



FACILITIES SERVICES

SHOWCASE & ANNUAL REPORT
2015

TABLE OF CONTENTS

DEPARTMENT OVERVIEW

01

INTRODUCTION

- 01. Chancellor Cheek Message
- 01. Foreward

02

FACILITIES SERVICES

- 02. Department Overview
- 02. Vision/Mission/Values

03

REORGANIZATION

- 03. Overall Organizational Concepts
- 03. Facilities Operations
- 03. Zone Maintenance
- 03. Communication & Info Services
- 04. Utilities Services
- 04. Design Services
- 05. Construction Services

05

SELF-ASSESSMENT & BENCHMARKING

- 05. Sightlines
- 05. Archibus

06

ORGANIZATIONAL CHART

- 05. Facilities Services
Organizational Chart

07

UNIT SUMMARIES

- 07. Administration
- 07. Special Projects
- 08. Administrative & Support Services
- 09. Communications & Information Services
- 11. Construction Services
- 12. Design Services
- 14. Facilities Operations
- 17. Utilities Services
- 20. Zone Maintenance

2015 ANNUAL REPORTS

21

ANNUAL REPORTS

- 23. Special Projects
- 23. Administrative & Support Services
- 24. Communications & Information Services
- 27. Construction Services
- 28. Design Services
- 30. Facilities Operations
- 35. Utilities Services
- 38. Zone Maintenance

APPENDICES

A

SIGHTLINES

- A1. Peer Institutions
- A2. Overview
- A4. Capital
- A6. Operations

B

APPA FPI REPORT

- B1. Overview
- B2. General
- B3. Custodial
- B4. Grounds
- B5. Maintenance
- B6. Needs Index

C

CUSTOMER SATISFACTION

- C1. Overall Averages
- C2. Services Provided
- C3. Rating Per Unit

D

EMPLOYEE SATISFACTION

- C1. Overall Averages
- C3. Comments

DEPARTMENT OVERVIEW



INTRODUCTION

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

– UT Chancellor Jimmy Cheek



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 720 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.

DEPARTMENT REORGANIZATION

Overall Organizational Concepts

The Facilities Services Department has initiated numerous organizational changes over the past four years.

Overall reorganizational concepts include supporting the University of Tennessee Academic/Research Vision and Mission, supporting the Chancellor's goal to become a Top 25 Research Institution, converting from a reactive group to a proactive team, and focusing on the department's core tasks: Maintenance and Project Management.



This has been accomplished through the reconfiguration of Design and Construction, and through the re-envisioned and service-expanded Administrative Support, Training, IT Support, Utilities, Zone Maintenance and Communications areas, all of which ensure that Facilities Services is able to meet the

needs of the campus community like never before.

Facilities Operations Reorganization

Building Services

Facilities Services began the transition to in-house custodial services in its Building Services subunit in April 2012, with an acquisition of 250,000 square feet in the Conference Center, where the Total Cleaning program was tested as a part of the Facilities Services reorganization. Total Cleaning has resulted in the complete transfer of university custodial services, including the Agricultural Campus, into the as of June 1, 2014.



Rapid Response Team (RRT)



During reorganization, an important goal was transitioning from a reactive group to proactive team. The Rapid Response Team (RRT) has been developed as a specialized unit that handles overall facilities inspection, quality control, special projects and

customer service initiatives. RRT receives work requests from all areas of the UT campus, and has a wide variety of skills in the areas of electrical, plumbing, carpentry and heavy equipment.

Landscape Services

As an early part of the Facilities Services reorganization, Landscape Services brought mowing and leaf removal services in-house in 2009, allowing the university to maintain campus grounds at a savings over previously contracted work every year since, with an average savings of approximately \$325,000. No personnel were terminated in this transition, and new personnel have been hired and trained through the savings generated.



Zone Maintenance Reorganization



A key component of the Facilities Services reorganization, the modified "Zone Concept" divides the campus into 15 customer-oriented zones, each overseen by a respective Zone Maintenance unit, which allows for a proactive approach to

customer service and repair. Zone Maintenance has personnel assigned to almost every building on the campus, and provides general maintenance services within educational and general purpose buildings on both the Main and Agricultural campuses. These services encompass almost all general, day-to-day maintenance and repair needs.

In keeping with the University of Tennessee's goal of becoming a Top 25 Research Institution, Facilities Services also created the STAR Team (Special Team to Assist Research) as a subunit of Zone Maintenance. The STAR Team assists new researchers in getting their research programs running in a timely fashion once they arrive on campus. The team also works with existing researchers during changes in programming requirements and with day-to-day maintenance issues that may arise.

Communication and Information Services Reorganization

Admire the department's other numerous changes, the Communication's & Information Services unit has also grown and experienced many improvements and accomplishments since the reorganization.



Communications and Public Relations

One of the purposeful changes in this unit includes the introduction of the Communications and Public Relations subunit, which assists with all departmental communication, inter-departmental communication, and general public relations work for the department. This subunit also maintains all of the department's Web site and social media content.

DEPARTMENT REORGANIZATION

IT Support & Maintenance

Although staffed by only two full-time employees, the IT Support and Maintenance subunit continues to play a vital role in the evolution of Facilities Services as a whole. Like most other subunits within the department, IT Support and Maintenance has also undergone a great deal of change during the reorganization, while still managing to tackle the needs of a large and dynamic department.

In 2013 an IT Technologist II position was added to the unit to help curb the growing demand for IT support and help introduce newer technologies to the workforce. In particular, IT Support and Maintenance is overseeing the integration of an Integrated Workplace Management System (IWMS) to replace the current legacy work order management system, and to improve self-assessment and benchmarking capabilities of the department.

Employee Training and Development

At the outset of the Facilities Services Department reorganization efforts in 2012, the need for an expanded training team quickly became evident. By re-allocating a portion of its annual budget and pursuing a goal of funding training activities to 5% of the department's overall budget, the Facilities Services Department created an Employee Training and Development subunit in March, 2013.

Training staff can now boast significant milestones in the department's employee development; including significant increases in the number of training hours employees have participated in so far, career "ladder/path" programs to foster advancement, ERC training for supervisors, and cross-training/skill-sharing programs, which have facilitated the reassignment of personnel during Facilities Services reorganization efforts, reducing the number of employees hired to fill new positions, and increasing overall competency.

Utilities Services Reorganization



Another key component of the Facilities Services reorganization involved consolidating Plumbing and Heating Services, Electrical Services, A/C Services and the Steam Plant into one managed unit under the Director of Utilities Services.

The pooling of these fundamental services improves coordination, while ensuring adequate oversight.

Design Reorganization

Design Services



Throughout the reorganization, Facilities Services changed its approach to Design Services, creating a unique aesthetic that speaks to the heritage and identity of the University of Tennessee, while also reassigning personnel and responsibilities to more efficiently and effectively serve our campus community.

By taking this new approach to unit alignment, Landscape Design, Project Management, Codes Enforcement, and Archives and Space Inventory, Design Services has vastly improved these vital service areas. This accomplished the creation and upkeep of a digital drawing and specification archive from legacy (paper) records; new positions added for full-time Interior Design, Landscape Design, Electrical Engineering and Civil Engineering project managers and coordinators; the implementation of codes enforcement Redi-check procedures for drawings submitted by designers; increased communication with Fire Marshals at the local and state levels, and the transference of estimating responsibilities to Construction, streamlining the design process, while improving overall unit communication.

Landscape Design

Some new policies and procedures ushered in by the new vision and core principles for campus Landscaping and Design include improved project programming that involves Facilities Services, university administration, and design consultants collaborating to establish project scope and budget. The newly formed Campus Planning and Design Committee (CP+DC) now oversees all campus projects in an effort to bring unity to campus design and aesthetic standards.



Other duties overseen by Landscape Design include developing and maintaining the Campus Landscape Vision and Site Standards document, preparing site construction documents and specifications, playing a vital role in site design review and construction administration for projects executed by the Facilities Planning Department, and administering the EPA National Pollution Discharge Elimination System (NPDES) Phase II Municipal Separate Storm Sewer System (MS4) Permit.

DEPARTMENT REORGANIZATION

Construction Reorganization

Construction Services



The creation of the Construction Services unit during the Facilities Services reorganization has decreased time taken to complete projects, and improved construction efficiency. Construction Services assists the campus with construction and renovation activities, and is available to assist with projects performed by the Office of Facilities Planning to help control costs, achieve quality, and monitor the

interests of the campus community.

Construction Services also develops specifications for material and contracts, and now assists with estimating and design on projects, consulting with architects, engineers, and clients concerning the ongoing development of campus projects.

Other reorganization improvements include the formation of a small cross-disciplinary construction team, which now provides quick and effective in-house construction solutions, increased responsiveness, improved communication, and the elimination of unnecessary expenditure.

SELF-ASSESSMENT AND BENCHMARKING

Sightlines

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

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 ORGANIZATION CHART



FACILITIES UNIT SUMMARIES

ADMINISTRATION

Associate Vice Chancellor, Dave Irvin

Facilities Services Administration strives to lead the department in the drive to become a Top 25 facilities department to support the University of Tennessee’s initiative to become a Top 25 Research Institution.

Administration has guided Facilities Services through its major reorganization, with ongoing progressive adjustments. The goal of Facilities Services Administration is to more effectively and efficiently perform the mission of the Facilities Services Department and support the core mission of the university.

Emergency Preparedness

During the past few years Facilities Services has become a major player for emergency preparedness on campus. Personnel training and awareness has been increased. Facilities Services personnel play significant roles in campus emergency preparedness, from the Main Campus



Emergency Operations Center, to performing as zone and building level personnel. Recent acquisitions include backpacks with emergency provisions for building level personnel to a portable tank to allow for more efficient refueling of

emergency equipment on campus.



Utility Savings

Facilities Services has been instrumental in delivering more than \$1 million to the campus in recurring electrical costs savings by implementing the Energy Policy and other projects such as chiller plant controls and approximately \$1 million per year during the last two years by taking advantage of lower natural gas pricing and using natural gas versus coal and some purchased electricity.

SPECIAL PROJECTS

Director, Leo Pedigo

The office of Special Projects operates within Facilities Services Administration. Its purpose is two-fold:

- To perform special projects as assigned by the Associate Vice Chancellor.
- To perform ongoing research regarding innovations and best business practices within the facilities management industry.

ARCHIBUS

It is the responsibility of Special Projects to guide the Facilities Services Archibus team in the development and installation of Archibus software, an Integrated Workplace Management System (IWMS).



Archibus will enable significant enhancements in the department’s ability to achieve the goals of increased effectiveness and efficiency and to improve communications with the campus community.

Facilities Services Showcase

Special Projects works with Facilities Services unit directors and Communications & Public Relations in assembling information from throughout the department to prepare a report detailing the department’s progress.

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 at the University of Tennessee. The goal is to stay on the cutting edge of best business practices.

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

FACILITIES UNIT SUMMARIES

ADMINISTRATIVE & SUPPORT SERVICES

Director, Sheree Spoons



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 Ser-

vices. These primary areas of responsibilities are conducted within three offices: Business Services, Central Supply, and Administrative Support.

Business Services Office (BSO)

The Business Services Office is responsible for accomplishing human resource and financial support functions such as: comprehensive human resource and payroll functions, 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 office provides information regarding university fiscal, human resource, and payroll policies and procedures and serves as the central point of contact for all questions related to Facilities Services financial, human resource, and payroll matters.



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.

In addition, Accounts Payable is responsible for the following: maintaining the Facilities Services Department vendor database, creating vendor requests, updating vendors remit to addresses, and obtaining W-9s for applicable vendors; overseeing the Facilities Services Department procurement card purchases, distributing all of the procurement card charges to the appropriate accounts and reconciling account charges per fiscal policies; 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.

The Accounts Payable subunit is responsible for processing payments for over 21,600 invoices, over 8,000 Transfer Vouchers and over 10,000 procurement card transactions annually.

Accounts Receivable

Accounts receivable represent debts owed to Facilities Services for maintenance, repairs, rentals and services provided to auxiliaries, 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.

Accounts Receivable 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 maintenance, repair and services operations. Accounts receivables for Facilities Services can be broken down into three categories: Auxiliary Charges, Departmental Charges and Project Charges and amount to over \$10,000,000 in collections annually.

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

FACILITIES UNIT SUMMARIES

Human Resources & Payroll

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

The unit 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 unit 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 unit 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 720 employees to include coordinating performance review evaluations, managing personnel or payroll changes, leave applications, promotions, and disciplinary procedures. The unit 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.

