased and provisioned meals ready to eat, water, safety equipment, heaters, emergency generators, and other equipment that might be necessary during an emergency. Zone Maintenance also recently purchased

a 1,000-gallon trailer-mounted fuel tank. This trailer will be used to deliver diesel fuel to emergency generators and other equipment on campus during an emergency.

Zone Maintenance personnel also serve on the Emergency Management Task Force, which writes the emergency management response plan and coordinates with other groups to prepare for disasters. Working relationships have been established with university,

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city, and country police departments, fire departments, and rescue teams. On campus, these relationships extend to housing and student life personnel.

Zone Maintenance Inspections Initiative



Building inspections encompass several different levels. Three employees have primary duties of inspecting the condition of buildings and employee performance. Senior-level employees are used in this initiative in order to provide on-the-spot training should any deficiency arise. Having this responsibility at a senior level also

provides the opportunity to rotate the responsibility to different employees even in the event of vacancies or searches.

Other inspections are completed using a peer network of Maintenance Specialists. This entails Maintenance Specialists in neighboring locations inspecting each other's buildings. This network can be increased so that foremen also inspect each other's buildings, etc. These inspections are used to combat situations in which a person in the same environment for a period of time may become accustomed to seeing certain issues, and may therefore cease to recognize problems.

Zone Maintenance Smart Devices

With the Archibus system, smart devices, such as tablets, are being issued to most employees. This allows them to receive and report on work assignments, request parts, and also request support. All of these tasks can be completed from the field without the need to be tied to a desktop computer.



Building Level Authority



A major initiative, in concert with the Archibus system, is that issues encountered by customers are routed directly to a building's Maintenance Specialist

without the need to route through several levels of review. This results in quicker problem resolution and reduces the workload on several levels of review while decreasing the number of responses required from central shops.

Providing Maintenance Specialists with more building level authority reduces the number of work requests generated by Zone Maintenance to the central shops.

Critical Parts Inventory

The unit will begin to keep deeper inventory parts on hand for equipment that has critical impact on the campus, especially if it is a piece of equipment where long lead times can hamper operations for a longer period of time.



Zone Maintenance Career Ladder

Revise career ladder to allow movement to higher levels based on demonstrated skill coupled with test and/or certifications.

Customer Service Training

All throughout campus Zone Maintenance employees are complimented on the exemplary job that they do and the quality of service that comes from the group. Still, the unit has a desire to take the level of service even higher.

In 2015 Zone Maintenance employees completed a series of customer service training conducted by UT Employee and Organizational Development (EOD).

This training was tailored specifically for Zone Maintenance and addressed standards and best practices to use as personnel interact with the campus community. Another goal of the training was the encourage uniformity in how Zone Maintenance personnel respond to customers and how customer concerns are handled.

Zone Maintenance Initiatives Summary

Initiatives have an emphasis on improving services to the campus.

Improved training from Inspection and Zero Failures initiative will result in fewer equipment failures going forward, resulting in lower costs and better service to the campus.

Improved training will ultimately result in fewer employees per square foot, lowering costs.

Redistribution of zones will begin the process of lowering the employee-to-supervisor ratio, resulting in lower costs.

Overall, these inspections will help the Zone Maintenance unit to provide better service to the campus community. The following are the expectations of the initiatives.

Inspectors will notice things others may have become used to seeing.

FACILITIES SERVICES ANNUAL REPORTS

Emphasis is not necessarily employee performance.

Inspectors will be able to point out needs (training, materials, and tools) and potential deficiencies in materials and workmanship.

Improvements in performance, if needed.

Foremen, repurposed from existing positions, will be able to identify training needs and provide training, when able, on the spot and at the time the deficiency is found.

Foremen are designing the program from scratch. The scorecard, similar to restaurants, will be on display in the building.

Equalization for basic building condition (i.e., employee score not penalized due to building deferred maintenance conditions outside of employee's authority to correct).

Rewards for excellent scores and build a greater sense of pride.

Zone Maintenance Zero Failure Initiative

The Zero Failure Initiative within Zone Maintenance is a focus on certain components and/or modes of failure that should not be expected if normal expected maintenance is performed. Zero failure does not automatically point at the Maintenance Specialist, but will require an evaluation of the failure in each of the categories to determine if failure is a result of a manufacturing or design flaw, misapplication, needed training, poor performance by a Maintenance Specialist, or other.



The goal of this initiative is to minimize these failures by improving the quality of materials and tools the unit receives, improving the training if that is determined to be the root cause, and improve employee performance where indicated.

The desired outcome of this program is to investigate any failures categorized into the zero failure category and determine why a given failure occurred. Such investigations may uncover a need for additional training or tools, in addition to parts or equipment performance.



To date this initiative has identified training needs for employees that were repurposed from others areas of Facilities Services. This has culminated with ZM allowing other seasoned employees to spend more time mentoring the employees new to these tasks. We were also experiencing pre-mature bearing failures in air handlers in one of the newer buildings. We have provided additional training for installation procedures, and are transitioning to a different bearing manufacturer.

Zone Maintenance General Initiatives

Square footage per employee was low in comparison to peers. To improve this ratio the unit was not filling positions as they became vacant.

Employees per supervisor is low in comparison to peers. ZM has improved this by moving three foremen to non-supervisory roles and will further improve as vacancies occur.

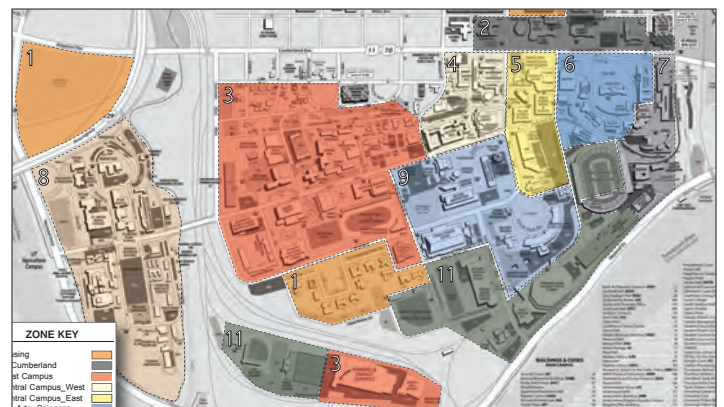
Budgets will be tight in the coming year(s).

A redistribution of zones included the combination of Zone 2 with Zone 4 and 5, the expansion of Zone 9 into Zone 3, Zone 3 becomes outlying buildings, and Zone 8 absorbs One Call Shift personnel. These changes freed up two foremen for inspections.

ZM is now well within the ratio of our peers and we are filling positions as they become vacant. We are continuing to evaluate this ratio and will make adjustments where we see the need.

Zone Maintenance & Archibus

The Archibus management system provides Zone Maintenance with information the unit has not had in the past. It is able to provide the management data and reporting the group did not have access to. With the system, work requests are routed directly from the requester to the personnel in the buildings. This direct routing results in shorter response times. Requesters will be able to provide feedback on how their request was handled. In addition, requesters will also be able to track the progress of their work request.



APPENDICES

A

SIGHTLINES

B

APPA FPI REPORT

APPENDIX A - SIGHTLINES

Sightlines: Helping educational facilities better manage their facilities investments

Return on Physical Assets (ROPA) Report for 2015 – Benchmarking and analysis to provide peer comparisons and a more informed allocation of resources, reduction in operating costs, and improvement in service.



Peer Institutions



Peer Institutions (SEC)

Louisiana State University
Mississippi State University
The University of Alabama
The University of Mississippi
University of Florida
University of Kentucky
University of Arkansas
University of Missouri



Comparative Considerations

Size, technical complexity, region, geographic location, and setting are all factors included in the selection of peer institutions

APPENDIX A - SIGHTLINES

A Vocabulary for Measurement

The Return on Physical Assets – ROPASM



The annual investment needed to ensure buildings will properly perform and reach their useful life
"Keep-Up Costs"

Annual Stewardship

The accumulation of repair and modernization needs and the definition of resource capacity to correct them
"Catch-Up Costs"

Asset Reinvestment

The effectiveness of the facilities operating budget, staffing, supervision, and energy management

Operational Effectiveness

The measure of service process, the maintenance quality of space and systems, and the customers opinion of service delivery

Service

Asset Value Change

Operations Success

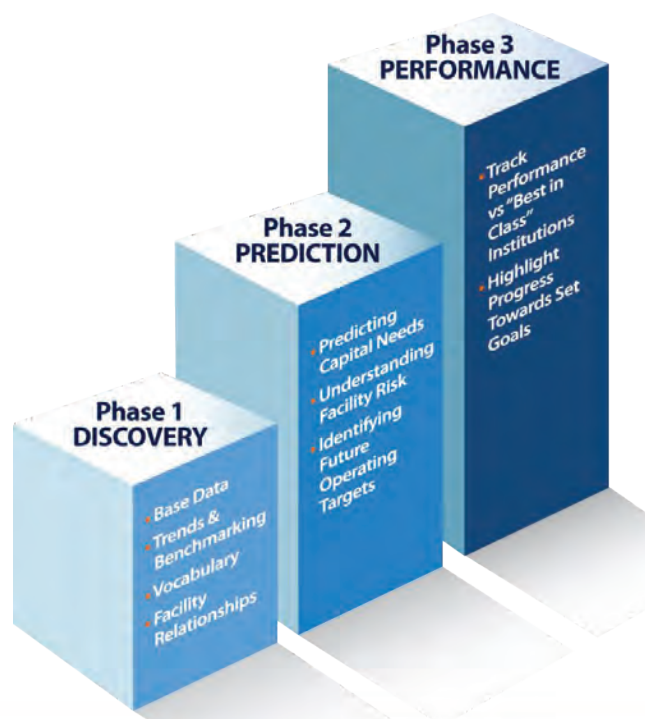
Peer Institutions



Institution	Location
Auburn University	Auburn, AL
Louisiana State University	Baton Rouge, LA
The University of Alabama (Tuscaloosa)	Tuscaloosa, AL
The University of Mississippi	Oxford, MS
University of Arkansas	Fayetteville, AR
University of Florida	Gainesville, FL
University of Georgia	Athens, GA
University of Kentucky	Lexington, KY
University of Missouri	Columbia, MO

Comparative Considerations

Size, technical complexity, region, geographic location, and setting are all factors included in the selection of peer institutions



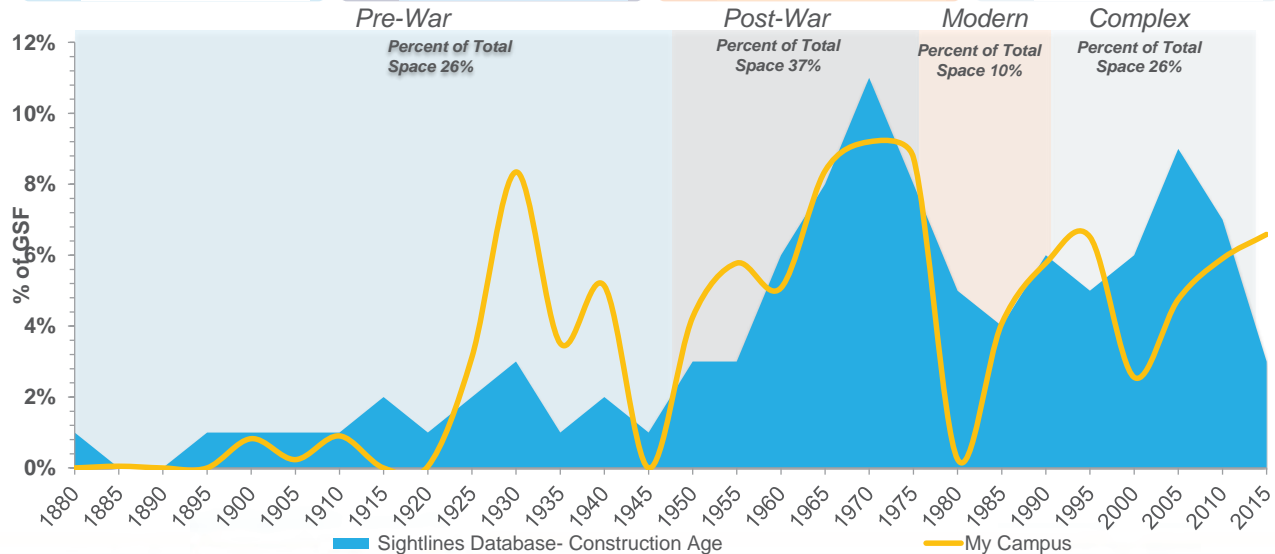
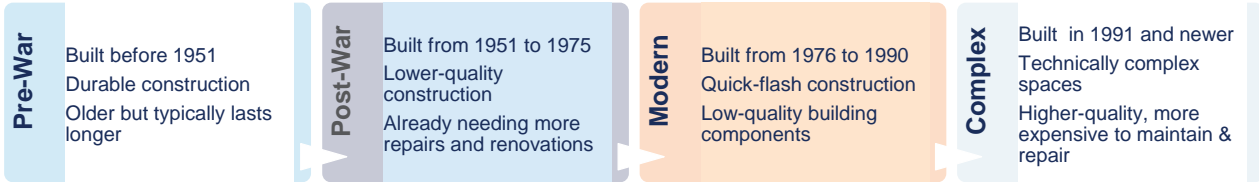
APPENDIX A - SIGHTLINES

Putting Your Campus Building Age in Context



FACILITIES SERVICES

The campus age drives the overall risk profile

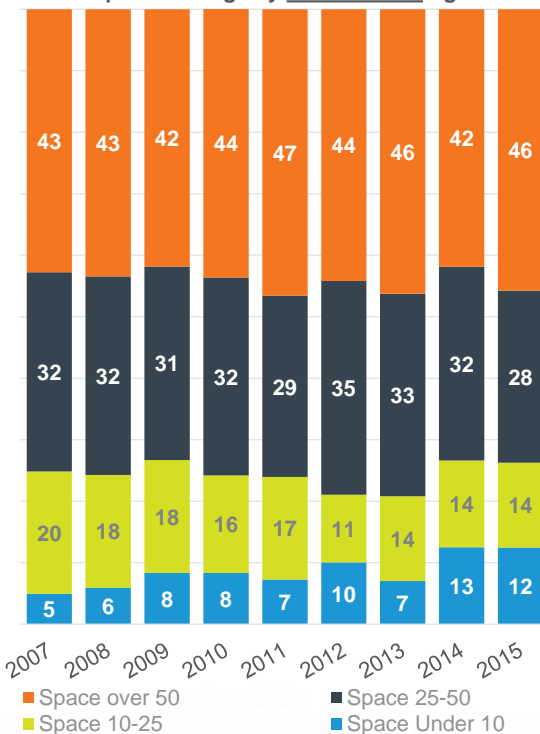


Younger Campus Through Renovations

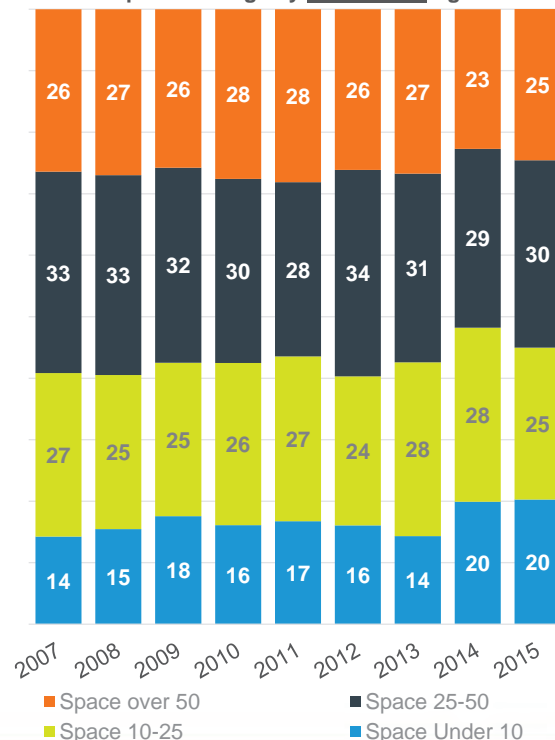


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Square Footage by Construction Age



Square Footage by Renovation Age



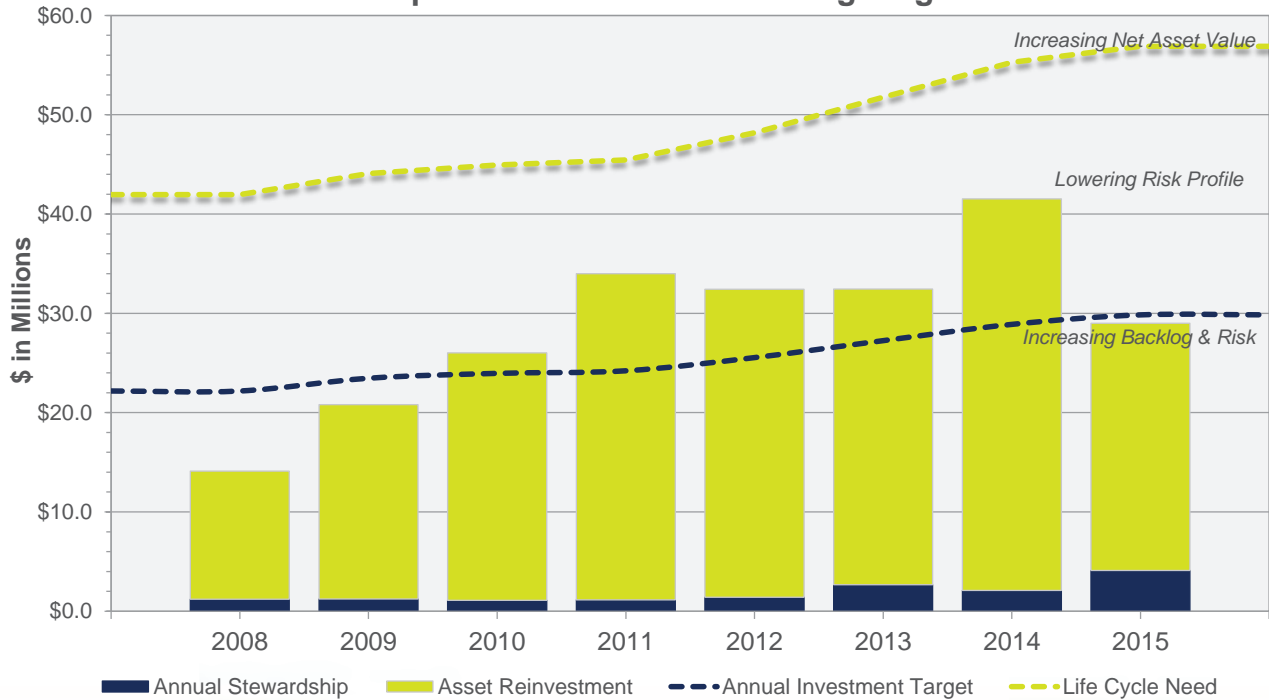
APPENDIX A - SIGHTLINES

Total Capital Investment vs. Funding Target



Meeting Target For Past 5 Years With One-Time Dollars

Total Capital Investment vs. Funding Target

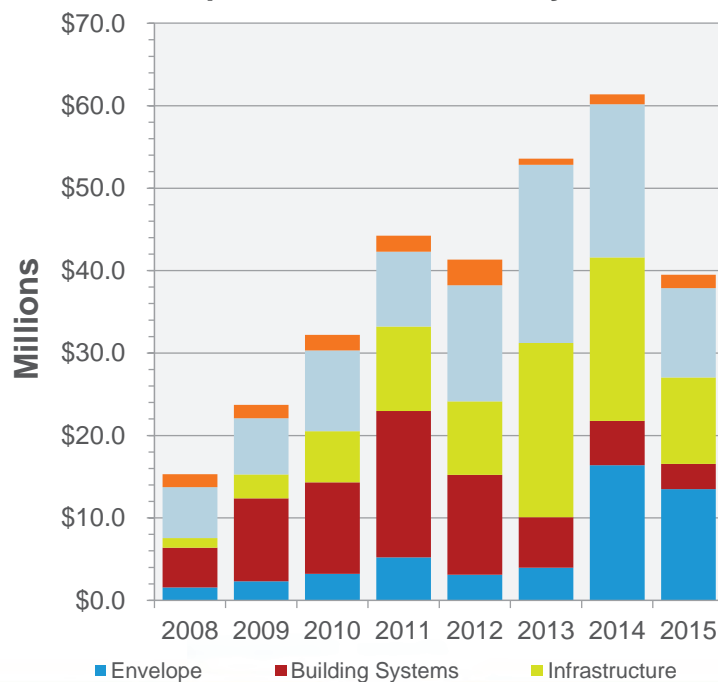


Total Project Spending by Package

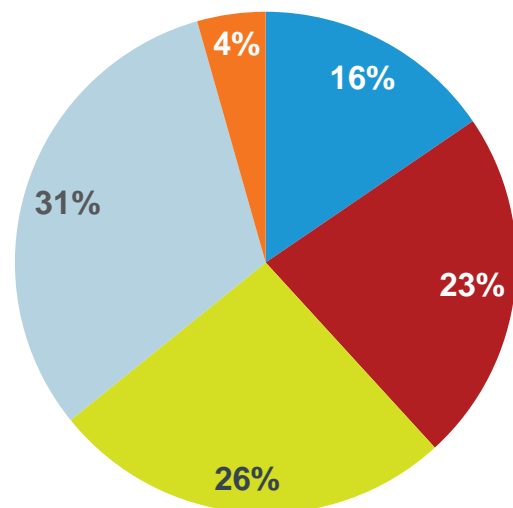


Switch Focus of investments in the future?

Capital Investment Mix by Year

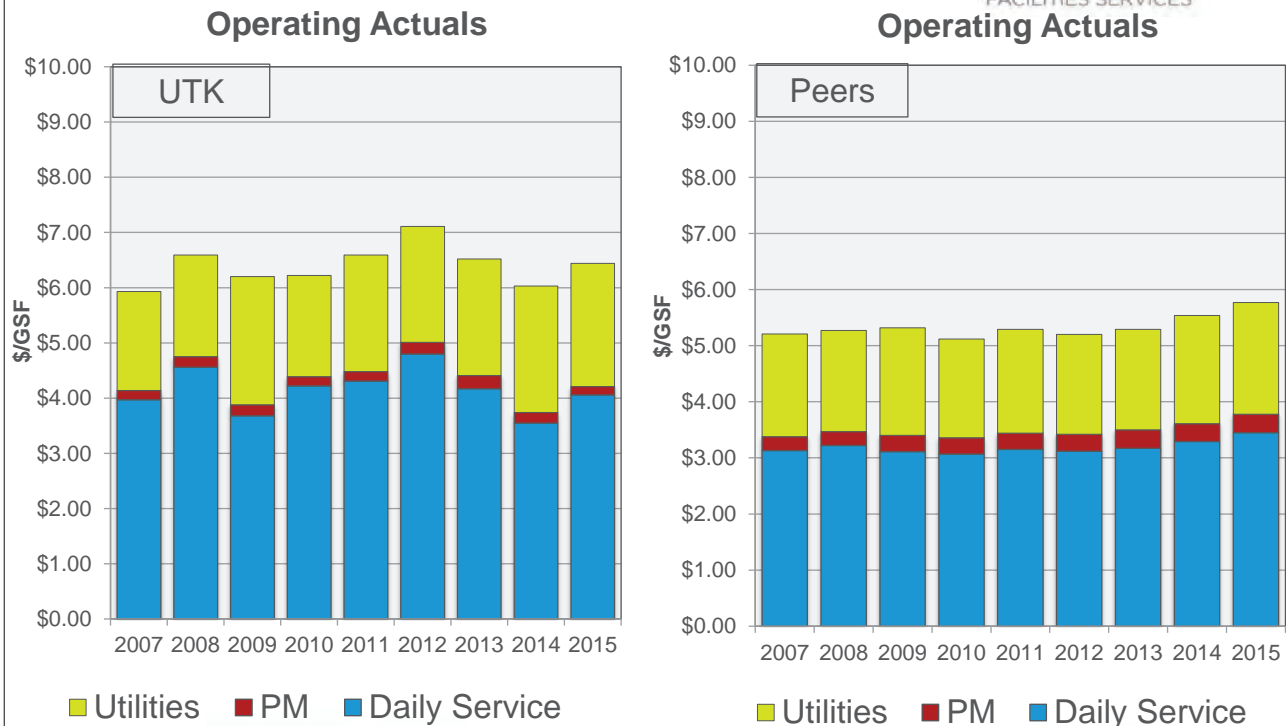


Total Investment Mix



APPENDIX A - SIGHTLINES

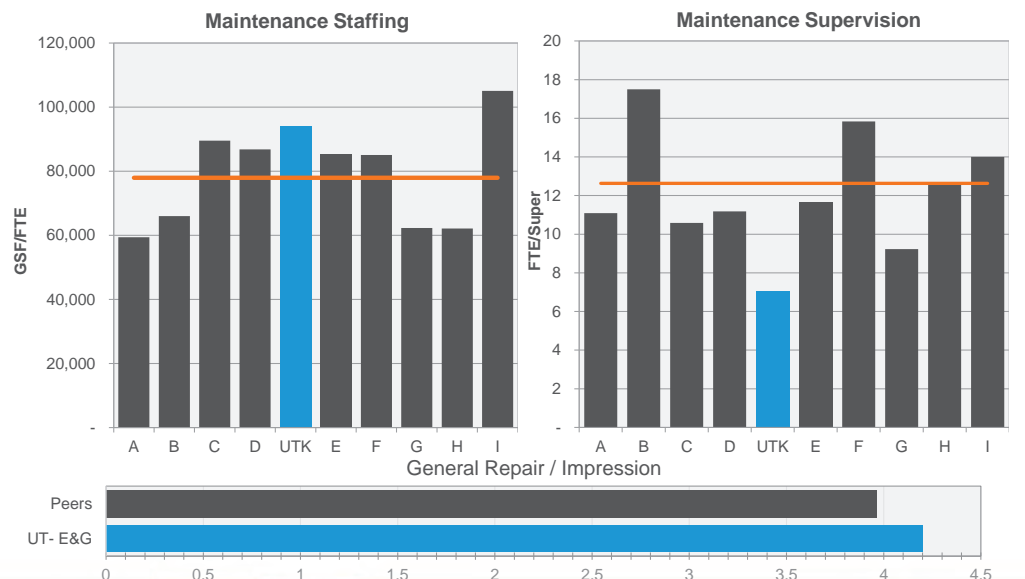
Operational Spending is inline with Peers



Maintenance Performance



Fewer maintenance staff than peers, with higher supervision



Maintenance Staffing - We are currently below peers in number of personnel per square foot. We are in the process of reviewing our present status to determine if we are at the correct ratio for UT Knoxville.