Central Supply



Central Supply handles purchasing and warehousing functions for the Facilities Services Department. It is the central receiving and issuing point for special order and stock replenishment purchases. Central Supply maintains an inventory of commonly used stock items to support the Facilities Services units in providing maintenance and renovation services to campus.

COMMUNICATIONS & INFORMATION SERVICES

Director, Kevin Garland



The Communications & Information Services unit also provides three primary resources to Facilities Services: Communications/Outreach – which includes the Office of Sustainability and the Facilities Services Communications & Public Relations subunit, IT Support

& Maintenance, and Employee Training & Development.

By supplying these services effectively and efficiently, Communications & Information Services is able to support the primary mission of Facilities Services and the University of Tennessee.

Overall, Communications & Information Services is a service-diversified unit, with each team sharing a unified commitment to improving Facilities Services and supporting the university's drive to Top 25.

Office of Sustainability



This office has several main areas of work that help define its purpose, including but not limited to, infusing sustainability into the curriculum, developing and implementing efficient and economical operations across campus with a focus on environmental protection and to establish relationships across campus to support and grow

sustainable related goals (with a particular focus on outreach to the student body).

The Office of Sustainability aims to foster sustainable development and to promote environmental stewardship at the university by strategically bridging the gap between campus operations, teaching, research, and outreach. Office staff work to reduce UT's environmental impact and integrate recycling, conservation, and other sustainability best practices into campus community culture.

Data collection and analysis of campus energy data, carbon emission data, and utility use is also maintained and managed through this office.

FACILITIES UNIT SUMMARIES

Communications & Public Relations

The Facilities Services Communications Coordinator facilitates all departmental communication, inter-departmental communication, and general public relations work for the department. This office also promotes employee morale, manages departmental social media sites, plans and implements award ceremonies and employee events, and maintains the lines of communication throughout the campus community to keep all parties informed of anything facilities related.



This office also organizes and completes annual departmental surveys and has a hand in the organization and development of department goals, policies & procedures, and master plans.

It is the objective of the communications coordinator to maintain transparency in all communications. This includes facilitating communication between departmental units and the campus community as a whole.

IT Support & Maintenance



This team consists of four sub-services: infrastructure, data management, communications, and PC support. These services create the technological backbone for Facilities Services and keep workflow moving through the department.

Infrastructure includes all hardware, networking, and operating system software in the department, encompassing:

- Primary Servers – soon to be moved to OIT's virtual environment
- All Network Equipment & Cabling – maintain in current building and oversee new equipment in future building
- Building Security – Register fire alarm & security door hardware that is used across campus

Data Management involves several in-house maintained computer systems:

- Archibus
- Facilities Data Management: support through IRIS (SAP R/3) and Archibus software

- Web portal systems: Chemical Inventory, Event Solicitations, Housing Key Management, SCADA interfacing, etc.

IT Communications consists of all radios, smart phone, or other mobile technological devices:

- Motorola Radio System
- Mobile Communication Device support (several tablets to roll out 2015-2017)
- Tablets/Assistive technology/any other future tech. devices
- Web site maintenance: small-scale drawings, page/portal redesigns and updates

PC Support (the most user-visible service):

- Departmental desktop, laptop, and peripheral support
- System Hardware – planned replacement schedule: every 4-5 years
- Other software maintenance/support

Employee Training & Development

The Employee Training & Development team consists of a training coordinator and two trainers. The coordinator monitors, evaluates and records training activities and determines each program's effectiveness. Specific training is offered to employees to help them improve, maintain or learn new skills. This



group's primary goal and duty is to maintain a highly skilled workforce which will increase efficiency, improve customer service, and help to minimize operating costs. This group also continually assesses the training needs of employees and organizes, develops or obtains new training programs if the existing ones do not meet standards. Career paths and career ladders are reviewed and redeveloped based on the need of the department.

As Facilities' workforce ages, succession planning is also becoming an area that this group will focus upon in the coming years to better develop our next generation of leaders. Facilities Services has made it a goal to dedicate up to 5 percent of its annual budget to training and development of its staff members, so this group is continually looking for new and innovated ways to bring more levels of certification, professional training, and experience to Facilities employees.

FACILITIES UNIT SUMMARIES

CONSTRUCTION SERVICES

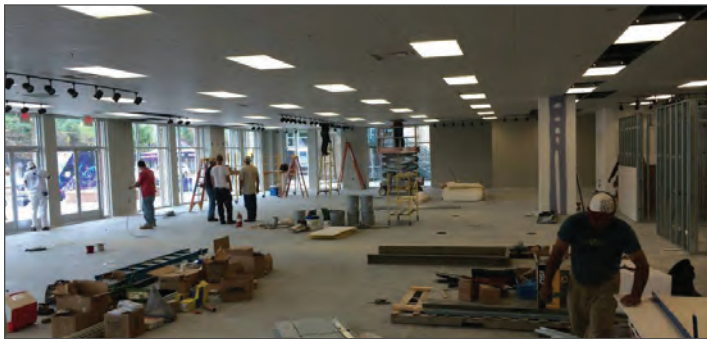
Director, Tim Tomlinson



The Construction Services Unit assists the campus with construction and renovation activities for projects performed by Facilities Services and is available to assist with projects performed by the Office of

Facilities Planning. The unit's goal is to be a "one-stop shop" for construction projects on campus by working together for a common goal while being proactive during the planning and execution of projects. This goal is accomplished through the coordination of the unit's three offices – Construction Coordination, Estimating, and Construction Team.

Construction Project Management



Construction Coordination

The Project Coordination Group assists the campus with coordinating construction and renovation activities for contracted projects as well as projects performed by Facilities Services, and the group is also available to assist with projects performed by the Office of Facilities Planning. The group also works closely with the Facilities Services Design team.

Some of the Project Coordination Group's responsibilities include:

- Primary contact for the campus community for renovation projects.
- Work along Facilities Planning on new capital projects to help control costs, achieve quality and to monitor the campus interests and standards.
- Develop specifications for material and contracts.
- Assist with estimates and design projects to include consulting with architects, engineers and clients concerning the design development of projects.
- Contract and manage the yearly maintenance of campus sculptures.

Estimating Services

Estimating Services plays a vital role in the construction planning process and in the continuation of projects on campus. This group is responsible for preparing on-site cost estimates for future projects and updating estimates as revisions are made during a project, as well as communicating project details to the construction coordinator when proposed work becomes an active project.

The Construction unit's in-house architect also coordinates with Estimating Services to work out specific details of a project before it begins. This helps the flow of the entire project by ensuring the group is proactive vs. reactive.

By providing these services effectively and efficiently, Estimating Services is able to support the primary mission of Facilities Services.

Management and Coordination

Construction manages the contracts on campus for projects that include painting, HVAC, flooring, carpeting, and carpentry, while assisting with in-house staff where needed. The unit also coordinates and manages other Facilities groups working with Construction on specific projects.

Construction Team

The Construction Team aids the campus and department with construction and renovation projects. Since the creation of this subunit, the Construction Unit is able to complete projects in a more timely and efficient manner.



Many projects, such as classroom upgrades, take place over the summer break. These projects require a great deal of planning with the campus departments as well as vendors to ensure everything is completed before the beginning of the fall semester.

Some of the Construction Team's responsibilities include:

- New Construction
- Remodeling
- New Loading Docks and Handicap Ramps
- Outdoor Lighting
- Other Major Building Projects

FACILITIES UNIT SUMMARIES

DESIGN SERVICES

Director, Andy Powers



Design Services provides professional architectural, interior design and engineering guidance for the Knoxville campus. The unit assists other departments and the administration with planning and execution of renovations and new facilities.

The unit works with design teams and campus representatives to ensure that these requirements are incorporated into the design including campus aesthetics, technical details, and master plans. Design coordinates with various campus interests to incorporate campus concerns such as utilities, traffic, parking, and special events.

Project managers meet with state agencies, design consultants and contractors throughout the process to coordinate on all aspects of the process from conception through move in.

Project Management



Project Managers are the liaisons for design and construction projects costing more than \$100,000 on the Main, Agricultural and Space Institute campuses. They are tasked with coordinating campus objectives and translating

those to designers and contractors through appropriate channels. Project Managers work with the administration, faculty, and staff; providing aesthetic, technical and procedural advice.

The Project Managers assist with programming, campus planning, cost estimating, and conceptual design of proposed projects. They monitor construction projects with respect to schedule and budgeting, proposing solutions to obstacles encountered.

Managers also support the campus in activities that require approvals from the State Fire Marshal by reviewing documents for code compliance and inspecting work in place. They collaborate with designers, contractors, code officials, staff, and administration to provide information on current and applicable codes as they apply to construction projects. Managers also assist with the formation of code equivalencies. In addition, managers provide guidance and support to the Campus and its consultants with respect

to building accessibility as defined by the Americans with Disabilities Act.

This group manages the regular testing and maintenance of various life safety systems such as sprinklers, fire alarms and smoke detection. It formulates and carries out Plans of Corrective Action for improving life safety in our existing buildings.

G.I.S. Coordinator

The unit is implementing a comprehensive system of spatially referenced data and tools for more efficient and effective access, analysis and maintenance of spatial information on the campus. A GIS-based



facility information system will provide the university an added dimension for problem solving and decision support through spatial visualization and analysis. To achieve this objective, the GIS unit is responsible for gathering, creating and maintaining spatial data that will support the primary mission of Facilities Services as well as coordinating data needs of other departments on campus. In addition, we are providing all cartographic needs of faculty, staff, and students and all other offices within the university.

Space & Archives



Campus facilities data must be properly maintained and managed so that accurate data can be provided to the university administration, the State of Tennessee, and various Federal Agencies to support

funding requests. Maximizing the integrity of space and archival information regarding campus buildings is the top priority. This data is used by various agencies to calculate facilities and administrative costs. Space & Archives provides information for all Knoxville Campus buildings in two general categories.

The Space Inventory maintains small-scale floor plans and facilities data for all campus buildings. The Building List link allows online viewing of floorplans for authorized users.

FACILITIES UNIT SUMMARIES

The Campus Archives files, stores, and reproduces campus prints, specifications. This group also creates digital files from these records. It stores and disseminates electronic architectural and engineering media to appropriate users. Existing building and utilities information is available to students, faculty, staff, students, administration, as well as contractors and design consultants.

Landscape Response Team

The vision of the Landscape Design Team is to create a landscape that reinforces a sense of community for learning and living; that conveys a sense of place, history and character unique to the University of Tennessee; conserves and protects natural resources through functional design and responsible stewardship.



To achieve the team vision and support the primary mission of Facilities Services, the Landscape Response Team performs the following duties:

- Develop and maintain the Campus Landscape Vision and Site Standards document.
- Prepare site construction documents and specifications for projects to be executed by the Facilities Services Department.
- Play a vital role in site design review and construction administration for projects executed by the Facilities Planning Department.

Interior Design



Interior designers support the university's mission in a number of ways. Our designers assist departments with space planning, furniture selection and procurement; as well as coordination of finishes for in house renovation projects. They also assist our maintenance painting crews to coordinate compositions that work within the branding

palette established by the campus. The coordinators also

assist project managers with capital projects providing aesthetic and technical advice on interior design concepts and products.

Stormwater Management

The University of Tennessee Knoxville operates a Phase II Municipal Separate Storm Sewer System (MS4). The MS4 is governed by the State of Tennessee National Pollutant Discharge Elimination System (NPDES) permit. This permit is required by the Tennessee Department of Environment and Conservation as mandated by the Environmental Protection Agency under the Clean Water Act of 1972.



The primary goal of the MS4 is to improve and/or maintain the quality of surface waters by reducing the amount of pollutants in storm water as a result of continued urbanization. Polluted runoff is commonly transported through MS4s, from which it is often discharged untreated into local water bodies. To prevent harmful pollutants from being washed or dumped into an MS4, operators must obtain a NPDES permit and develop a Stormwater Management Plan which consists of six components. The implementation and enforcement of these components, listed below, is collectively referred to as the Stormwater Management Plan.

1. Public Education and Outreach
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management for New Development and Redevelopment
6. Pollution Prevention and Good Housekeeping for University Operations

In order to achieve the goals of Stormwater Management the unit works to maintain compliance with all applicable state and federal regulations regarding water resources, provide a regulatory framework to ensure UT's development has minimal impact on the environment, promote low impact development to help protect the area's natural hydrologic cycle, manage the ever growing Stormwater Infrastructure, and engage the community through public participation and education outreach events.

FACILITIES UNIT SUMMARIES

FACILITIES OPERATIONS

Director, Bob Caudill

Building Finishes



Building Finishes provides a diverse range of services directed toward special projects, routine maintenance and upgrading facilities. Services provided include: building or demolishing walls; installing or removing windows and doors; repair-

ing floors, walls, ceilings, windows and doors; installing whiteboards, glass boards, chalkboards and corkboards, forming, pouring and refinishing concrete walls, steps and retaining walls; laying blocks, brick and stone; repairing concrete sidewalks and other walking surfaces; installation and repair of cubicle furniture and work furniture; and the installation of new exterior building signage and Cone Zone signage.

Building Finishes also oversees Painting & Sign Services which includes a crew of room painters as well as a crew that is responsible for exterior signage and interior signage through the UT campus.



Painting Services: Building Finishes oversees a crew of room painters who perform 99% of the maintenance painting for all public areas in all campus buildings. Painting Services is also responsible for the repair and finish of sheetrock and interior/exterior plaster. The group also sandblasts and pressure washes buildings and hardscape on grounds.

Sign Services: The Facilities Operations Sign Shop is responsible for exterior signage and interior signage throughout the UT campus. They also specialize in engraving for desk plates and room identification plates.



Sign Services has the ability to make banners for any occasion. For those specialty jobs, they can also provide custom letters and graphics to fit a wide variety of needs.

Accessibility for the Disabled: Building Finishes coordinates curb cuts in streets and sidewalks, installation of ramps, lever handles, visual alarm systems and other devices. The team also organizes construction or maintenance services required for appropriate accessibility for the disabled. The Associate Vice Chancellor of Facilities Services is a member of the various campus committees which generally oversee accessibility for disabled individuals.

Building Services



Building Services provides all professional building service needs to all academic and athletic facilities. This includes "T Cleaning" of all areas, all hard floor care, restroom sanitization, carpet care, and routine rubbish and recycling removal.

Building Services, also, handles the cleaning of UT athletic venues including the 102,000 seat Neyland Stadium. Special requests for services such as window washing, and pressure washing are also coordinated through this subunit. Special events at Thompson-Boling Arena are set up using Building Service personnel. This includes, concerts, graduations, men's and women's basketball games, and other sporting events. Building Services operates seven-days-a-week, 24-hours-a-day to best serve the university community.



UT Recycling

UT Recycling provides recycling collection services to all campus buildings and provides compost collection services to most campus dining facilities. The office promotes simple living and the zero Waste lifestyle. UT Recycling is responsible for engaging the UT community through volunteer opportunities and educational programs, as well as the contribution to the development of sustainable practices and planning.



UT Recycling was founded as an operational entity within Building Services in 2003. Today, with four full

FACILITIES UNIT SUMMARIES

time employees, two full time Americorps members, and a team of student workers, UT Recycling provides quality services to all campus buildings and makes continuing strides to minimize all forms of waste produced on, and removed from campus.



Landscape Services



Landscape Services is responsible for the landscape maintenance and upkeep of the University of Tennessee's Main and Agricultural campuses, as well as the Cherokee Farms site. The total area represents 600 acres of space on the Main

and Agricultural campuses and an additional 200 acres at Cherokee Farms.

Four groups make up the Landscape Services subunit: Landscape Management, Arboriculture, Turf Management, and Heavy Equipment Operations.

Landscape Management

Landscape Management has nine crews consisting of 30 employees plus student employees. The university is divided into eight zones and each zone is maintained by a separate crew. The group also has one large crew responsible for mowing the turf and leaf removal through the entire university.



The nine maintenance crews are responsible for keeping the campus clean and beautiful. Throughout the year they:

1. Prune and trim trees and scrubs
2. Control the weeds in the landscape beds
3. Apply fresh hardwood and pine straw mulch
4. Install seasonal flowers in the spring and fall
5. Aerate and over-see turf areas
6. Renovate or remove overgrown or dead shrubs
7. Install new trees and shrubs
8. Create new and renovate old landscape beds
9. Integrated Pest Management

10. Trash receptacle service and litter removal

11. Clean surface drains



Every employee in Landscape Services is considered essential personnel. This means that on top of the subunit's regular responsibilities, personnel are available to help clean up after any special event including all home football games. Landscape Services also

takes care of weather related cleanup including high-wind events and snow/ice removal. The nine Landscape Management crews are on a rotating schedule so that one crew is working every weekend to support weekend events and to take care of any issues that may arise.

In addition to the above mentioned personnel, the group has a two-man irrigation crew that maintains and repairs 36 irrigation systems on campus. As of July 2015, approximately 25% of the landscape and turf on campus is irrigated with more being added with each new capital improvement.

Turf Management

Turf Management will be established in late summer of 2015 with the addition of a Turf Manager. A year-round turf management program will be established to improve overall quality of turf throughout campus. Mowing operations will report to this area of Landscape Services.

Heavy Equipment

Facilities Heavy Equipment Operations is a group within the Landscape Services subunit that provides diverse support campus wide. Heavy Equipment services



include grading, excavating, trenching, demolition, street sweeping, hauling, asphalt preparation and repair, fence repair, general repair welding, handling and placement of heavy pieces of equipment, crane operations, snow and ice removal, bush-hog service, small engine repairs, diesel service/repairs, and other miscellaneous activities.

FACILITIES UNIT SUMMARIES

The group consists of six team members who provide support to university departments including Utilities, Construction, Athletics, UT Institute of Agriculture, and Housing Operations, as well as many of the academic departments.

Arboriculture

Arboricultural Services was formed in 2015 to provide tree care and maintenance services to the entire University of Tennessee, Knoxville campus.



Services include:

- Preventive Maintenance Pruning
 1. Clearance of streets, sidewalks, fixtures and buildings
 2. Removal of dead and defective branches
- Removal of dead and dying trees
- Tree selection and planting
- Insect and disease control
- Tree preservation during construction

Lock & Key Services



Lock & Key Services oversees the issuing of all locks and keys, and is responsible for the maintenance of all campus locks and door hardware as well as the keying of new buildings and the rekeying

of existing buildings when necessary to include department moves, lost keys and special requests within departments.

The subunit produces keys for desks, filing cabinets, mailboxes, vehicle keys for university owned vehicles, and almost any other type of key that can be duplicated. Lock & Key Services also has the capability to code cut some keys with a software program and uses a key cutting machine when there are no keys available.

In addition, this subunit services and changes combinations on both mechanical and digital safes across campus.

Sanitation Safety



Sanitation Safety is responsible for pest control and asbestos abatement.

Pest Control: Sanitation Safety provides comprehensive pest control services. The unit 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.

A paging system enables prompt response to trouble calls. Sanitation Safety has managed these services on and off campus for more than 35 years. Ongoing yearly recertification and continuing education is a necessity to this area.

While the subunit's staffing numbers have stayed the same, the personnel continue to provide excellent customer service while the square footage they manage has greatly increased.

Asbestos Abatement: Tests have been conducted in all buildings for friable asbestos.

The Sanitation Safety unit 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. Ongoing yearly recertification and continuing education is a necessity to the subunit.



Alumni Memorial Building

The Alumni Memorial Building Coordinator is responsible for reserving the spaces of AMB for both campus and outside events. Event space includes AMB rooms 27, 32, 210 and the Cox Auditorium.

FACILITIES UNIT SUMMARIES

Rapid Response Team



The Rapid Response Team (RRT) is responsible for special projects, customer initiatives, crises and emergencies. RRT also oversees Transfers and Hauling.

Transfer and Hauling Services

RRT provides transfer and hauling services for the Main and Agricultural campuses. These services include:

- Set up for registration, commencements, SGA elections, classrooms, and special events.
- Pickup and delivery services.
- Arrangement and moving of office furniture and equipment.
- Arrangements with professional moving companies for heavy items and large moves.

UTILITIES SERVICES

Director, Roy Warwick

The Utilities Services unit is made up for four major groups: Electrical Services, Heating Ventilations and Air Conditioning (HVAC), Plumbing & Heating, and Steam Plant.

This unit is responsible for the day-to-day design, operation, and maintenance of the Steam Plant, and all other utility systems on the UT Knoxville campus. Included are several, university owned, large distribution systems such as the 13.2 kilovolt electrical distribution system, a large high pressure steam distribution system, chilled water distribution systems, domestic water distribution system, sanitary and storm systems and various building systems including fire alarm and building security systems.

Utilities Services maintains all large air conditioning and refrigeration equipment, high voltage electrical equipment, main switchboards, high pressure steam regulators and metering for water and electricity.

The Utilities Services unit also assists in the construction, design, and coordination, of utilities for major projects and the coordination of service outages for those projects as well as regular maintenance or system repairs.

The group works closely with the Knoxville Utilities Board for the distribution and maintenance of public utilities on campus such as sanitary sewer, water and natural gas.

Electrical Services



Electrical Services is composed of three units: Electrical, Electronic Low Voltage, and High Voltage. The Electrical Unit maintains secondary voltage power distribution systems, performing such utility functions as: Installation of new

electrical circuits; Maintenance and repair of building switchboards; Repair of indoor and outdoor lighting systems; General troubleshooting and repair of electrical distribution systems. The Electronics and Low Voltage Unit installs and maintains permanent systems such as fire alarms, clocks, and bell systems. The High Voltage Unit operates and maintains extensive high voltage power distribution systems. This unit performs such functions as: Repair or replacement of underground or overhead distribution lines; Rerouting of power distribution to back-up circuits during emergencies.

Electrical Distribution System:

Electrical Services is responsible for the maintenance and operation of all electrical distribution systems owned by the Knoxville Campus. This includes all primary and secondary systems located on the Main and Agricultural Campuses

and the secondary systems of rental properties located off campus. Therefore, all power outages required in any university building for renovation or maintenance work being performed by outside contractors must be scheduled through the Utilities Services unit. The actual discontinuance and restoration of power will be performed by Facilities Services employees with the assistance of the Knoxville Utilities Board as necessary.

Electrical Outlets:

Dedicated electrical outlets can be provided by Electrical Services. Dedicated electrical outlets may or may not be a dedicated circuit for a particular piece of equipment, but the circuit may be dedicated for a particular type of equipment such as computers.



FACILITIES UNIT SUMMARIES

Electrical Requirements for Offices, Laboratories, or Special Equipment:

All standard 120 volt, single-phase circuits are limited to 20 amperes of current capacity. Electrical Services is consulted to determine the appropriate phase and voltage required for any area in which equipment is to be installed which requires power other than 120 v., single phase, 20 amp. service.

Electrical Services also installs new race ways for computer cabling and network connections.

Electrical Wiring Changes in Buildings:

Facilities Services must make, approve, or supervise any changes to the electrical wiring within buildings. This includes installation of wiring for security systems.

New installations/changes and general problems with electrical service are also addressed with Electrical Services.

Security:

Electrical Services installs and repairs card readers for campus buildings. This unit also installs campus security cameras.

Heating Ventilations and Air Conditioning (HVAC)



Air Conditioning Services provides maintenance and repair services for all HVAC (heating, ventilation, and air conditioning) equipment and systems on the main campus, agricultural campus and off-campus buildings.

The team's responsibility includes maintaining and repairing all existing equipment, including rebuilding/refurbishing chillers, maintenance/replacement of large motors and fans included in air conditioning systems, and maintenance, repair, and replacement of air conditioning controls. This includes installation of new or replacement components needed to maintain existing systems on campus. All mechanics on the team are EPA certified to recover and handle regulated refrigerant gasses in all systems. Emergency service for air conditioning/heating equipment is available 24 hours a day.

Basic Services:

Air Conditioning Services maintains existing equipment as well as installation of new and replacement equipment, including rebuilding/refurbishing of chillers, maintenance/replacement of large motors and fans serving air conditioning systems, and maintenance, repair,

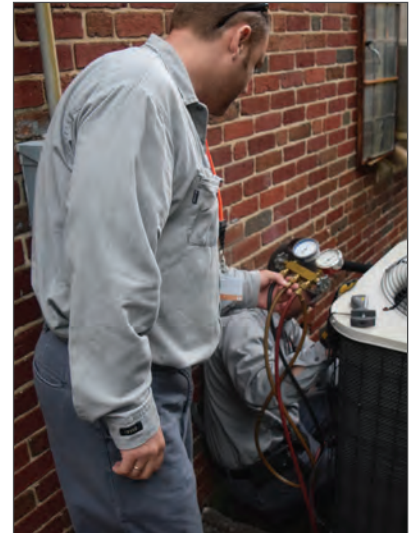
and replacement of air conditioning controls (pneumatic, electric, and solid state).