Maintenance Supervisors - We are currently below our peers in employees per supervisor. We are working to improve this ratio by reducing the number of supervisors and increasing the number of lead personnel.

APPENDIX A - SIGHTLINES

The following three graphs together show the remarkable improvement of our Custodial (Building Services) team effectiveness from the beginning (in 2012) of the transition from out-sourced services to the completion (in 2015) of the transition to in-house services.

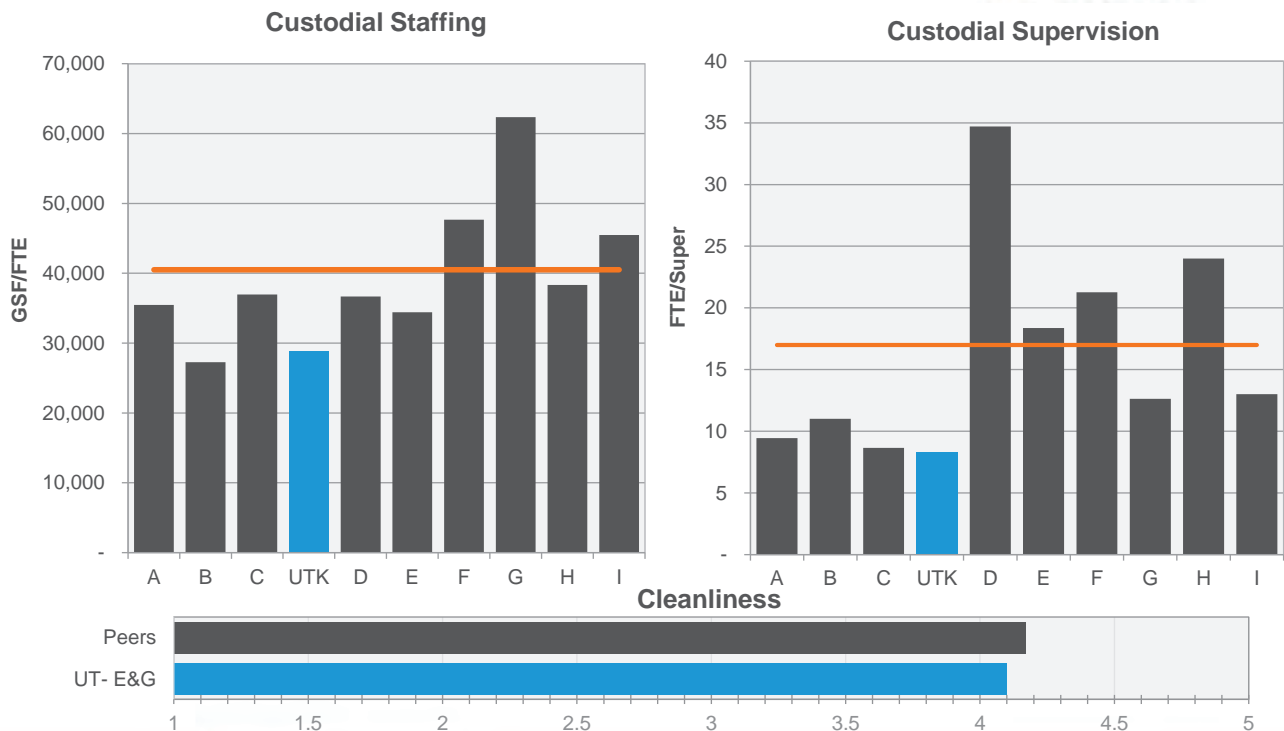
That effectiveness shows an impressive increase in not only the number of square feet serviced by each custodian, but also in the number of custodians managed by each supervisor.

The performance has resulted in a significant increase in very positive reviews from the campus community about the appearance and cleanliness of campus facilities. In fact, our cleanliness scores have increased from below our peers (in 2012) to above our peers (in 2015). This transition has proven to be an outstanding success.

Custodial Performance – FY2012



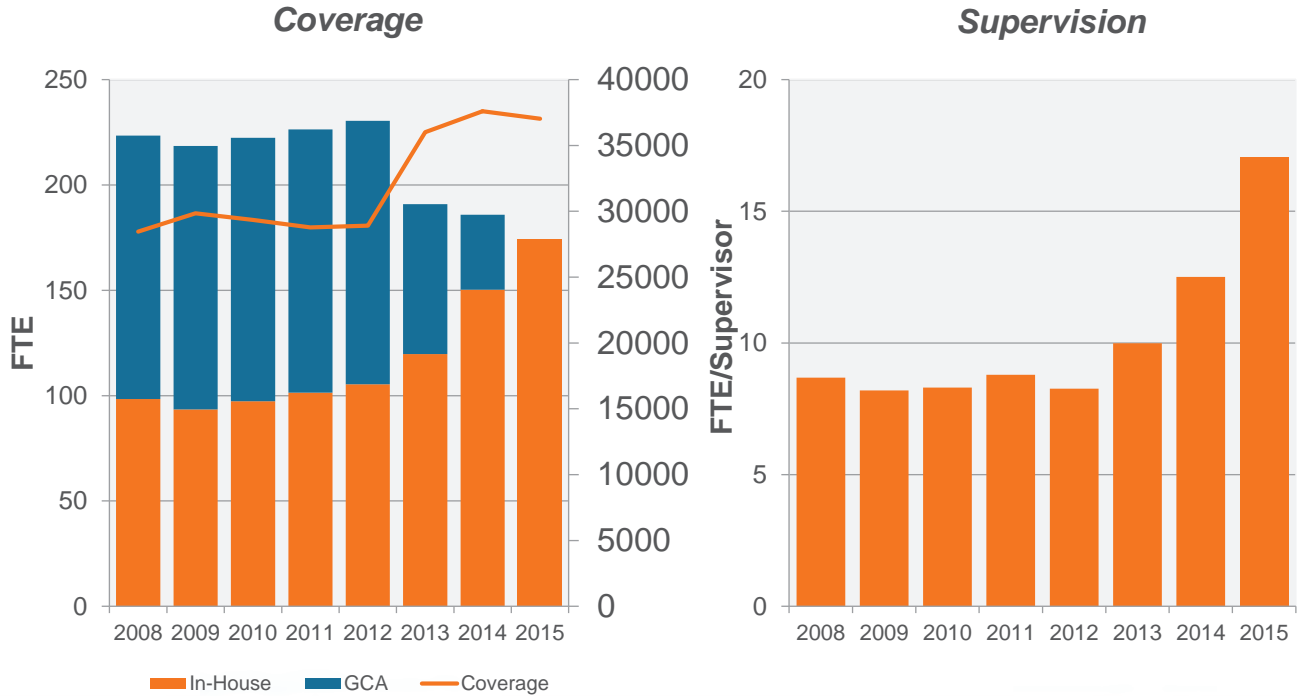
In 2012, Custodial presents room for improvement



APPENDIX A - SIGHTLINES

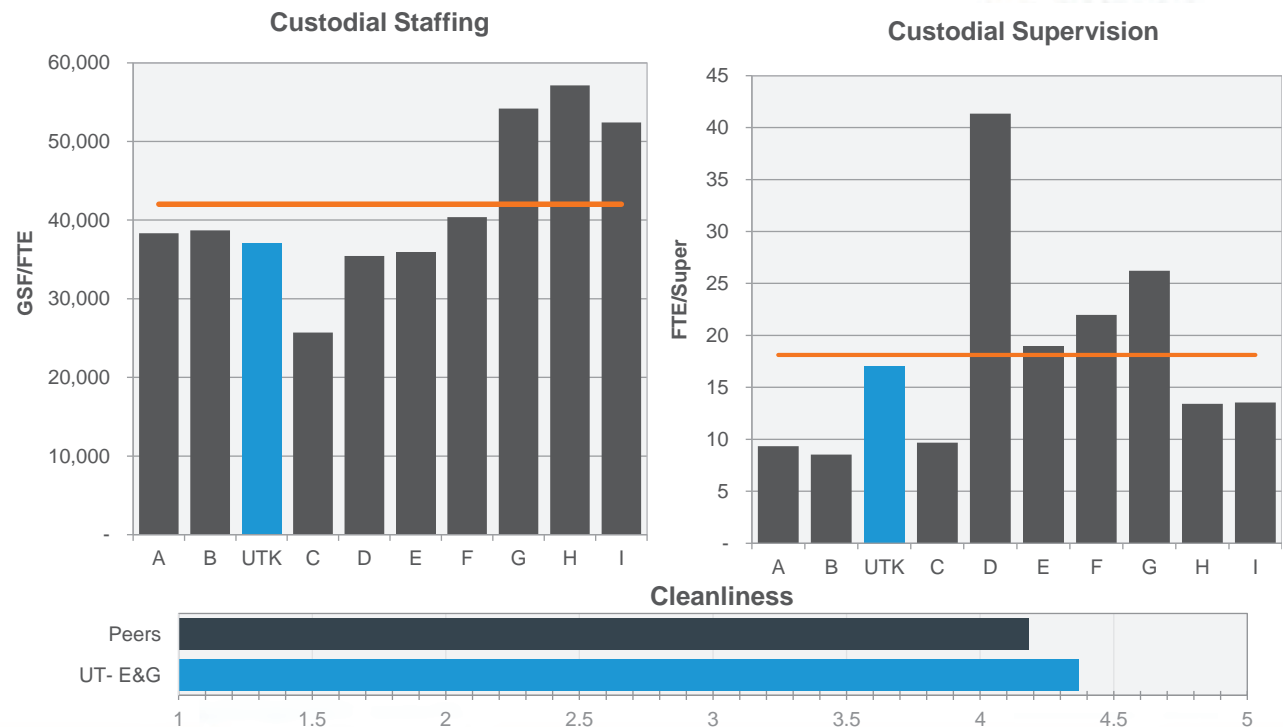
Custodial Transition

Increased custodial efficiency as custodial transition in-house

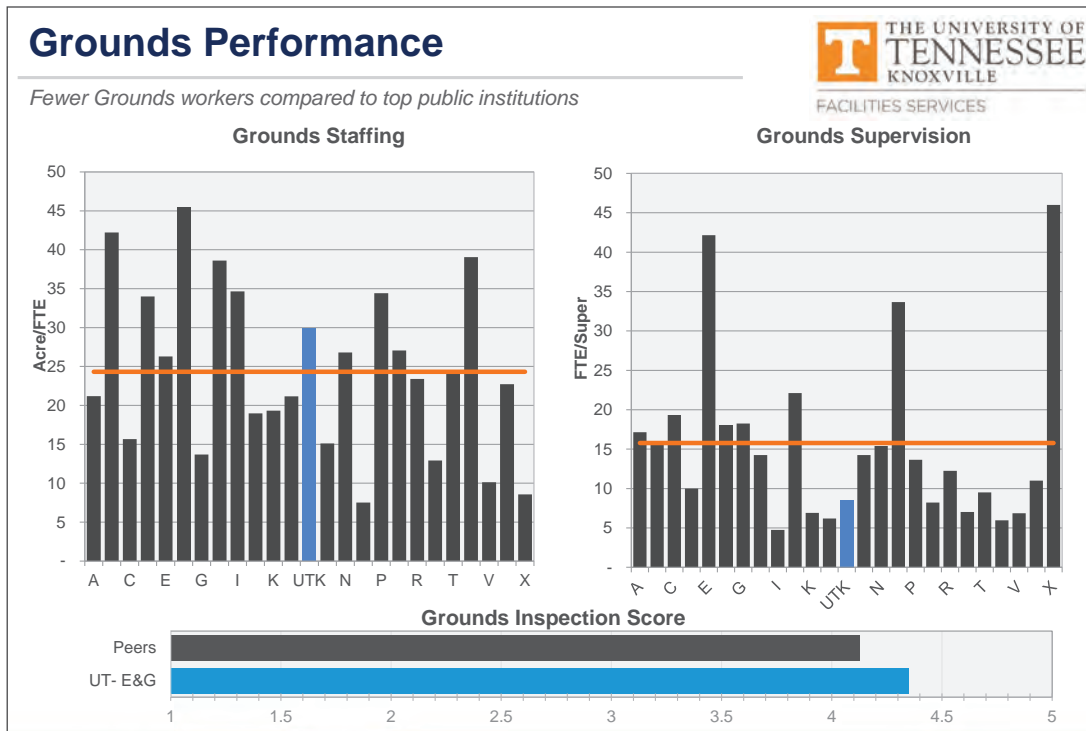


Custodial Performance 2015

Custodial Metrics are in line with peers, producing better results



APPENDIX A - SIGHTLINES



This chart shows UT Knoxville with fewer employees per supervisor than our peers. That is due largely to an initiative to address the landscaping needs of the UT Knoxville campus. New professional positions were added to our team with an Arborist, a Landscape Manager, and a Turf Manager, all of which are supervisory/managerial positions. This initiative is reflecting steadily higher inspection scores and increasingly positive comments from the campus community.