Approximately 45,000 tons (12,000 BTU per ton) of cooling capacity is available, provided by the following equipment:

- Over 3,000 window air-conditioners, ranging in size from 5,000 to 32,000 BTU.
- Approximately 3,500 chilled water fan coil units
- Approximately 1,500 through the wall P-TAC units
- Approximately 500 package & split systems ranging in size from 1 to 60 tons.
- Seventy-seven chillers (centrifugal [water cooled] and air cooled units) ranging in size from 20 to 1500 tons.

Additional Services:

- Provides maintenance, service, and repairs for stationary air compressors serving laboratory buildings on campus.
- Testing and evaluation related to maintenance of fume hoods and associated fan systems.
- Testing and evaluation of supply and exhaust air systems serving all campus buildings.
- Testing, evaluation, repair or replacement of all building BAS control systems on campus.
- Installs, maintains, and repairs all ice machines for food service, laboratories, and campus buildings.
- Installs, maintains, and repairs refrigeration equipment with temperatures ranging from 98.7 degrees F to -180 degrees F.
- Responsible for maintenance and service of food service refrigerators and freezers.
- Responsible for maintenance and service of environmental growth chambers and hot boxes serving laboratories.
- Responsible for the proper operation of building ventilation systems.
- Responsible for central vacuum systems used in laboratories (and some portable systems, upon request).



FACILITIES UNIT SUMMARIES

- Perform chemical analysis on cooling tower systems, building water loops (chilled water and heating systems), and geothermal water loops.
- Repair and maintain pumps serving all water loops on campus.
- Review design and construction for new facilities being built on campus.

Heating:

Air Conditioning Services is responsible for repairing all heating system equipment within buildings on the Main and Agricultural campuses as well as off-campus buildings. Both systems which use steam from the central steam plant, and those with separate or stand-alone systems. Approximately 100 different heating systems are maintained on campus in addition to the central steam system equipment. Heating systems located in various buildings on the campus include, electric, gas fired boilers and furnaces, and hydronic hot water heating systems.



Plumbing & Heating



Plumbing Services performs routine, periodic utility maintenance on domestic water systems (including sewers), low pressure distribution systems within buildings, and storm sewers. It also provides special project services.

Services provided include:

- Responding to emergencies, such as burst pipes.
- Monthly rodding of main sewer lines at University Housing and Food Services.
- Periodic cleaning and lubrication of blending valves.
- Periodic cleaning of steam traps and water reducing stations.
- Periodic maintenance of backflow preventers, sterilizers, autoclaves, and dishwashers.



- Periodic lubrication and operation of fire hydrants, sprinkler, and hose systems.
- Periodic cleaning and maintenance of circulating, condensate return and sump pumps.
- Installation and replacement of restroom fixtures.
- Insulation of pipes within buildings and underground.
- Replacement of large hot water tanks with small instantaneous steam heaters.
- High pressure steam distribution system.

Water Fountains:

Plumbing & Heating Services is responsible for the maintenance of water fountains. All water fountains are tested regularly.

Steam Plant

Steam Plant is responsible for the maintenance and operation of the central steam plant which serves both the Main and Agricultural campuses. More than 153 buildings, containing more than 8,000,000 square feet of space, are served by the Steam Plant. Steam is used for heating and domestic hot water in these facilities, as well as to operate sterilizers, autoclaves, etc. Eleven miles of underground steam pipe and return lines crisscross the main and agricultural campuses.



Major components of the Steam Plant include:

- One spreader stoker fed, coal-fired boilers rated at 100,000 pounds per hour each, one boiler that can burn coal or natural gas rated 100,000 pounds per hour on coal and 70,000 pounds per hour on natural gas. One natural gas fired turbine generator rated at 5MW with heat recovery boiler. The heat recovery boiler is rated at 23,000 pounds per hour with turbine exhaust and can boost capacity to 110,000 pounds per hour with auxiliary duct burner. On average, 105 tons of coal are burned each day.
- Two natural gas compressors that boost fuel pressure to the turbine to 200 psig.
- One roller type coal crusher. This crusher makes it possible to purchase nut and slag coal for the Steam Plant. The crusher is used to convert nut and slag (0 to 3 inches in diameter) into stoker coal (1/4 inch to 1 1/4 inches in diameter) when necessary.

FACILITIES UNIT SUMMARIES

- One coal conveyor and storage bin system. Coal comes out of the crusher onto a conveyor and elevator system which loads the coal into 200 ton capacity bunkers located above the boilers.
- One 3-cell electrostatic precipitator. This precipitator traps the approximately one ton of fly ash generated each day, and brings particulate matter emissions well within the EPA standards. The fly ash is conveyed to a closed container for transport.
- Truck scales. The university receives its coal by truck. The scales, certified by the State of Tennessee, are used to weigh each truck delivering coal. The ticket generated by the scales serves as the basis for payment for the coal. The coal delivered is randomly tested to ensure that it meets the conditions specified in the contract.
- Water treatment and testing equipment. Water must be treated before being introduced into the boilers to prevent the build-up of scale corrosion. Water is tested and treated continuously, and the process also allows for the identification of problems with the steam distribution system.
- Emergency generator: The Steam Plant has a 900 horsepower emergency generator which can power the plant during an electrical outage. The generator is powered by fuel oil. The 6,000 gallon tank ensures that the plant can operate for several days in the event of a severe electrical emergency.



ZONE MAINTENANCE

Director, Terry Ledford



The Zone Maintenance unit is responsible for maintenance of all systems related to the 250-plus buildings on the Main and Agricultural Campuses. This includes lighting and electrical systems, heating, ventilating and air conditioning systems,

plumbing systems, laboratory systems, and structural and building envelope systems including roofing, walls and windows.



With the more than 1,500 years of combined experience (>10 year average) of Zone Maintenance personnel, the unit has developed a workforce that, along with being very well equipped and adept at handling everyday requirements, is able to quickly respond to and diffuse any emergency situation

that may arise. These two characteristics are essential for an educational and heavy research campus as diverse in service and customer needs as UT Knoxville.

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.

Customer Service

Zone Maintenance personnel are the front-line response for all issues that may arise within a building. Customer service is a major emphasis in the unit's training as meeting the needs of our customers is

our main mission. The unit's customers are faculty, staff, students, and visitors to the University.



Steam Plant Conversion Project:

- Project Status: Under Construction
- The Steam Plant Conversion Project is progressing in three phases and will continue for approximately three years.
- Conversion from coal to natural gas.
- State of Project: March 2014
- Expected Completion: 2016



FACILITIES UNIT SUMMARIES

Lighting systems

With 250-plus buildings there are thousands of lighting fixtures with hundreds of different style fixtures and lamps. This includes incandescent lighting, which has mostly been phased out and replaced with compact fluorescent and LED.



Metal halide and high pressure sodium fixtures are in the process of being replaced with or retrofitted to LED. While some of these are retrofitted en masse when funding is available, these retrofits are also done as a normal course of maintenance when the cost to repair approaches the cost to retrofit or replace.

Electrical systems

Zone Maintenance personnel have recently received arc flash training, clothing, and tools and are able to repair more and more systems that we used to rely on Utility Shops to repair. These enhanced capabilities are key to being able to respond to customer's needs on a more timely basis.

Heating, Ventilating, and Air Conditioning Systems



Heating systems: With the broad range of ages of buildings we have a veritable museum of HVAC systems. Most of the heating is powered via steam from the Steam Plant with heat exchange systems ranging from convection radiators to variable air volume reheat systems via direct steam or heating water systems

via steam to water heat exchangers. We also have gas, electric, and radiant space heaters, and baseboard heat via electric or heating water.

Air conditioning systems range from DX window air conditioners, to DX to air distribution systems, to chilled wa-

ter systems with variable speed variable air volume air handlers and variable speed pumping systems. Piping systems range from two-pipe to four-pipe, plus we still have a three-pipe system in place. Air distribution is via constant and variable volume air handling systems, fan coils, and PTACS. Air handlers in laboratory spaces are designed for 100% outside air for dilution.

In several laboratory buildings we also provide a process cooling water loop where the recirculated water is cooled to about 60F to eliminate the waste from once through water from the domestic system.

Ventilation systems range from residential style restroom exhaust fans through variable volume laboratory fume hood systems with variable speed fans and energy recovery.

Plumbing systems

As with other systems the plumbing systems cover a broad expanse of time. Plumbing fixtures span from sink and dual spout and handle faucets to automatic sensors and mixing valves to control water temperature. Hot water is provided via electric, gas, or steam driven heaters. In most buildings the hot water



is looped to recirculate in order to provide hot water almost instantaneously. Sanitary drainage systems include older cast iron, to PVC, to glass and acid resistant materials for laboratories. Drainage from laboratories flows through acid neutralization prior to discharge to the local utility.

Laboratory Buildings

Zone Maintenance also has responsibility for laboratory water systems including deionized and reverse osmosis systems.

Compressed air systems range from small reciprocating compressors for HVAC controls to larger oil-free screw compressors with air dryers delivering air at minus 40 dewpoint.

Laboratory buildings have natural gas distribution to fume hoods and bench tops and a nitrogen generating system in Science Engineering.

Vacuum systems for laboratories are provided via recip-

FACILITIES UNIT SUMMARIES

rotating pump systems up to multi-pump screw or rotary pumps.

Zone Maintenance has responsibility for the building envelope including walls, windows, doors, and roofs. These are systems that require continuing attention in order to maintain proper indoor conditions for building occupants and to maintain the structural integrity of the systems.

Elevators

There are over 200 elevators on Campus ranging from two-stop wheelchair lifts to high-rise multi-floor units. Elevator types range from hydraulic, to traction, to machine room less elevators. Elevator maintenance is handled via contract with a local office of a major elevator manufacturer. The contract requires 24/7/365 response within one-hour.

Other Responsibilities

Although food preparation is provided by contract with an outside company, Zone Maintenance personnel provide maintenance and repair for all of the food service equipment. This includes all of the stoves, ovens, dishwashers, and conveyor systems in all dining establishments.

Zone Maintenance also provides system maintenance for all Athletics facilities and most of the Housing units.



One Call Program (One Call Shift):

Zone Maintenance provides maintenance coverage on the UT Knoxville Main and Agricultural campuses 24-hour-a-day, 365-days-a-year. Customers can call the Facilities Services One Call Line and be in touch with someone who will either be able to remedy or stabilize a problem. One Call personnel also have the authority to call in additional resources as necessary.

Predictive Maintenance:

Predictive Maintenance is a proven, effective advancement program in the field of Preventative maintenance. Purchase of the proper equipment, and the technical expertise provided by the STAR Team, have now provided the impetus for Facilities Services to make the transition



from reactive maintenance to predictive maintenance. The STAR Team is tasked to learn the skills to properly use the equipment, and to then pass the training on to the Maintenance Specialists in the buildings. The ability of Maintenance Specialists to acquire and demonstrate these skills should factor into their advancement through the Career Ladder Process.

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 by renovating their lab space, helping them get acclimated to campus, and installing their lab equipment to ensure they can hit the ground running when they get to campus. The STAR Team also assists existing researchers with changes in programming requirements and assisting existing researchers with day-to-day problems that may arise, such as issues with the lab's HVAC, electrical and plumbing to ensure there are no interruptions to the research.

This subunit took over the responsibility for the TVA Energy Road Map, which includes energy auditing of buildings and working with College of Engineering students on senior design projects that benefit campus by conserving energy. The STAR Team also identifies and implements energy saving projects to be used for the green fee revolving loan fund as part of the roadmap.

The STAR Team is leading the way to predictive maintenance techniques with vibration analysis, shaft alignment, and thermal analysis. Zone Maintenance acquired the equipment to do this type of work and is now training Zone Maintenance personnel to use it to balance all the equipment on campus to maximize efficiency.

865-946-7777

T FACILITIES SERVICES ONE CALL AWAY, 24 HOURS A DAY.

2015 ANNUAL REPORTS



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

FACILITIES SERVICES

FS UNIT ANNUAL REPORTS

SPECIAL PROJECTS:

Archibus



ARCHIBUS

It is Special Project's goal is to guide the Facilities Services team in the development, and installation of the ARCHIBUS software, which is an Integrated Workplace Management System (IWMS). It will enable significant enhancements in the department's ability to achieve the goals of increased effectiveness and efficiency and to improve communications with the campus community.

Phase 1 of Archibus was implemented effective January 1, 2015. Development attention is now turned to the remaining Archibus functions to be implemented.