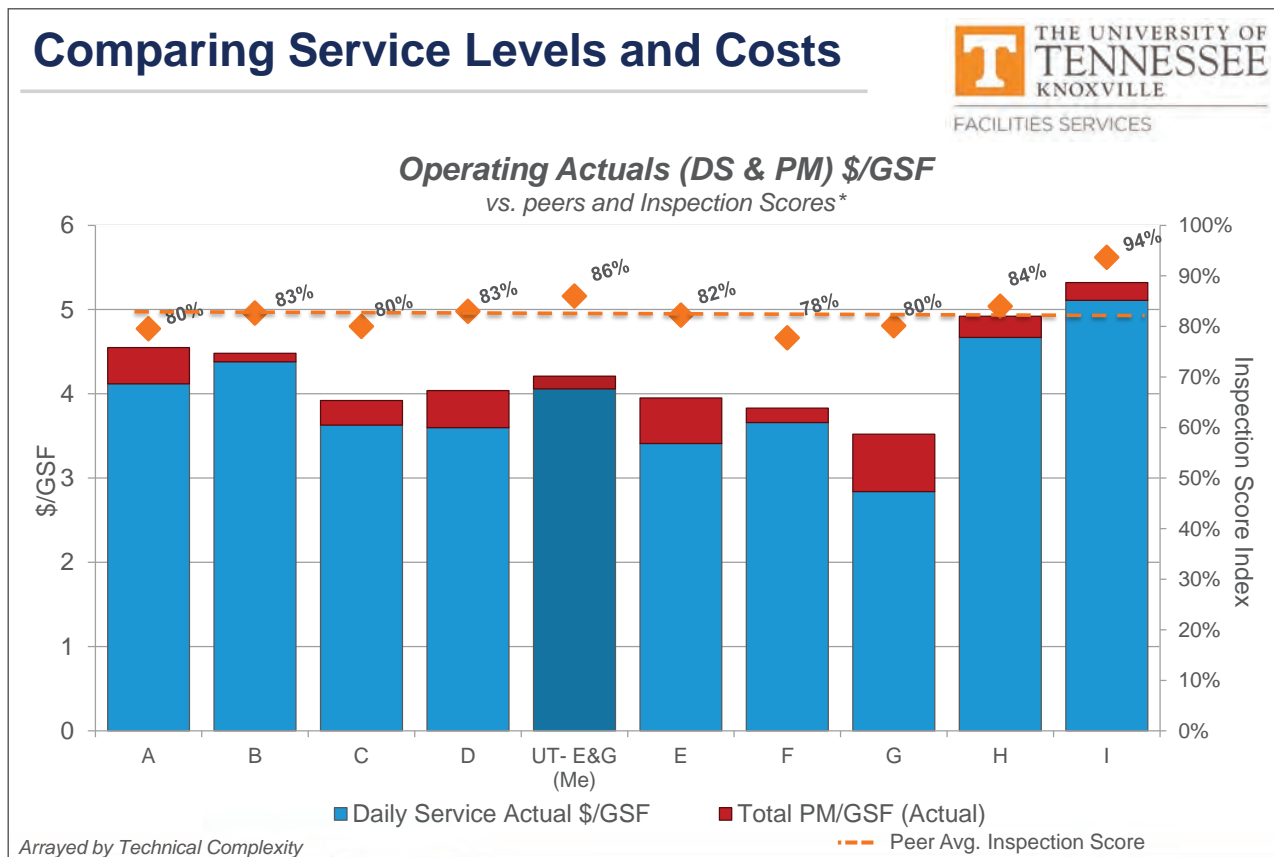
Campus Inspection Index & Scores



Campus Inspection Index

Inspection Breakdown

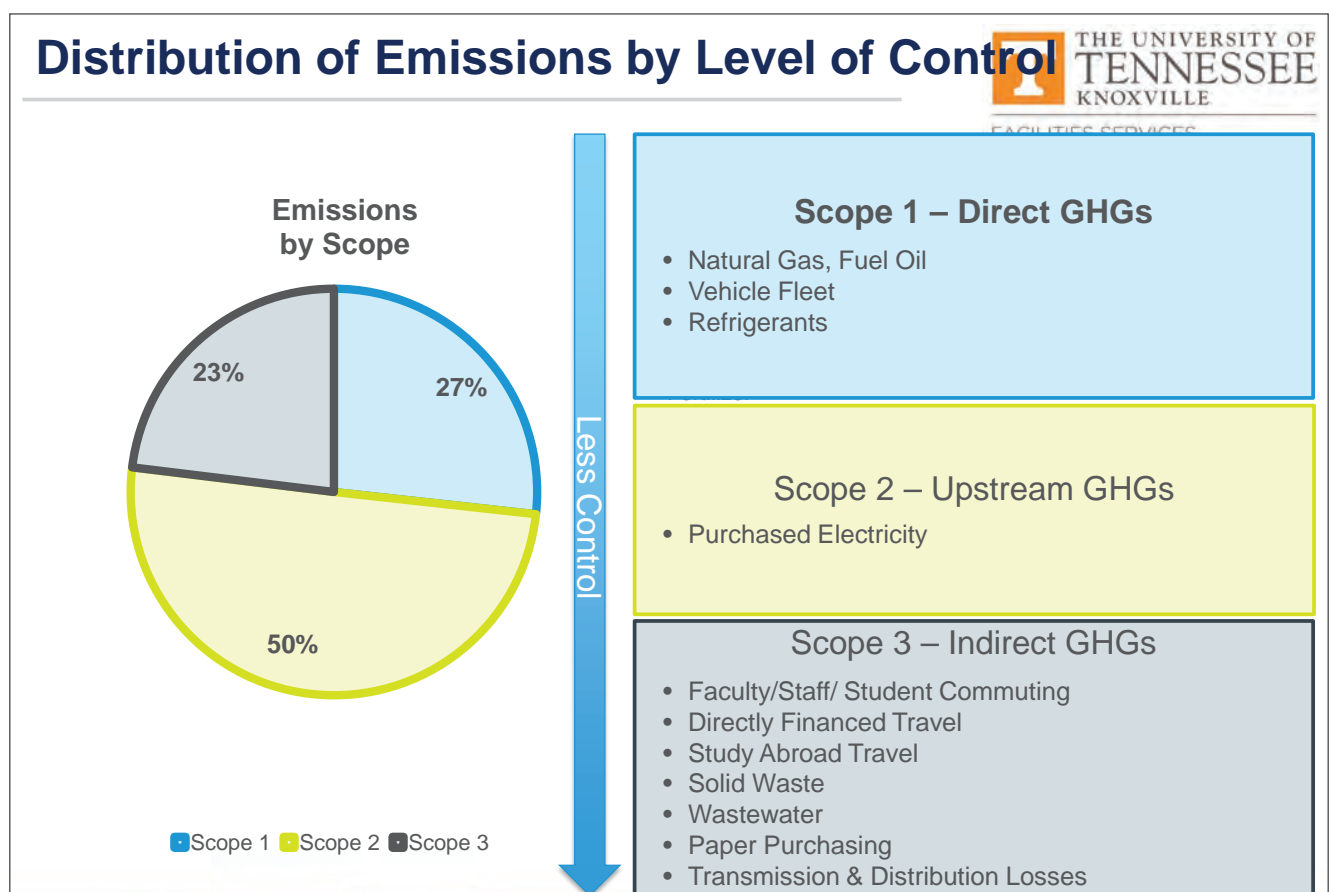
APPENDIX A - SIGHTLINES



Comparing Service Levels and Cost – This chart shows that UTK’s ratio of Preventive Maintenance to Daily (On Demand) Service is very low. While our current PM work is less than our On Demand work, the extreme difference in the chart is largely due to inaccurate classification of work at the time the work order is entered. We are in the process of addressing the issues as follows:

1. Additional, more targeted training is being developed for employees involved in the entry of work requests/work orders in the Archibus CMMS system. Training will begin ASAP.
2. A plan is underway to perform an additional, extensive, campus-wide, inventory of all equipment and facilities needing periodic preventive maintenance.
3. Detailed preventive maintenance (PM) schedules are being prepared.
4. All that data will be entered in the Archibus CMMS system which will auto-generate the scheduled PM orders with the correct work classifications.