Facilities Services Showcase

Initiated the development of a report to highlight the department's progress. It transformed into a planned annual report called Showcase and Annual Report. The unit is working with Communications & Information Services on finalizing the first issue. The report will help readers better understand the scope of the responsibilities and activities of Facilities Services.

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:

Business Services

Accounts Payable is responsible for the processing of all invoices for the Facilities Services Department. In FY13, the Facilities Services Accounts Payable office processed more than 26,000 invoices.

FY13
26,000
invoices

Accounts Receivable is responsible for the department's transfer vouchers, invoicing, and receipting of payments.

Business Services billed more than 17,000 work requests since December 2014.

\$
Payroll for
700+
employees

Payroll/Personnel process payroll weekly for approximately 700 employees, process all personnel request, maintain FS personnel files and as-

sist employees as needed with questions regarding payroll benefits.

Business Services provides contract administration for Facilities Services departmental, university, and state contracts, including preparing PDs as needed for new contracts or for rebidding expiring contracts. This group also works with Facilities Services users to prepare and update contract specifications for bidding by the Purchasing Department.

The Clerical Pool has been cross-trained to provide back-up for all clerical functions.

Within Business Services, the workload for support staff has been rebalanced and adjusted as required by Archibus processes and IRIS interface requirements.

Central Supply:

Central Supply will begin investigating the use of a bar coding system after July 1, 2015. The intent will be to facilitate inventory management and control as well as provide better material usage information.

BAR CODING



FS UNIT ANNUAL REPORTS

Inventory – Central Supply’s physical inventory results are exceptional year after year.

FY 13:

- Percentage of items with no discrepancy – 99.83 percent
- Total dollar value accuracy – 99.99 percent (Dollar value of merchandise: \$628,460)

FY12:

- Percentage of items with no discrepancy – 99.66 percent
- Total dollar value accuracy – 99.99 percent (Dollar value of merchandise: \$588,992)

COMMUNICATIONS & INFORMATION SERVICES:

The Communications & Information Services unit has expanded its reach, and grown into an even more service-diverse unit, providing wide-reaching green energy initiatives and programs, eased departmental and inter-departmental communication, provided faster and more efficiently target IT support and maintenance, and organized a number of challenging new programs for Facilities employee development through both internal and external training.

Sustainability



The Sustainability Office maintains an award winning energy program which continues to reduce campus energy each and every year. Some of those programs that received accolades include:

- 10th Annual Power Challenge (early November 2014)
- Saved \$54,000 in energy and water costs
- Held the 2nd Annual Sustainability Day of Service through the Center for Leadership and Service
- ACUPPC Progress Report submitted completed
- In good standing and on track with Climate Action Plan
- Sightlines, Go Green data submission completed
- Paper Consumption, Bike Rack Inventory, Waste Receptacle Inventory and Bike Survey Completed
- EPA Green Power Partnership, “Environmental Leadership Club” awardee



- EPA Green Power Partnership, “Top Power Purchaser in the SEC” awardee
- Recycle Mania national record
- Smart Communities Initiative creation and support. Now housed in Service-Learning, Office of Provost
- Green Office Program creation and development
- Earth Day: Largest campus attendance with the highest number of vendors participating
- Received Sustainable Pioneer Award from TVA Green Power Switch Program
- Georgetown University Energy Prize Competition Quarter Finalist
- Grant partner with City of Knoxville Sustainability Office
- Newly formed Living and Learning Community, “The Greenhouse”
- ReVOLve In/Out Sale
- Events to reduce landfill waste from student move in/move out
- First ever Sustainability Day Celebration
- Make Orange Green campaign relaunch
- Achieved “Two Star Partner” status via the TN Green Star Partner Program
- First completed project via the Green Revolving Fund; SERF lighting retrofit
- Savings from project will be directed to Green Revolving Fund over the next five years



FS UNIT ANNUAL REPORTS

Communications & Public Relations

The Communications & Public Relations subunit has continued to develop new programs within the department while maintaining those already in place. The office has also expanded the department's reach through social media and public relations, while maintaining internal and external surveys and department documents. Some accomplishments include:



- SACS Accreditation narratives
- Facilities Services Emergency Response Plan maintenance and organization
- Facilities Services Departmental Awards
 - Employee of the Month Program – in its second year
 - Facilities Services Exceptional Team Awards – launched January 2015
- Launch of Facilities Fundamental campus workshop program:
 - Landscape Workshop
 - Sustainability Workshop
 - Paint Workshop
 - All three workshops accompanied by materials and videos created by Communications & Public Relations
- Departmental Videos
 - Facilities Services University Landscape Academy
 - Facilities Fundamentals
 - Steam Plant Conversion
 - Orientation Video for Department-wide use
 - Launch of Facilities “How-To” videos
- Customer Handbook: Details a general description of Facilities Services, important department phone numbers, Web site links, and an explanation of Archibus, and promotes the One Call number.
- Departmental Policies
 - Maintains and organizes all departmental policies
 - Updates are made and posted as necessary



- Newsletters
 - The Facilitator (bi-monthly)
 - Facilities Weekly Newsletter
 - Distribution List of both newsletters expanded to 12 other departments on campus
- American School & University Publications
 - 2014 & 2015 Educational Interiors Publications
 - 2014 & 2015 Architectural Portfolio Publications
 - All of our projects have been featured in the “Outstanding Design” category
- Under Construction Web page
- Updating Cone Zone Information
- Cone Zone Signs, along with placement and announcements
- Quarterly Construction Reports in partnership with UT Media Relations
- Departmental Events
 - Holiday Party, Third Shift Holiday Party
 - Fourth of July Picnic
 - Chuck Thompson Award Ceremony
 - Building Services CCP Ceremonies
 - Campus-wide Events
 - Student InVOLment Fair
 - New Student Orientations
- Departmental Rebranding



T FACILITIES SERVICES

- Surveys
- APPA FPI Survey
- Employee Satisfaction Survey
- Customer Satisfaction Baseline Survey
- Facilities Fundamentals Participant Surveys
- Building Representative List



FS UNIT ANNUAL REPORTS

- Social Media: Currently maintains seven social media sites – Facebook, Twitter, Instagram, Google+, Flickr, YouTube and Pinterest



- Public Relations
- TN Today
- Vol Update
- Coordinate with local media to facilitate campus/Facilities pieces

IT Support & Maintenance

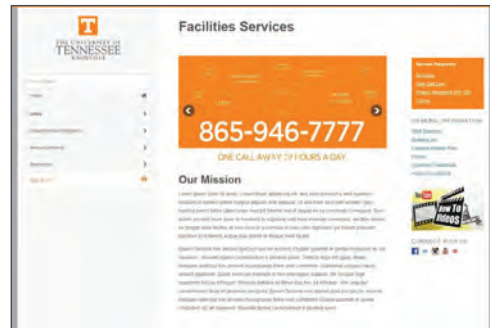
The IT Support & Maintenance team has continued to deliver superior support for infrastructure, data management, communications, and PC Support to all of Facilities Services. Some milestones include:

- Assisted with merging Facilities Services and Security skyboxes into one cohesive service environment
- Assisted in the installation of the fire alarm and A.C. control systems across campus
- Satellite computer labs have been installed across campus to allow easier access to employee's online paychecks and to allow easier access to employee's online paychecks and to take advantage of our training initiatives



- Computer security has been strengthened with the removal of user's administrator rights from all PCs
- The Facilities Web server has been successfully transferred to OIT servers
 - File server to follow (via T-storage)
 - Teletime server to follow
 - Elevator monitoring server to follow
 - SCADA server to follow
 - UTPD monitoring backup server to follow (Cardax/Gallagher project)

- The Facilities Department Web site is currently in the process of being updated using the recently released university templates
- SCUP roll-out
- Event Solicitation System management
- Chemical Inventory System management
- Online small-scale drawing management



Employee Training & Development

Facilities Services Employee Training & Development has accomplished many goals throughout the past year. Some accolades include:

- Developing Career Paths
 - Construction
 - Steam Plant
 - Career Highway
- OSHA Regulatory Training
 - Skillsoft
 - Ensafe audit results
- SKF Laser Training
- Performance & PDQ Review
 - New form
- HR Compensation Training
- Employee Orientation
 - Expanded to two day sessions
- Search Committee Handbook
 - Committee Chair Checklist
 - Taleo Manual
- Diversity Training
 - Supervisory
 - Shop-to-Shop Staff
- Archibus Training
- Football, Game-day Training
 - Increased staff visibility
 - "See Something, Say Something"
 - Weather Tracking



FS UNIT ANNUAL REPORTS

- Customer Service Training
 - Appearance
 - Friendliness
 - Professionalism
- Assistant Forman Training (Building Services)
 - Co-worker to Supervisor
 - Supervisor Role
 - Coaching
 - Correcting
 - Diversity
 - Inclusion
 - Professionalism
- Promotion/Increased use of 24/7 Computer Lab
 - Paycheck statements
 - Training
 - Email/Communication
 - Employment Opportunities
 - News/Information



and several were installed as an overall security upgrade at Art & Architecture. A number of labs have been improved. More than 200 painting projects and 93 carpeting projects were completed by the subunit between June 2014 and July 2015.



Roof Replacement



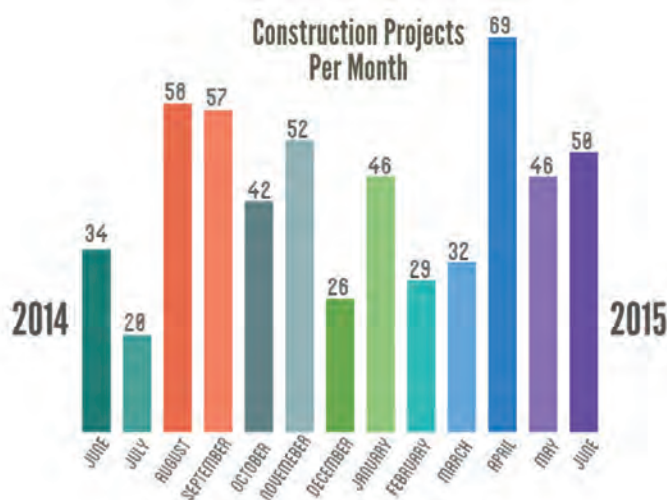
Work continues on the roof repairs on campus. Working with Purchasing, Construction was able to issue multi-tiered contracts to numerous contractors so repair work can be completed simultaneously rather than one roof at a

time. A total of 89 roofing projects have been completed as of July 2015 with 21 more currently under construction. The cost of these roofing projects across campus is approximately \$10 million to \$15 million and include built-up, tile, slate, shingle and metal roofs. The Construction unit prepared all specifications and provides project management for this multi-million dollar endeavor.



CONSTRUCTION SERVICES

Construction Coordination



The unit worked with the classroom upgrade committee to make yearly improvements to campus classrooms. Improvements are made to approximately 40 to 50 classrooms annually and are set on an eight year rotation.

New security cameras and emergency phones have been installed at buildings around campus resulting in increased security. Specifically, more than 50 additional cameras were installed at Hodges Library, more than 40 have been installed at Fraternity Park Drive,

Estimating

Construction Team

- Painting and carpeting at Hodges Library (\$500,000)
- Vol Shop at University Commons
- Vol Shop on Cumberland Ave.
- Auditorium 3rd Floor at Earth & Planetary Sciences
- Henson Hall (\$2 million)
- Perkins Hall Classrooms (\$1 million)
- Humanities & Social Sciences (\$1 million)
- Dougherty Engineering – four lab projects and Governor’s Chair 3rd Floor
- College of Nursing Training Classroom
- Hodges Library Elevator Lobby
- UT Welcome Center

Cross Training

Construction is currently in the process of cross training three trades within the unit – electrical, carpentry and plumbing. Employees still have specialties within the unit, but are gaining extra skills and knowledge through this training process. The cross-training of these trades will allow the unit to streamline projects which will result in an increased number of projects that will be able to be completed throughout the year.