APPENDIX A - SIGHTLINES

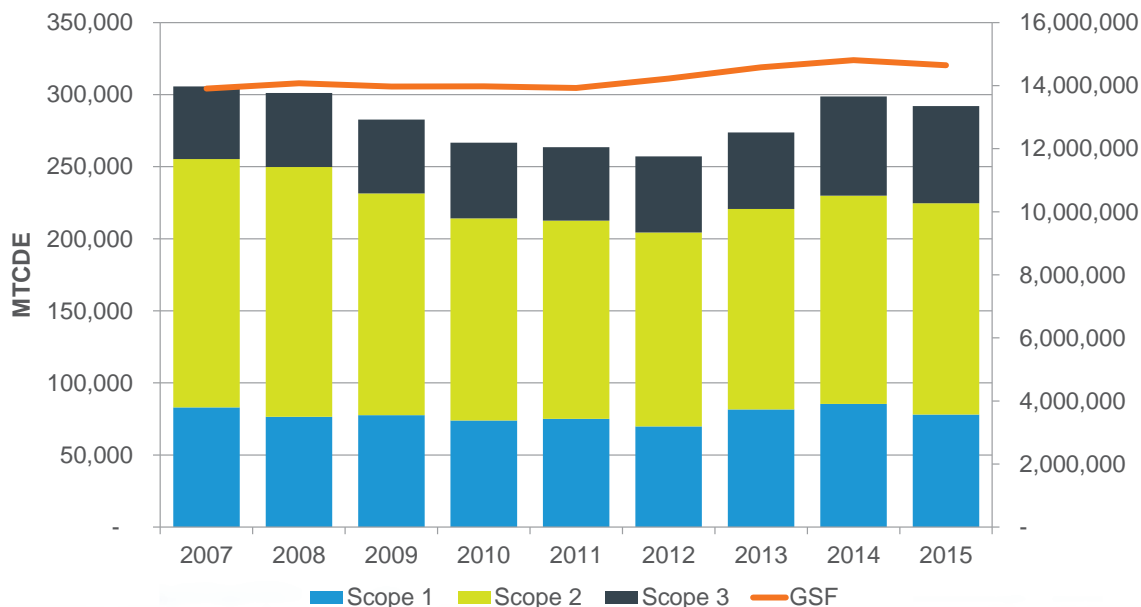


APPENDIX A - SIGHTLINES

Gross Emissions



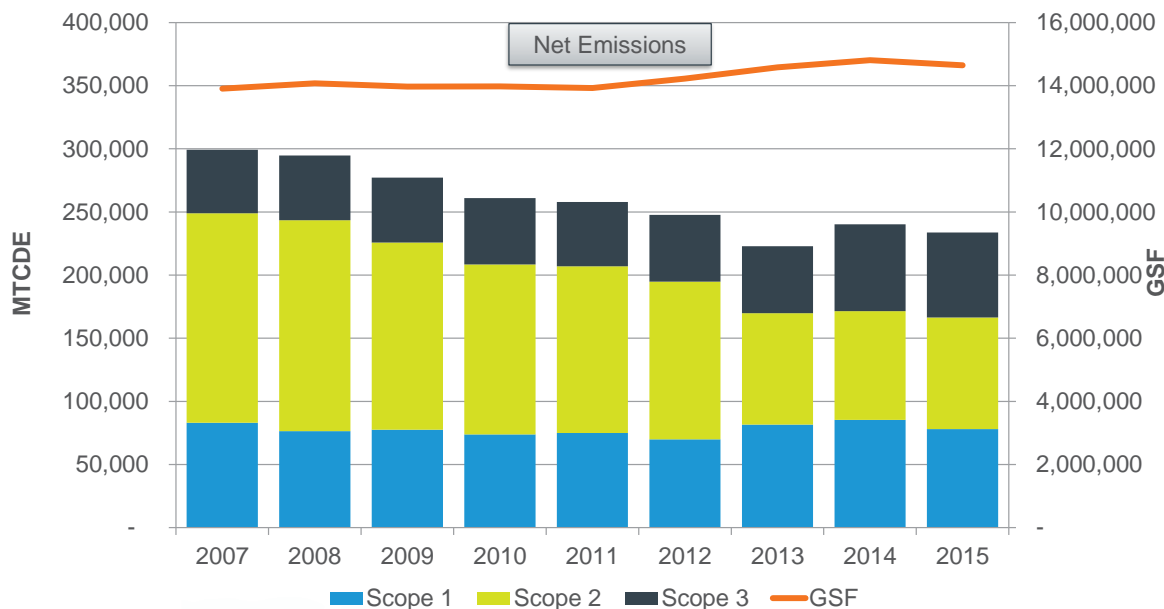
Total Emissions vs. Space Growth



REC purchases significantly change net emission profile

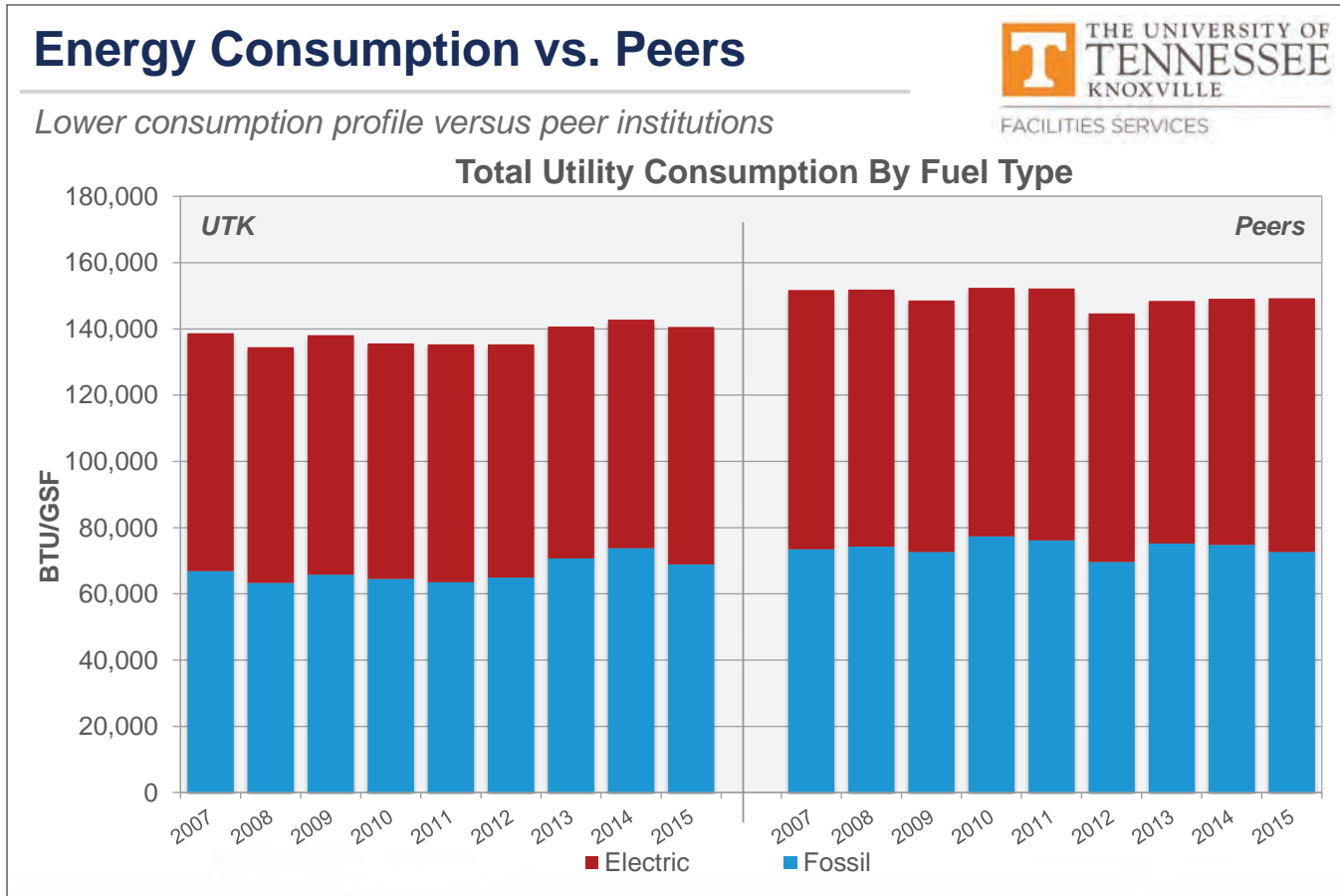


Total Emissions vs. Space Growth



Total Emissions vs. Space Growth - Both of these charts will show improvement due to energy conservation measures, converting to natural gas from coal, and purchasing of Renewable Energy Credits (RECs) to offset emissions.

APPENDIX A - SIGHTLINES



Energy Consumption vs. Peers: - Total utility consumption by fuel type will continue to decrease due to conservation measures.

APPENDIX B - APPA FPI

1. APPA: Leadership in Educational Facilities

Facilities Performance Indicators Report (FPI) for 2015 – Comparison of average costs for grounds, custodial, maintenance, and other functional areas among peer institutions.



APPA FPI Report - 2014-15

University of Tennessee/Knoxville

Region: SRAPPA

Gross Square Feet: 16,437,003

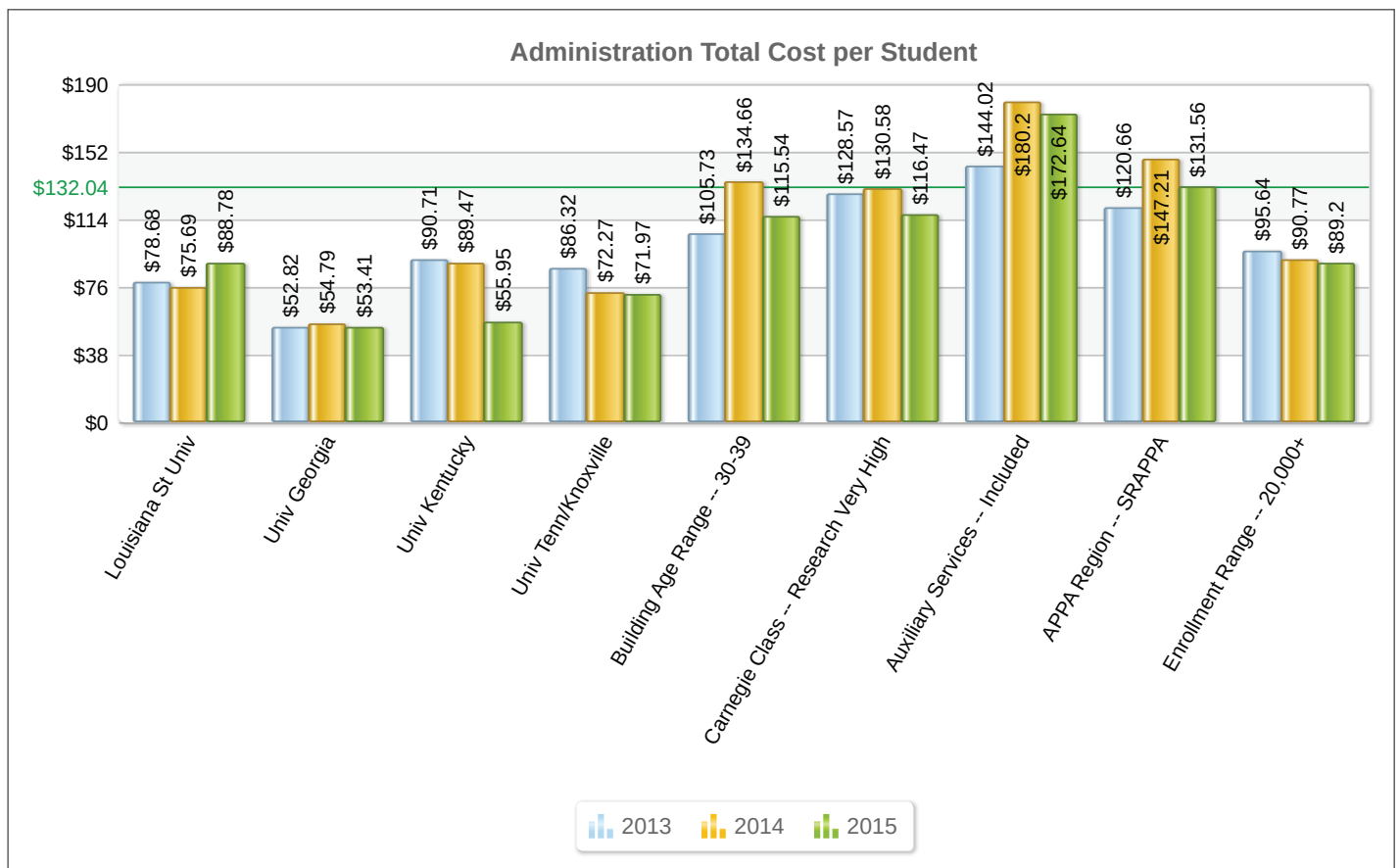
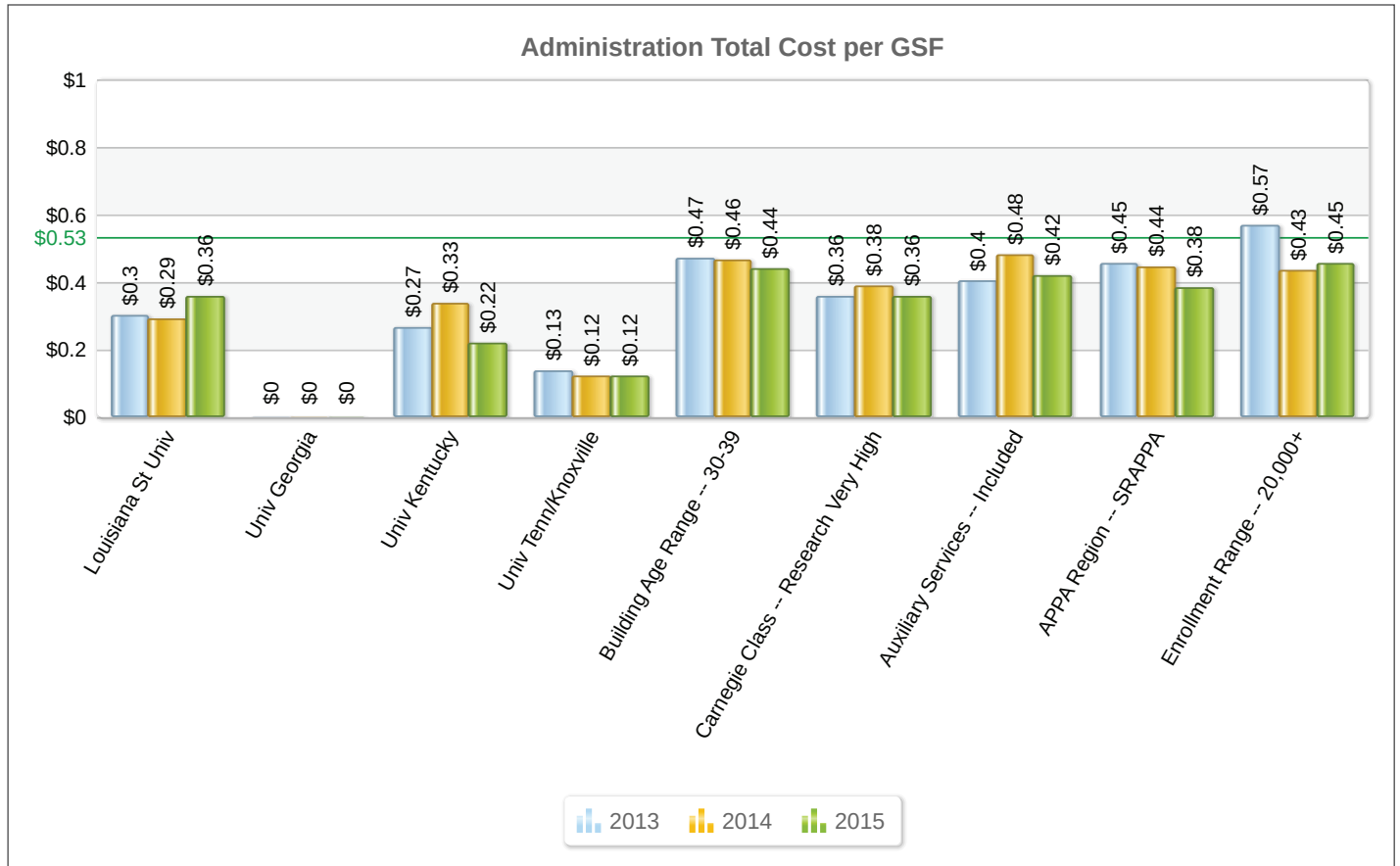
Carnegie: Research Very High