Administrative

- Facilitated a paradigm shift for Design Services, creating esteem and respect for and within the department by providing an authoritative voice for the campus.
- Upgraded the physical work environment:
 - Cleaning
 - Painting
 - Re-organization of personnel into cohesive work groups
 - Re-organized physical resources
 - Upgraded furnishings
 - Providing professional work environment
- Reorganization/reassignment of staff in conjunction with Construction Services
- Established bi-weekly progress meetings
- Bi-weekly progress reports to support AVC
- Established UTFP/UTFS monthly round table
- Established bi-monthly meeting with the City of Knoxville
- Established liaisons for each college and auxiliary
- Hired and integrated four new project managers
- Created, hired and integrated GIS Coordinator
- Created, hired and integrated Stormwater Coordinator

Stormwater Management

- Created and implemented Stormwater Plan
- Eradicated historical campus stormwater issues
- Implemented Stormwater Committee
- Instigated public education program for stormwater issues
- Created Stormwater Web site to report issues or make suggestions



GIS Mapping

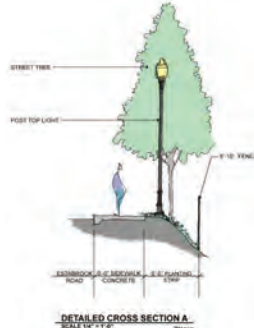
Successful transition of campus mapping, including Cone Zone, Parking and Accessibility.



FS UNIT ANNUAL REPORTS

Landscape & Planning

- Managed design and implementation of campus signage and wayfinding
- Managed design and implementation of Campus Beautification Projects:
 - Engineering Quad
 - 2nd Creek
 - Blueberry Falls
 - Sorority Village
 - Lake Loudoun Intersection
 - Ayres North Slope
 - Torchbearer Plaza advanced from design to construction
- Updated Campus Landscape Standards
- Design Support for Landscape Services
 - Special Projects
 - Seasonal Color



Interior Design

- Completion and approval of campus maintenance painting color system
- Standardization of interior signage for existing buildings

Space & Archives

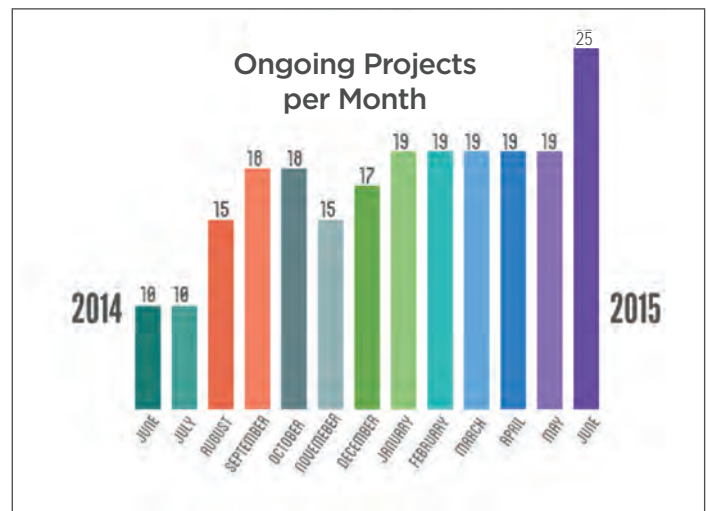
- Continued created of digital files for campus paper archives
- Successful 2014 Space Inventory
- Completed Gender Neutral Inventory
- Complete Classroom Nationalization Inventory
- Successful transition of emergency evacuation plans, successfully tied to branding

Project Management

- City of Knoxville interest in Lake Avenue Garage initiative by staff in Bi-Monthly COK/UTFS meeting, subsequent recommended to administration.
- Significant influence on Value Engineering of Major Projects
 - Gibbs Hall \$5 million
 - West Campus Redevelopment \$9 million
 - SSC \$3 million
 - Strong Hall \$3.5 million
 - Henson Furniture 50% reduction from \$400k to \$200k
- Improved staff training via lunch and learns, provided in excess of 250 contact hours for our staff
- Developed and implemented QAC for document checking
- Developed visual job tracking system for monitoring

progress

- Implemented system for filling Code Coordinator Vacancy while studying viability of position
- Created standard digital file structure
- Successful management of major completed projects:
 - Fred Brown Residence Hall
 - Student Union Phase 1 Completion
 - Strong Hall advanced from Design to Construction
 - Cumberland and 13th advanced from Design to Construction
 - Support Services advanced from Design to Construction
 - Steam Plant Conversion
 - New Residence Hall advanced from Design to Construction
 - Stokely Gibbs Parking Garage advanced from Design to Construction
 - West Campus Redevelopment Phase 1 advanced from Design to Construction

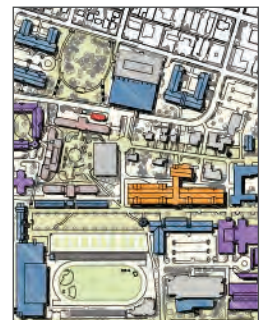


Programming Efforts

- Lake Avenue Garage Concept to Designer Selection
- Engineering Nuclear Completion of Program
- West Campus Dining Program

Master Planning

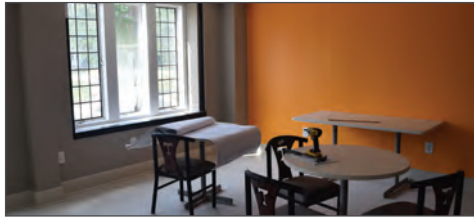
- Providing assistance with Utility Master Plan allowing its completion
- Completion of Hill Master Plan
- Updating of Campus Master Plan
- Pool Utilization Study
- Relocation of Motor Pool
- Ag Garage Site/Shading Study



FS UNIT ANNUAL REPORTS

Classroom Projects

- Perkins Hall
- Henson Hall
- Humanities and Social Sciences Building

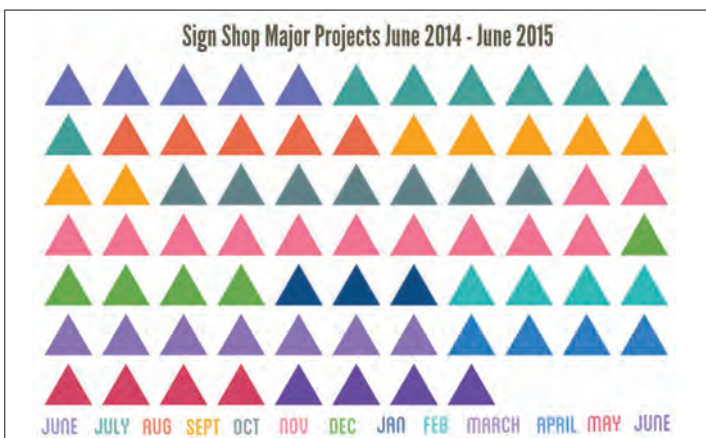


FACILITIES OPERATIONS:

Building Finishes

Sign Services

Sign Services averaged 12 major projects per month from June 2014 - June 2015 while also completing other service requests.



Painting Services

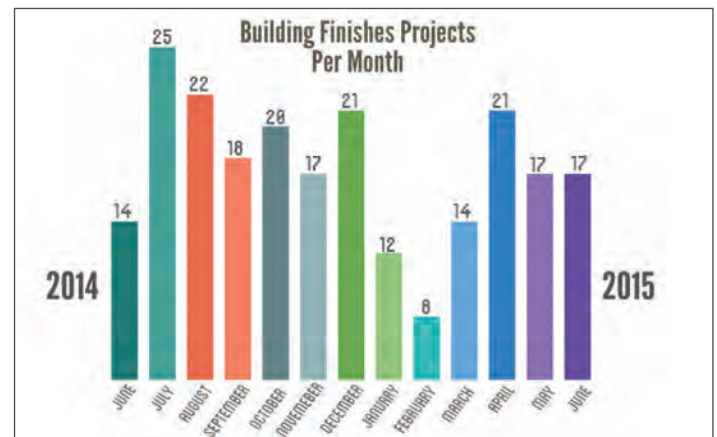
Painting Services painted common areas and classrooms in 35-plus buildings from June 2014 - June 2015. The group also tackled major renovation projects including Henson Hall, HSS, Perkins, and Alumni Memorial.



Building Finishes

Throughout the year, Building Finishes poured and repaired concrete at more than 20 buildings, repaired

dozens of sidewalks and installed items in more than 70 buildings on the main and agricultural campuses.



Building Services

The Building Services subunit maintains more than seven million square feet of academic and athletic space at the Main and Agricultural campuses and provides 24-hour-a-day 7-day-a-week service when and where it is needed. This includes all special event setups and cleanups – concerts, commencements, athletic events, high school graduations, camps, etc.



T Cleaning Program



T Cleaning allows in-house custodial staff to deliver professional custodial services to building occupants. All buildings are equipped with the proper supplies and equipment to provide "Total" cleaning services to each building.

Reception areas, restrooms, classrooms, and public and common areas receive nightly service. Private offices receive a detailed vacuum, polished desks, and trash and recycling removal on the appropriately scheduled night. T Cleaning aids in the university's VolVision of becoming a Top 25 Research Institution.

FS UNIT ANNUAL REPORTS

Health & Safety

It is the goal of Building Services to select products and chemicals that are best suited to keep the campus healthy and to provide a safe environment.

- Hospital grade disinfectants in restrooms, locker rooms and showers
- 92% of the cleaning products used are certified environmentally friendly
- HEPA vacuum cleaners improve indoor air quality
- Proper waste disposal
- Low or non VOC floor finishes
- Non-carcinogenic cleaning agents
- Hand soap with no animal products developed and approved by the School of Public Health's Clean Hands Task Force



Cleaning Certification Program (CCP) Training



Developed and implemented by Building Services, the Cleaning Certification Program is designed to educate our custodial staff on cleaning procedures and

professionalism. This program will help standardize the cleaning procedures for the university.

CCP training is held twice weekly for 22 weeks and is the basis for Facilities Services' professional custodial operation. Enrollment in the program is selective based on an employees' performance and work record. The ultimate goal is 100% participation and graduation of our custodial staff.

In addition, when the CCP program is successfully completed, it enables the graduate to earn up to a 9% pay increase and significantly increases their knowledge and expertise.

Improvement Programs

Building Services has developed several programs to enhance the Facilities Services Department and its service to the university community. Some of these programs include:

- Standardizing supplies such as towels, tissue and

soap, as well as the supply delivery system.

- Monthly probation review to address the performance of new employees.
- Progressive Career Ladder for custodial personnel.
- Formed 11 zones on three different shifts, each with a foreman and assistant foreman to better serve the university community.



UT Recycling

Football Game Day Recycling



Tennessee football previously created more than 27 tons of landfill waste per game, nearly all of which is recyclable or compostable. During the 2014 football season, UT Recycling ranked second place nationally in the Game Day Recycling Challenge. More diligent recycling efforts were made, and by separating food out

of concession stands and in the bowl, UT Recycling was able to divert more waste from landfills than they ever had before. With more planning, football games at Neyland Stadium will divert 90% or more of game day waste from landfills in the years to come.

Some planning efforts during the 2014 Football season included:

- All recycling was single stream, meaning all recyclable materials are placed in a single container
- 550 orange and white recycling bins on concourses (1:1 with trash)
- 100 white compost bins, in concession stands and some concourses
- 175 red-topped recycling bins along walkways, Vol Village and Tailgate TN
- Paper towels in skybox restrooms will be composted



FS UNIT ANNUAL REPORTS

- Blue recycling bags were given to all tailgaters as they entered the lots
- 12 Zero Waste stations with volunteers in tailgate areas include compost bin, recycling dumpster, and trash dumpster
- Four Zero Waste stations in the concourses of the stadium with volunteers
- Walkway and roadway signage, parking garage banners

- “Get Caught Green-Handed” Program – Vols fans caught recycling or composting at Zero Waste locations won a Butch Jones signed football and their picture was featured on the jumbo tron and on UT Recycling’s social media accounts



Tailgate Recycling

Fans entering the tailgate areas were given a blue bag for recycling and a clear bag for landfill waste. Each fan was educated and given customized patches if they were seen properly disposing of their waste.

There were 12 zero waste locations spread throughout the designated tailgating areas with recycle, compost and landfill receptacles. Tailgaters were responsible for bringing their full bags to the stations before or after the game.

Game Day Recycling Challenge

UT placed 2nd in the nation in the Total Recycling category, with 47,560 pounds recycled/composted/donated from the Missouri game.

UT placed 11th in the nation in the Diversion Rate category with a 65.44% diversion rate from the Missouri game

Those two categories were reserved for those who included both stadium and tailgate area trash and recycling.

Among SEC schools UT Recycling placed:

- 2nd in Per Capita Recycling, with 0.493 lbs. per person from the Missouri game
- 3rd in Waste Minimization, with 0.198 lbs. per person

from the Kentucky game

- 3rd in Greenhouse Gas Reduction, with 0.00067 metric tons of CO2 equivalent/person from Missouri game
- 2nd in Organics Reduction, 0.065 lbs. per person from Missouri game
- 3rd in Diversion Rate, with 65.44% also from the Missouri game

Pounds Recycled by School - Season Totals



Campus Recycling

UT Recycling works with students, faculty and staff to reduce waste and improve recycling and composting on campus.