Number of Building: 290

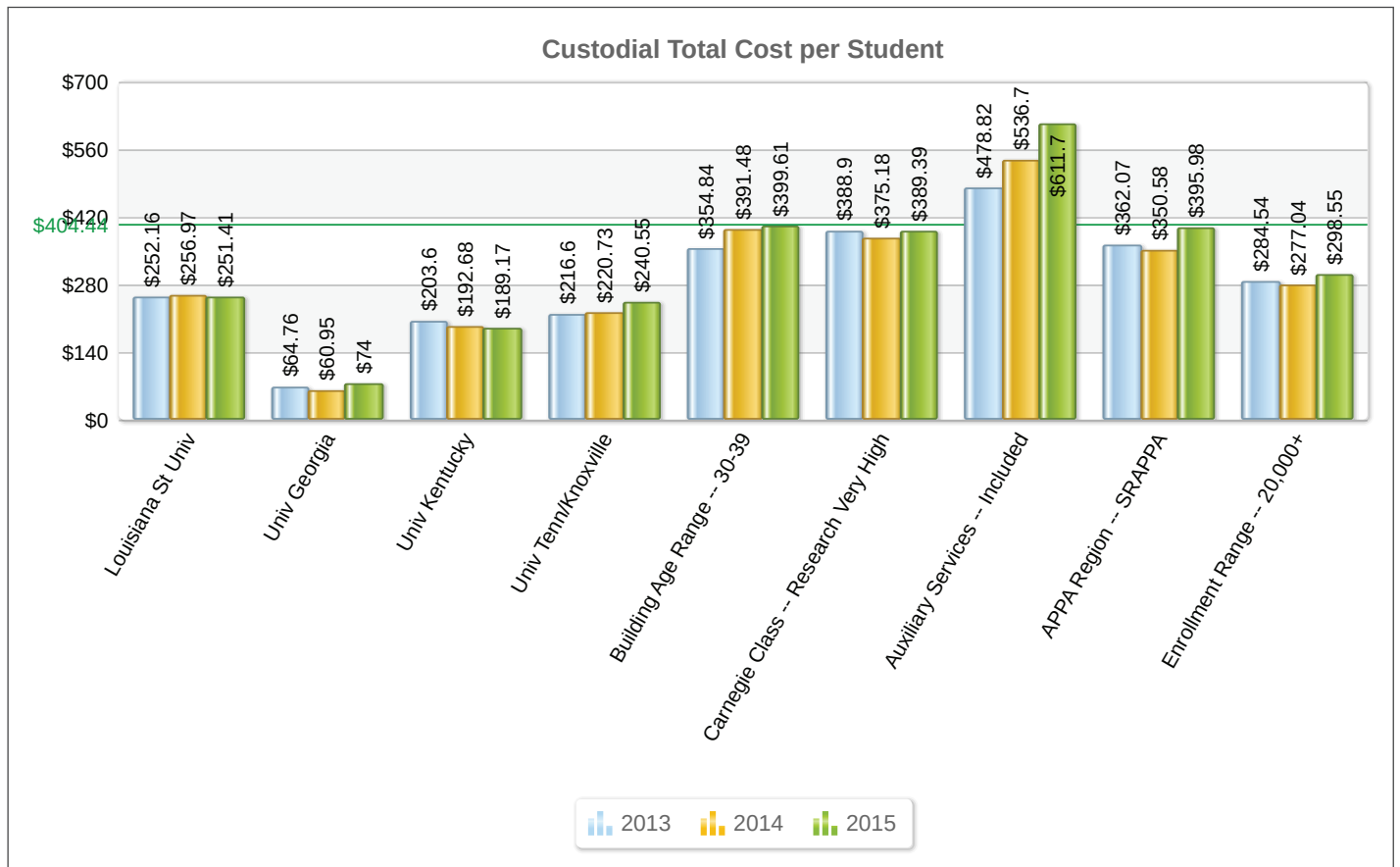
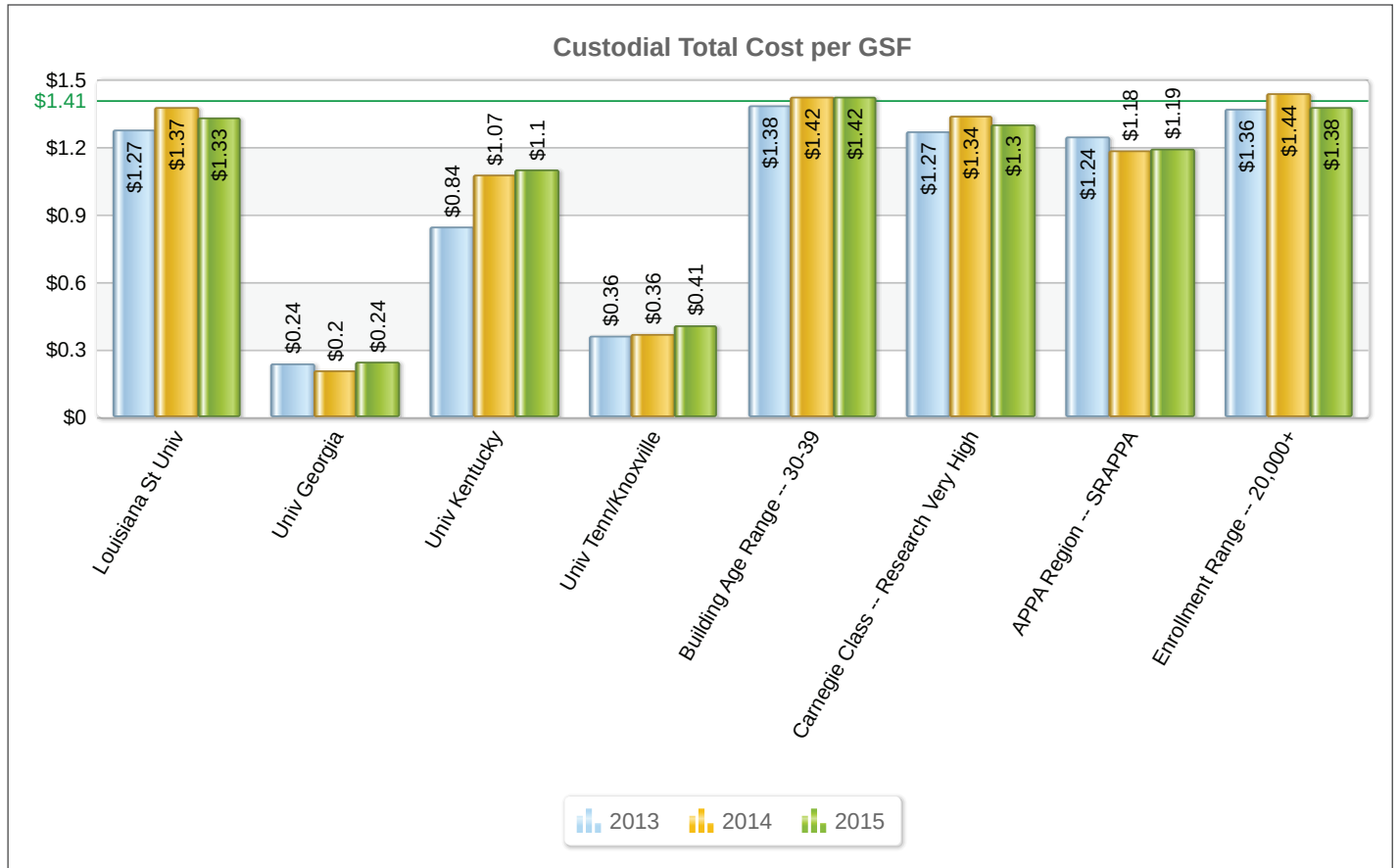
Funding: Public

Number of Students: 27,712

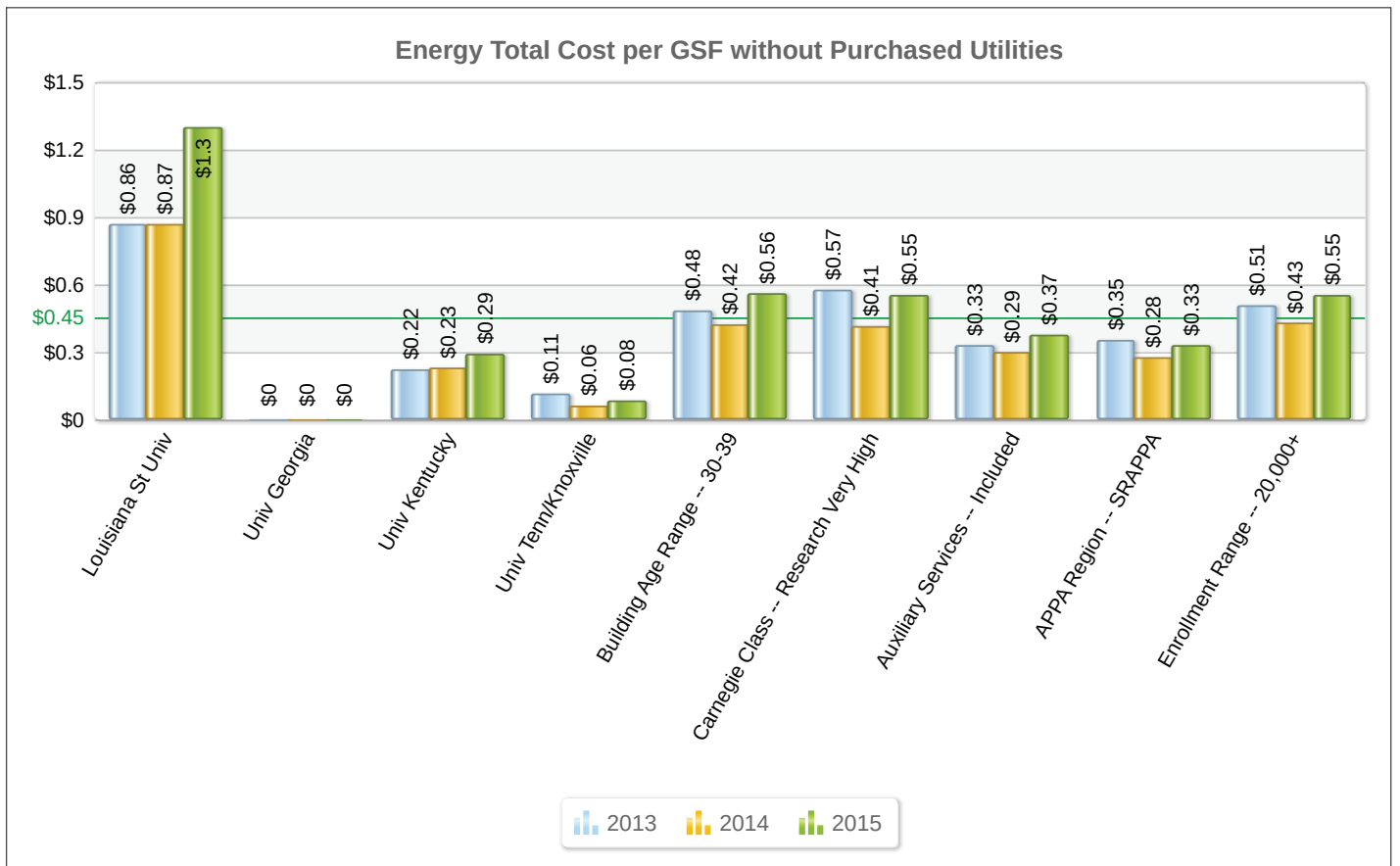
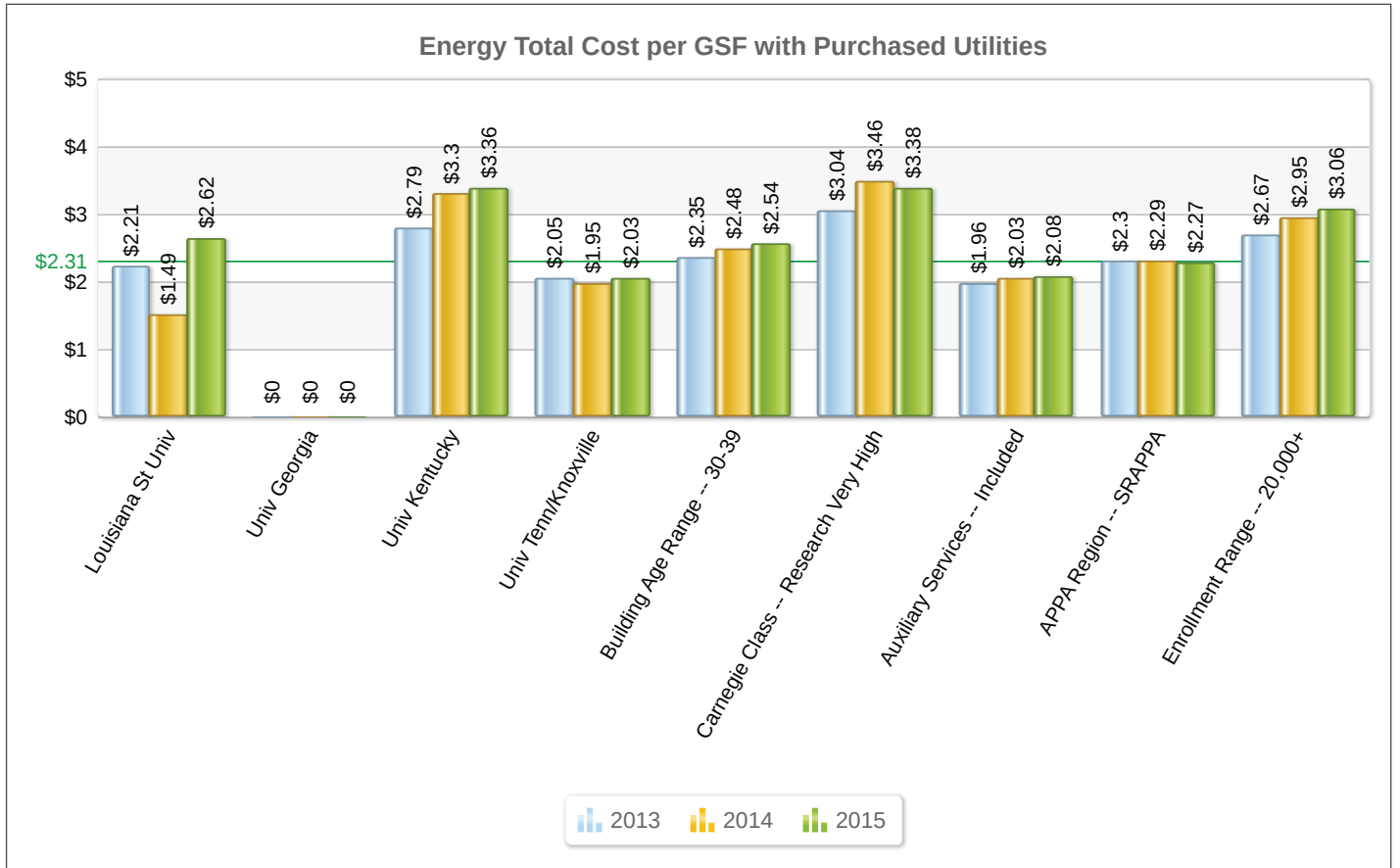
APPENDIX B - APPA FPI



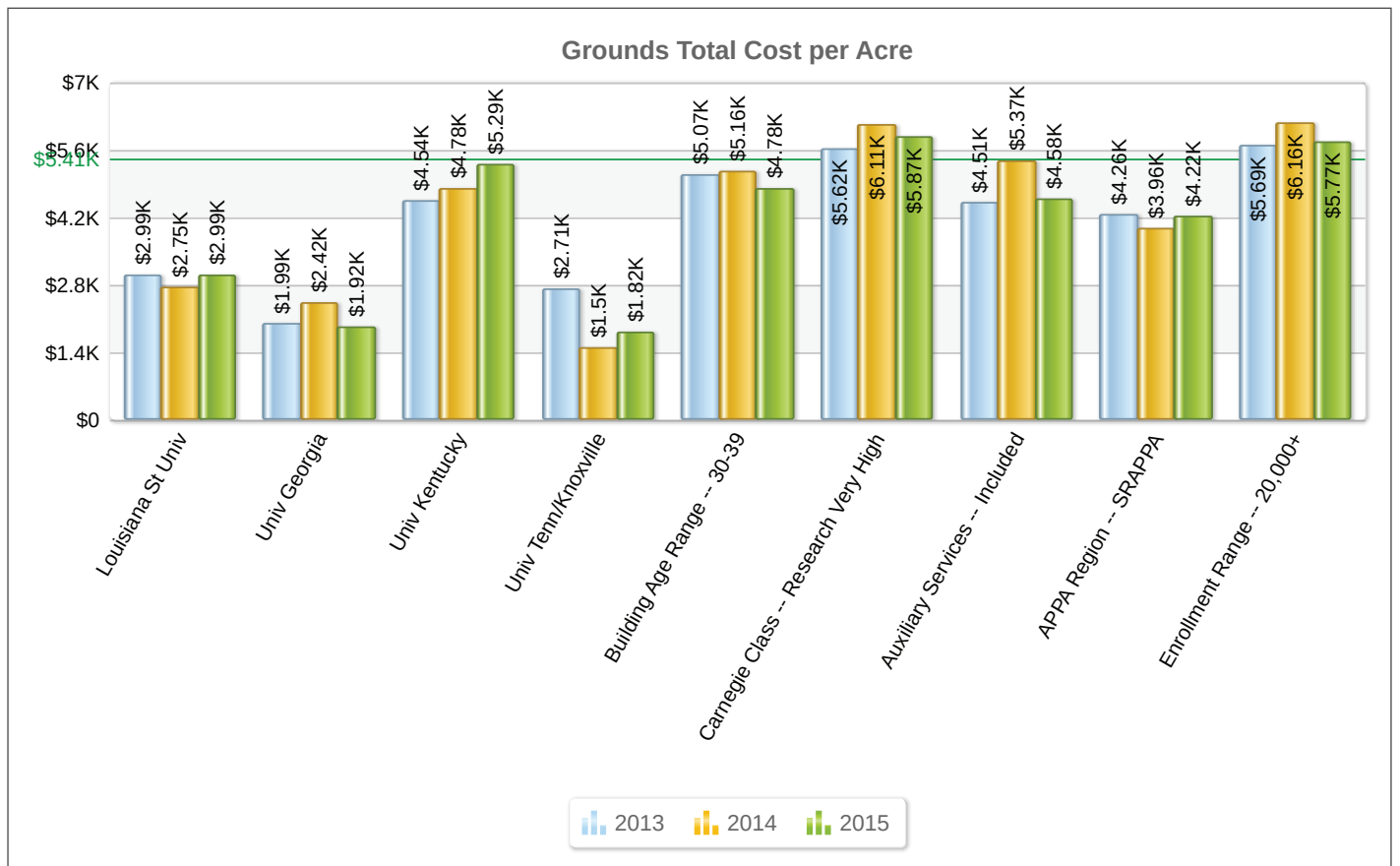
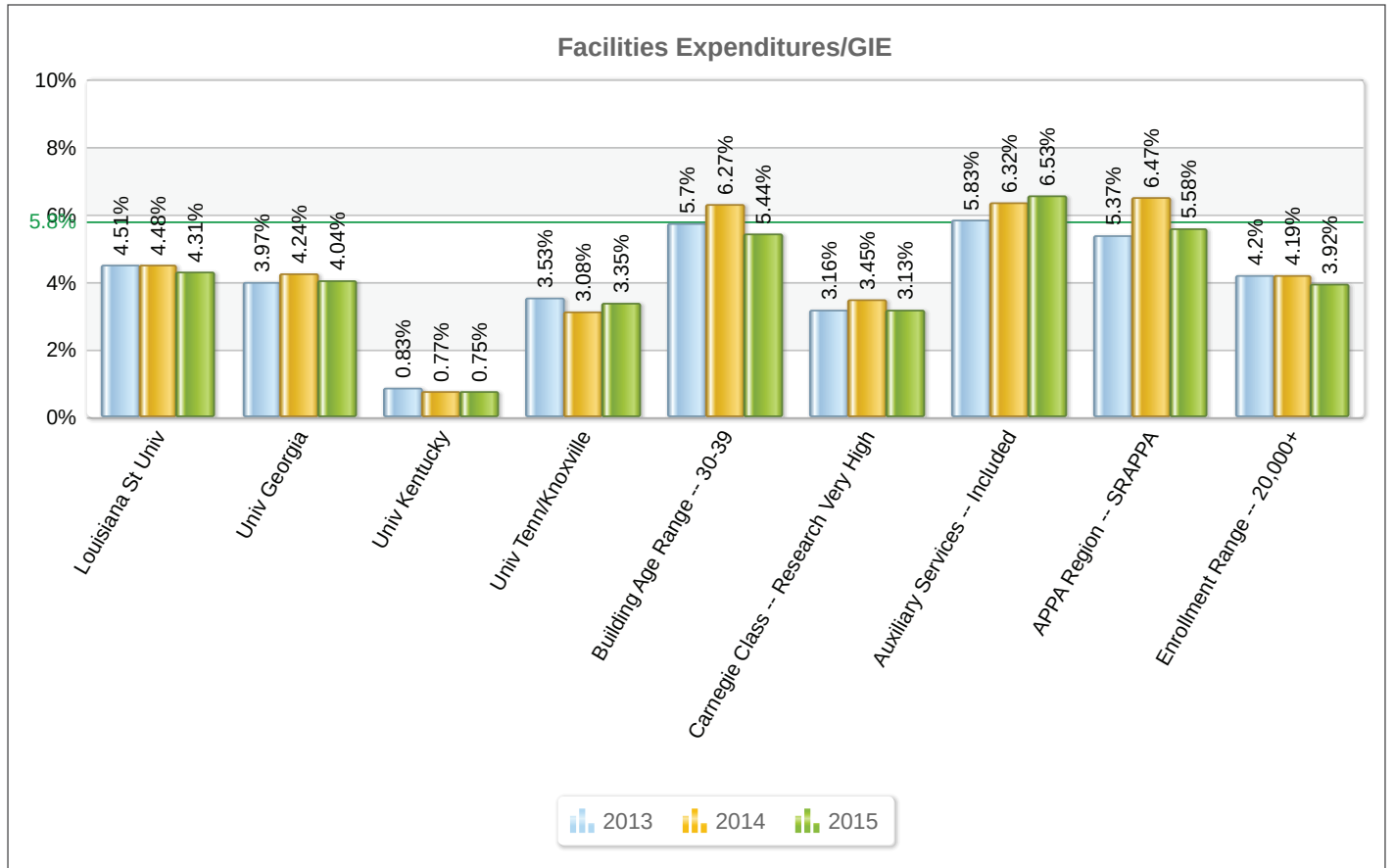
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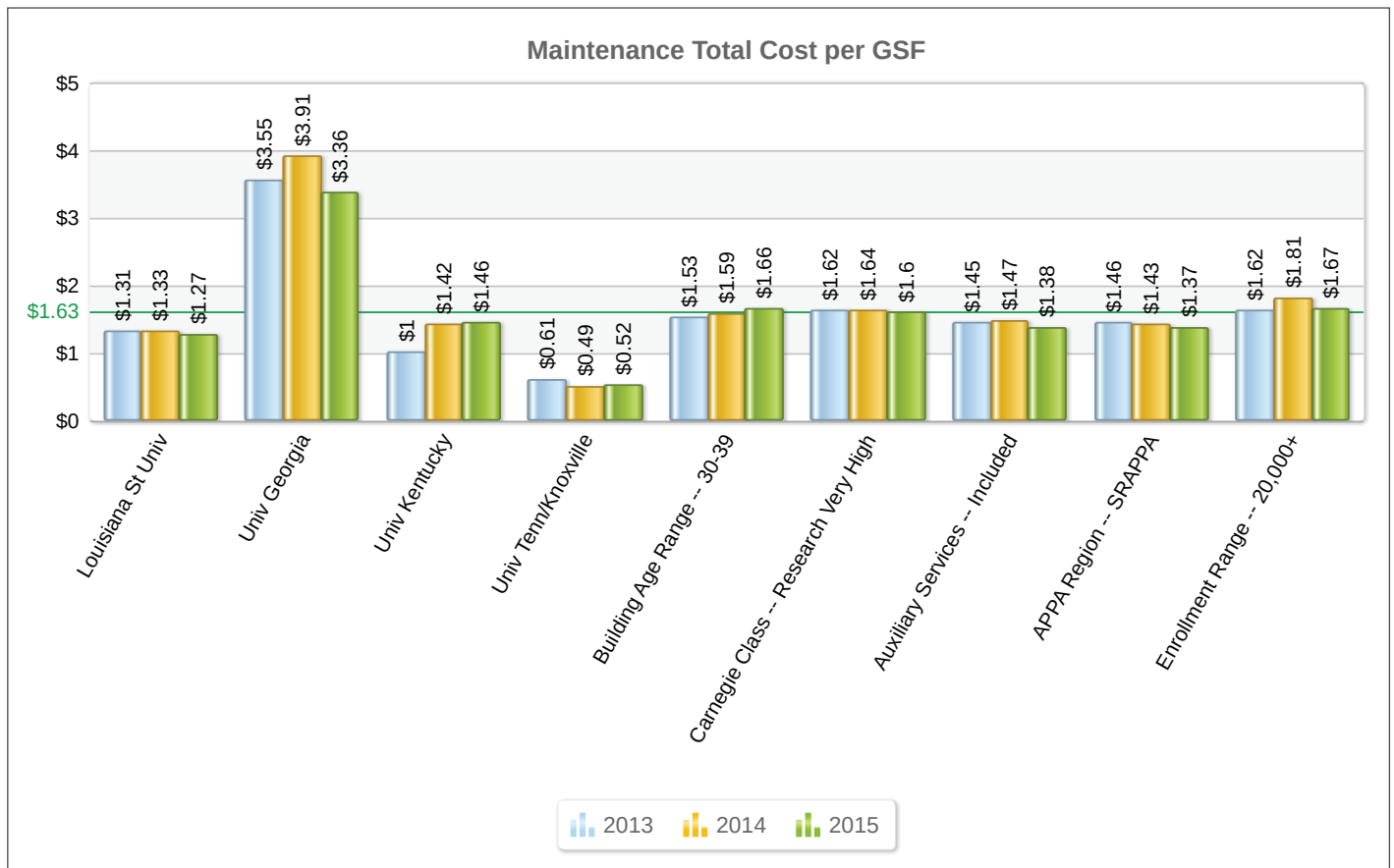
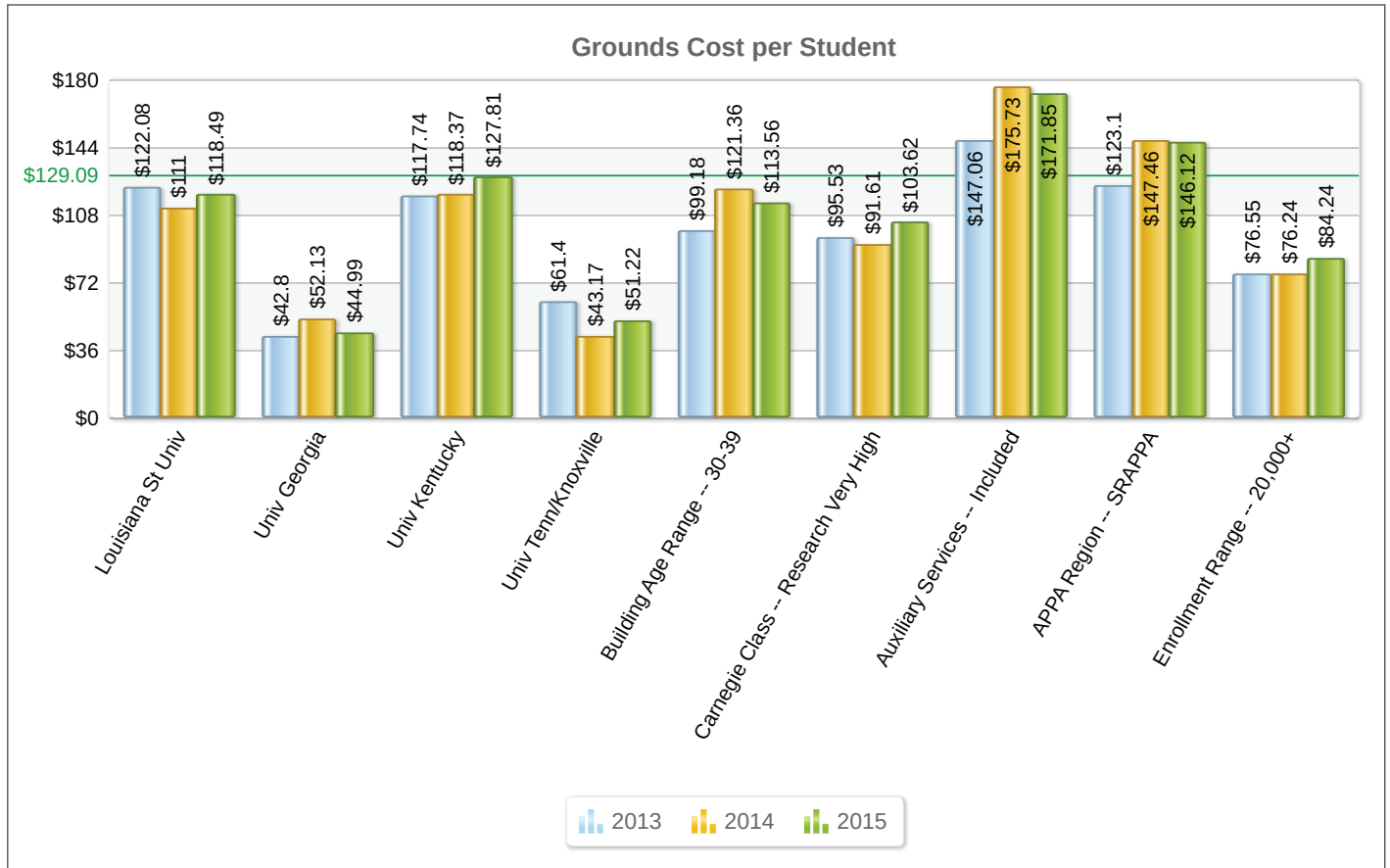
APPENDIX B - APPA FPI