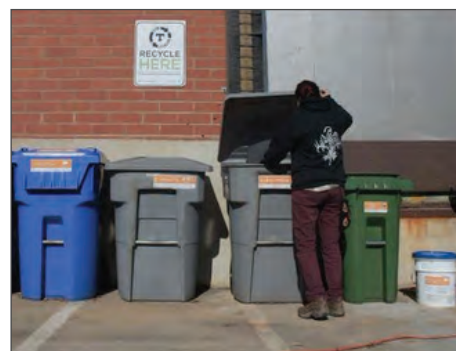
The group has reduced the number of dumpsters and cans on campus which generated a significant savings to the university.

UT Recycling also generates income from recycling scrap metal, printer’s mix, mixed paper, cardboard, pallets, tires and cooking oil.

Public Drop-off

A new campus Public Drop Off was opened by UT Recycling in 2015. Students, staff and faculty are welcomed to drop off their recyclable items at the site located at the UT Recycling offices.

Items accepted at the public drop off site include e-waste, glass and plastic, paper, steel cans, aluminum cans, and toner and printer cartridges. In addition to the new recycling drop-off site, UT Recycling is providing at least



FS UNIT ANNUAL REPORTS

one recycling dumpster at all residence halls with the exception of Laurel Apartments, which is already furnished with 20 on-site recycling bins.

E-Waste Disposal

In 2015 UT Recycling began a new program for recycling e-waste through UT Mail Services. Items can be placed in a UT campus mail envelope and sent to UT Recycling for processing. Items that can be sent through this new program include small batteries, printer cartridges, and small electronics.

Landscape Services

Accomplishments (July 2014 - June 2015)

- Installation of Stephenson and Holman Honorary Garden at McClung Tower Plaza
- Cherokee Farm – Take over complete property landscape and irrigation maintenance from general contractor
- Sorority Village – Take on landscape and irrigation maintenance of seven sorority houses
- Seasonal Flowers – Installation of 20,000 seasonal flowers and 12,000 tulip bulbs
- Landscape Irrigation Systems – Start-up/winterize/maintain 36 irrigation systems
- Fred Brown Hall – Dedication preparations and take on landscape and irrigation maintenance
- Vet Hospital – Construct parking addition
- Lake Avenue Early Learning Center – Construct playground extension
- Demolition of 909 22nd Street and convert site to parking
- Demolition of 916 22nd Street and convert site to parking
- Demolition of 2118 Lake Avenue and convert site to parking
- Lake Avenue – Assist Construction team with grading and preparation of gravel lots for asphalt paving
- Fulton Bottoms – Assist Construction team with excavation, welding of steel



footers, and installation of field pole lights at rugby field

- Fraternity Park – Assist Construction team with improvements to include the dumpster enclosures and light/camera poles
- Preparation and clean-up of campus grounds for football tailgate events
- Preparation and clean-up for the ESPN SEC Nation production
- Coordinate, build and execute the SGA bonfire on Fiji Island
- Dr. Bass Anthropology Facility – Provide vegetation removal on four separate research projects
- Removal of more than 175 tons of leaves from campus
- Campus-wide snow/ice treatment and removal (four separate storms between February 15 and 28)



- Thornton Athletics – Landscape renovation on Volunteer Blvd.
- SACS – Campus-wide preparation
- Dougherty Research Lab – Support for general clean-up prior to grand opening event
- Perkins Hall – Move the solar bus stop to the Agricultural Campus
- Perkins Hall – Move iron sculpture to Tickle Engineering Building to include reconfiguring the existing landscape and irrigation
- Ayres Hall/West Connector – Take on maintenance of improved landscape and irrigation
- Facilities Fundamentals – Presented first session called "Tips for the DIY Gardener"
- Blueberry Falls – Take on maintenance of new landscape and irrigation expansion
- Student Union – Take on maintenance of new landscape and irrigation (phase 1)



FS UNIT ANNUAL REPORTS

- Morgan Hall – Landscape and irrigation renovation install
- JIAMS – Take over new landscape/irrigation maintenance
- TREC – Landscape and irrigation installation
- Phillip Fulmer Way – Assist Building Finishes with ADA concrete walk installation
- 2000 Sutherland Avenue. – Removal of old property fence, trees, and brush adjacent to Holston Railroad
- Begin implementation of Landscape Services reorganization plan
- Landscape Academy – On-going development of training and SOP curriculum
- Implementation of two professional horticulture staff to include a Landscape Manager and Arborist



Arboriculture Goals

Arboriculture Services was formed in mid-2015 and the group has several goals for the future.

Tree Inventory

One of the major long-term goals for the Arborist will be to catalogue the trees on campus. This inventory will allow the university to more efficiently maintain, monitor and renew its tree canopy. In addition to assisting with the development of



a comprehensive tree management plan, the inventory will be a powerful educational tool for researchers and students in many disciplines. Once complete, the goal is to post the inventory on an interactive, Web-based platform.

Tree Management Plan

The goal for this plan is to utilize the campus tree inventory to develop a plan for restoration of the tree canopy. The information from the inventory will be analyzed for age/longevity of tree canopy, species diversity, educational value, etc. and a plan identifying recommended species and location of planting will be prepared.

Tree Campus USA

Tree Campus USA is a national program administered by The National Arbor Day Foundation that is designed to provide colleges and universities with resources

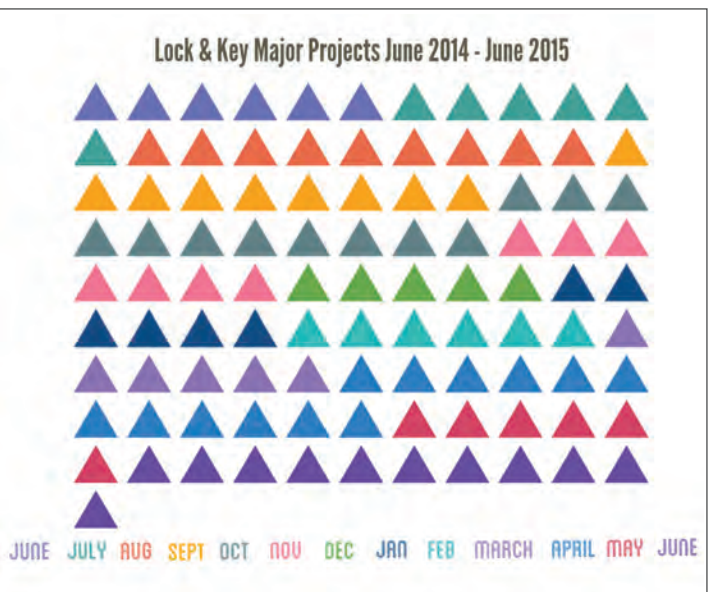
to establish and sustain healthy community forests by engaging students, staff and faculty in the ongoing planning and management of its trees. It is the goal of Arboriculture Services to attain Tree Campus USA status by achieving the five standards of performance:

- Establish a Campus Tree Advisory Committee
- Create a Tree Care Plan
- Demonstrate a Tree Care Program with dedicated annual expenditures
- Arbor Day Observance
- Service Learning Opportunities

Lock & Key Services

Lock & Key Services completed an average of 10 major projects per month from June 2014 - June 2015.

Large scale projects completed during this time included the loading of 680-plus cores at the new Fred Brown Residence Hall, 103 changes to cores at Dougherty, rekeying at Dunford Hall, installations at the new Student Union, and recores and repairs at residence halls across campus.



Rapid Response Team (RRT)

Spring Cleanup

Spring Cleanup is a special event held for 15 weeks annually as an effort to declutter academic buildings 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 2014, 24,600 cubic feet of material was recycled, taken to surplus, or disposed of at C&D Landfill.

FS UNIT ANNUAL REPORTS

Special Events

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



In 2014 more than 720 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 street 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 May of 2015, the Rapid Response Team coordinated and executed all of the associated moves of the Student Union Phase 1 project. Moves associated with the opening of the Student Union included Career Services, Disability Services, the Post Office, Central Ticket Office, U-Copy, Dining Services, and the Vol Shop. All of these moves were completed within the 30 day deadline.

Classroom “Clean Out”

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

UTILITIES SERVICES:

Steam Plant Conversion

A Utilities Services project is currently under construction for a \$25 million upgrade on the UT Knoxville Central Steam Plant. This project will eliminate the use of coal as a fuel by removing the old boilers and replacing them with high efficiency gas fired ones.



This project was conceived by Facilities personnel with the responsibility for plant operations and the intimate historical knowledge needed to

understand current and future EPA requirements. They also exhibited a desire to increase the operational efficiency of the plant and enhance its future reliability and capacity while being good stewards of the environment.



One component of this project is a campus-wide

steam outage to allow for the connection of new piping to the main steam header at the plant. The outage itself is a complex undertaking due to the many dependencies for

steam. It is relied on for heat and humidity control in buildings, to sterilize laboratory equipment and animal cages, produce hot water, and cook meals among its many uses. Facilities Services personnel have been planning for many months to take advantage of this outage by making repairs throughout the system and by accommodating capital projects by encouraging Facilities Planning and Design teams to plan connections for future buildings while the steam is off.



FS UNIT ANNUAL REPORTS

Another component of the project is improved redundancy of the plant electrical system and the campus electrical system by the addition of new switchgear and high voltage circuits which will allow for installation of an additional gas turbine generator. This improvement will increase option on electrical generation and distribution and enhance opportunities to supply electricity during emergencies such as major utility outages. This planning would not have occurred without the knowledge and dedication of Facilities personnel involved in the process.

KUB Natural Gas Pipeline



The Utilities Unit is currently overseeing the KUB design and installation of a new 16-inch, 450 PSI natural gas pipeline to the campus from Topside Road. This will accommodate the gas supply for the new boilers, provide for future expansion capabilities and increase the operating efficiency of the gas turbine generator by allowing it to run without the 300HP, electrically powered, gas

compressors now required. This benefit alone will save the university thousands of dollars in operating costs. The initial concept for this project was also provided by Facilities personnel.

Gas Insulated Switchgear

Utilities Services is currently under design for the approved and funded project to replace the main 18th Street Electrical Substation infrastructure



with Gas Insulated Switchgear. 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 with the UT portion of the facility.

Underground Electrical Cable

Underground electrical cable replacement projects are funded and under way. They were initiated by Facilities personnel to improve system reliability well into the future.

Electrical System Design

Facilities Personnel is always reviewing electrical system design. This leads to such improvements as new pad-mount switchgear standards and installations, more efficient and environmentally friendly transformer standards and other enhancements which greatly increase the reliability and flexibility of the systems now and well into the future. 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 operations of the system.

Laurel Substation Expansion

A capital maintenance project request has been submitted for the expansion of the new Laurel Substation to accommodate future demand and to reduce the individual loading of existing circuits. This addition will allow for



more redundancy of the electricity distribution system, increase the 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 and construction by Facilities personnel with a vision toward improvements and an understanding of the Campus Master Plan. This forward thinking reduced the overall complexity and cost of the current request.

Emergency Feasibility Study

A feasibility study for regional generation of power for the campus distribution system during times of extreme emergencies has recently been completed. This plan would allow the campus to operate as a micro-grid detached from the public utility during periods of curtailment or system failure thereby protecting students housed on campus and mitigating losses of major research. This installation would improve the emergency planning options and possibly allow for future

FS UNIT ANNUAL REPORTS

paralleling with the utility for demand response thereby reducing electricity rates by giving FS Utilities the option to participate in those programs. Again, this opportunity would not be available without the intimate knowledge and visionary thinking of Facilities personnel.

Supervisory Control and Data Acquisition

A SCADA (Supervisory Control and Data Acquisition) is currently installed and 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 systems 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.

Steam Distribution Improvements

Several phases of steam distribution improvement are completed or underway which are a direct result of management and planning by Facilities personnel. These projects will result in installation of more efficient insulation systems and overall pipeline design, vault and valve improvements, and enhanced operational safety and reliability. A recently completed phase replaced old piping between Jessie Harris and Taylor Law and relocated the line for the future construction of a new class lab building. Additional phases will continue to improve the system reliability and efficiency resulting in perpetual savings toward utilities costs. They will also accommodate increased loading of the system north of Cumberland Ave., such as the Strong Hall Class Lab. Without the vision and operational knowledge of Facilities personnel, these projects would not be completed and would have added much cost, time and complexity to the future class lab construction. Future project concepts include replacement of additional lines and components to continue enhancing the efficiency and reliability of the entire system.