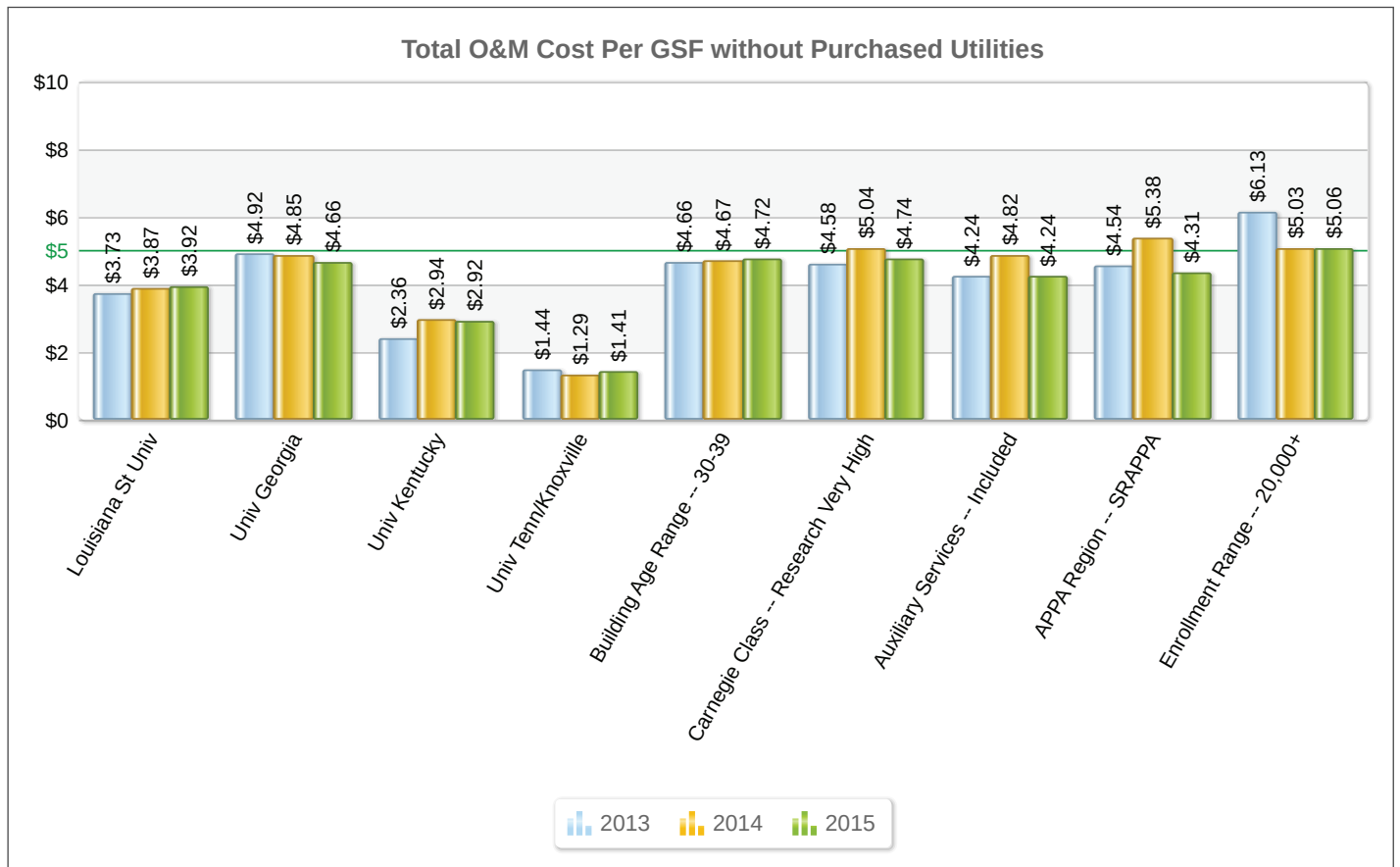
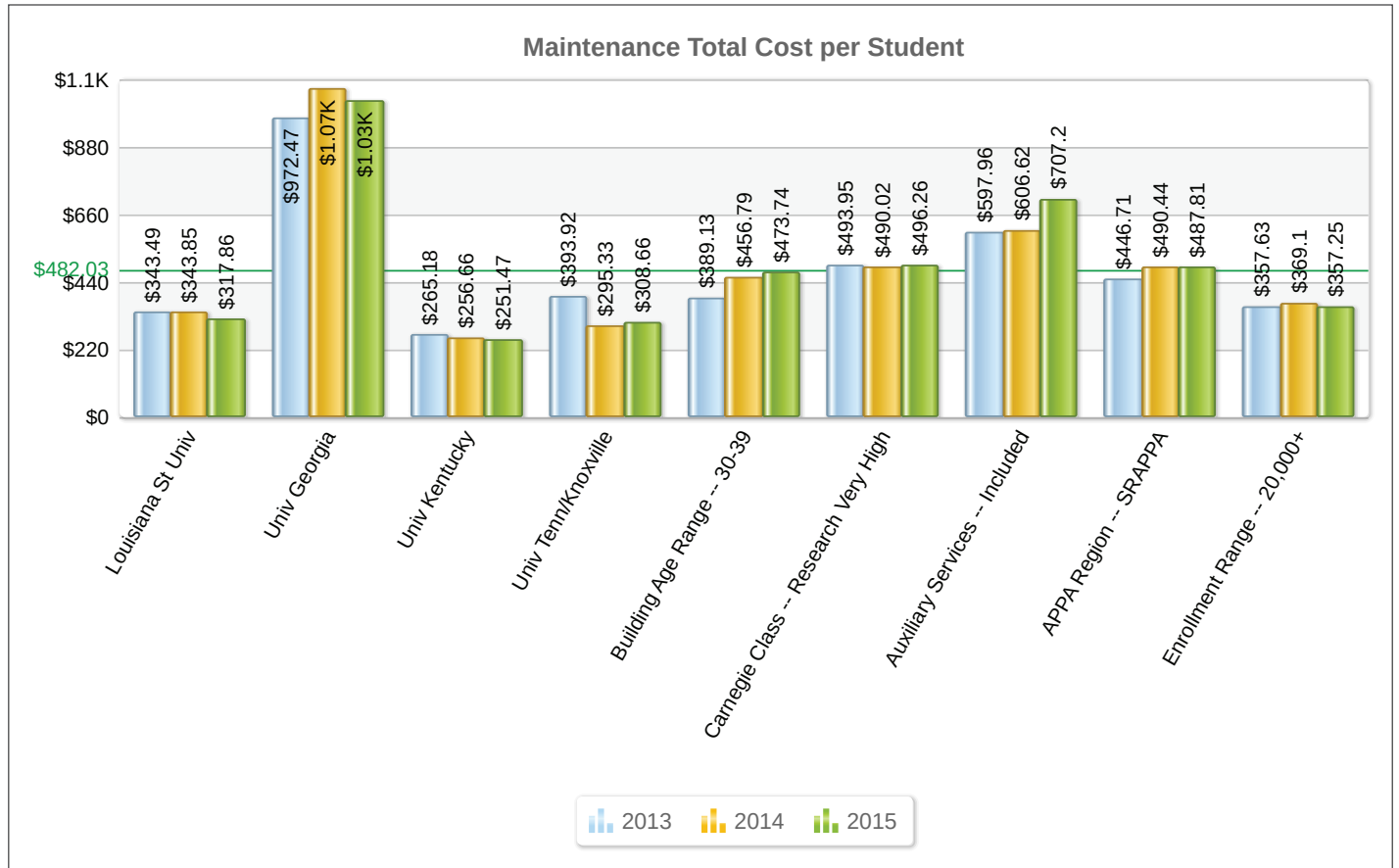
APPENDIX B - APPA FPI



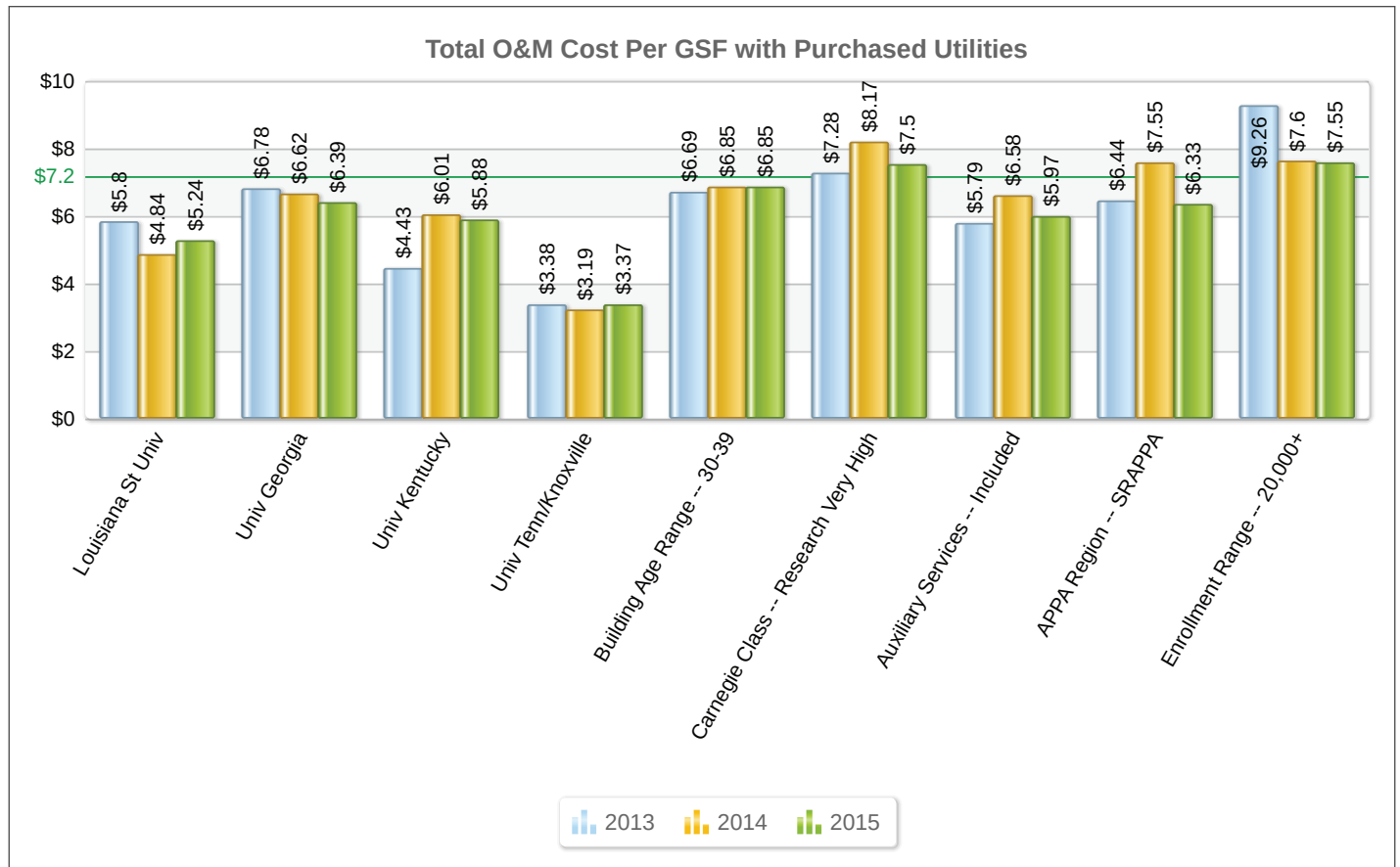
APPENDIX B - APPA FPI



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THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

FACILITIES SERVICES

ANNUAL REPORT 2016

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