Multi-Purpose Mechanical Buildings

Future installation of environmentally responsible, centrally located multi-purpose mechanical buildings is being planned beginning with the conceptual design of building architecture to meet the Collegiate Gothic vision. This design will be the first step toward creating more efficient HVAC facilities which utilize the latest in heating and cooling technology while blending properly with the greater Campus Master Plan.

HVAC System Upgrades

Many improvements to existing HVAC systems are planned such as chiller and cooling tower replacements. Some examples are Hodges Library which has been approved, and SERF chiller replacements that are under consideration.

Cooling Water Treatment

Other projects include enhanced cooling water treatment through implementation of new technology and better cleaning, monitoring, and maintenance of towers and equipment. This increases the life and overall operating efficiency of the systems.

SERF Controls Upgrade

Utilities Services is currently involved in a controls upgrade project at SERF which will improve the operating efficiency and reliability of HVAC and hood controls within the building. This will ultimately reduce electrical utility costs and improve lab safety in that facility. Several other upgrades are in the conceptual stages or beyond.

Certified Professionals

All Utilities shops are fortunate to have highly skilled professional supervisory and craft personnel. Many of the unit's personnel hold professional licenses or certifications such as Master Plumber, Certified Welder, Certified HVAC technicians, Heavy Duty Refrigeration Mechanic, Journeyman Electrician, Certified High Voltage Lineman, Licensed Refrigerant Handling, Certified Steam Plant Operator, etc. The unit has professionals such as Electrical and Civil Engineers in the ranks and hundreds of years of experience and historical knowledge maintaining and operating the UT Knoxville campus systems.



FS UNIT ANNUAL REPORTS

Improved Plumbing Systems

Plumbing systems are being improved through better design for new installations and better inspection and repair techniques for existing systems. The Utilities unit has moved to improved materials for plumbing system installations such as HDPE piping which will never rust or contribute to system contamination and has fewer opportunities for failure. The forward thinking of Facilities personnel is responsible for such improvements.

Reduced Flow Devices

Other plumbing improvements include reduced flow devices such as shower heads, faucets and toilets. More efficient water coolers and bottle fillers. High efficiency circulating pumps and more coordinated inspections to reduce leaks.

Training

Every Utilities Services unit supervisor has completed enhanced supervisory and compensation training and willingly and voluntarily pursue additional training opportunities. The unit's trade and crafts personnel receive training on new systems and participate in other opportunities to maintain or improve their skills making them the most knowledgeable and efficient personnel available.



Reviews and Assessments

All Utilities Services subunit heads continually review personnel through skills assessment and performance review. They are instructed to observe and evaluate analytical thinking, attention to detail, organizational skills, problem resolution and quality of work when creating teams and giving assignments. This is designed to improve response, customer service and overall efficiency of operations.

Utilities Master Plan



The unit is currently creating a Utilities Master Plan to coincide with the greater Campus Master Plan. This plan will enable us to more efficiently tell Utilities Services' story and plan for capital expenditures and system

improvements well into the future. It will also be used as a tool for designers to acquire utilities system information useful for site preparation and building design. This will lead to better standardization of equipment and materials, improved processes and ultimately, higher reliability and lower operational costs.

Overview:

All of the items listed above are the result of critical thinking of performance by members of the Utilities team and other Facilities Service personnel. The group is passionate, reliable, efficient, and proven in routine operations or during crises response. The unit has ownership and is heavily invested in the University of Tennessee.

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

- Minimum of two people on site at all times.
 - Better ability to handle repairs requiring more than one person.
 - Better able to handle repairs during busy times. One person can stay with a problem while the other chases calls. Two people available for two-person jobs.
 - "Dropable" tasks will be assigned for slow periods.
- Enhanced Off-Hours Coverage
 - Three people will be assigned to each shift (First, Second, Third)
 - Rotate seven days on, four days off, eight on, two off, repeat every fourth week.
 - Current after-hours personnel were given first chance at new schedule.
 - First shift given next chance.
 - Filling in with new hires (not new positions).



ONE CALL AWAY, 24 HOURS A DAY.

FS UNIT ANNUAL REPORTS

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.

Zone Maintenance Emphasis on Emergency Management

A new emphasis has been on Zone Maintenance's 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 people rotate out of Zone Coordinator appointments, more of these positions will be filled by Zone Maintenance.

The unit has also purchased and provisioned a storage POD. The POD is stocked with meals ready to eat, wa-

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



2015 Zone Maintenance Inspections Initiative

Building inspections will encompass several different levels. Three foremen have primary duties of inspecting the condition of buildings and employee performance. Senior-level employees will be 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 will be completed using a peer network of Maintenance Specialists. This will entail 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 will be 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. The different set of eyes will most likely see some longer-term issues that can be addressed.

FS UNIT ANNUAL REPORTS

Overall, these inspections will help the Zone Maintenance unit to provide better service to the campus community.

Expectations:

- Inspectors will notice things others may have become used to seeing
- Emphasis is not necessarily employee performance
- Inspectors will be able to point out needs (training, materials, tools) & potential deficiencies in materials and workmanship
- Improvements in performance (if needed)
- Three inspectors
- Foremen (repurposed from existing positions) will be able to identify training needs & provide training (when able) on the spot and at the time the deficiency is found
- Foremen are designing the program from scratch (must have very good people skills)
- Scorecard (similar to restaurants; display in 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
- Build greater sense of pride



2015 Zone Maintenance Zero Failures 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 training if that is determined to be the root cause, and improve employee performance where indicated.

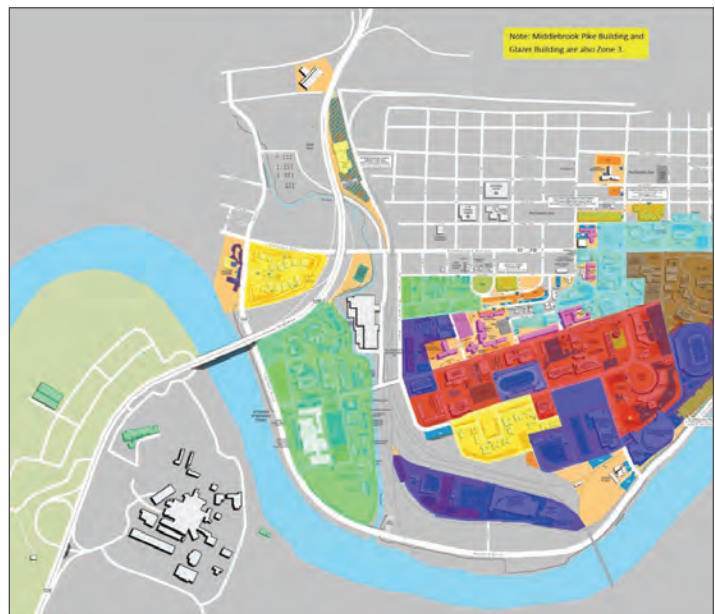
The desired outcome of this program is to investigate any failures categorized into the zero failures category and determine why a given failure occurred. Such

investigations may uncover a need for additional training or tools, in addition to parts or equipment performance.

2015 Zone Maintenance General Initiatives

- Square footage per employee is low in comparison to peers. To improve this ratio the unit is not filling positions as they become 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).
- Redistribution of Zones
 - Combination of Zone 2 with Zones 4 and 5
 - Expansion of Zone 9 into Zone 3
 - Zone 3 becomes outlying buildings
 - Zone 8 absorbs One Call Shift Personnel
- These changes freed up two foremen for inspections

Zone Maintenance & Archibus



The new 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 does not currently have access to. With the new system, work request will be routed directly from the requestor to the personnel in the buildings. This direct routing will result in shorter response times. Requestors will be able to provide feedback on how their request was handled. In addition, requestors will also be able to track the progress of their work request.

FS UNIT ANNUAL REPORTS

Zone Maintenance Smart Devices

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



Zone Maintenance Building Level Authority

A major initiative, in concert with the new Archibus system, will be that issues encountered by customers will be routed directly to a building's Maintenance Specialist without the need to route through several levels of review. This will result in quicker problem resolution and will reduce 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 reduced the number of work requests generated by Zone Maintenance to the central shops from more than 2,000 in FY 2012 to less than 600 in FY 2014.



Zone Maintenance Career Ladder

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

Zone Maintenance Training

Proposal for training to take several different tracks for the advancement through the Career Ladder.



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.

Beginning the summer of 2015, Zone Maintenance employees began going through a series of customer service training conducted by UT Employee and Organizational Development (EOD).

The Zone Maintenance staff is divided into five groups of 30 and each group will attend four classes to complete their certificate.

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

Training consists of the following courses:

- Module 1: Fundamentals of Customer Service Introduction & Setting Top Quality Standards
- Module 2: Every Customer Is an Opportunity: Approaching and Rebounding from Difficult Customers
- Module 3: Fostering the Many Faces of Customer Service: The Royal Treatment
- Module 4: Projecting a Positive Image for the Frontline: Outstanding Telephone Courtesy

Zone Maintenance Critical Parts Inventory

Begin keeping 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.

2015 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 our customers.
- 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.

APPENDICES

A

SIGHTLINES

B

APPA FPI REPORT

C

CUSTOMER SATISFACTION

D

EMPLOYEE SATISFACTION

APPENDIX A - SIGHTLINES - OVERVIEW

Sightlines: Helping educational facilities better manage their facilities investments

Return on Physical Assets (ROPA) Report for 2014 – 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

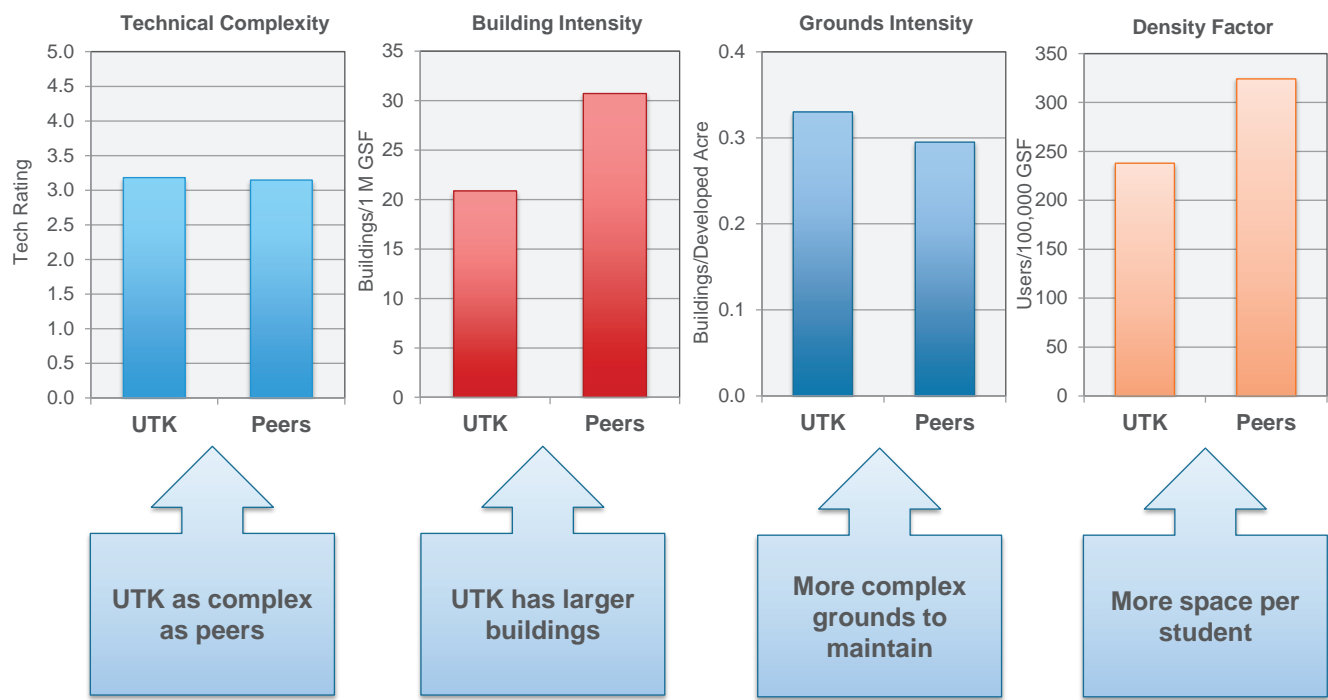


Comparative Considerations

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

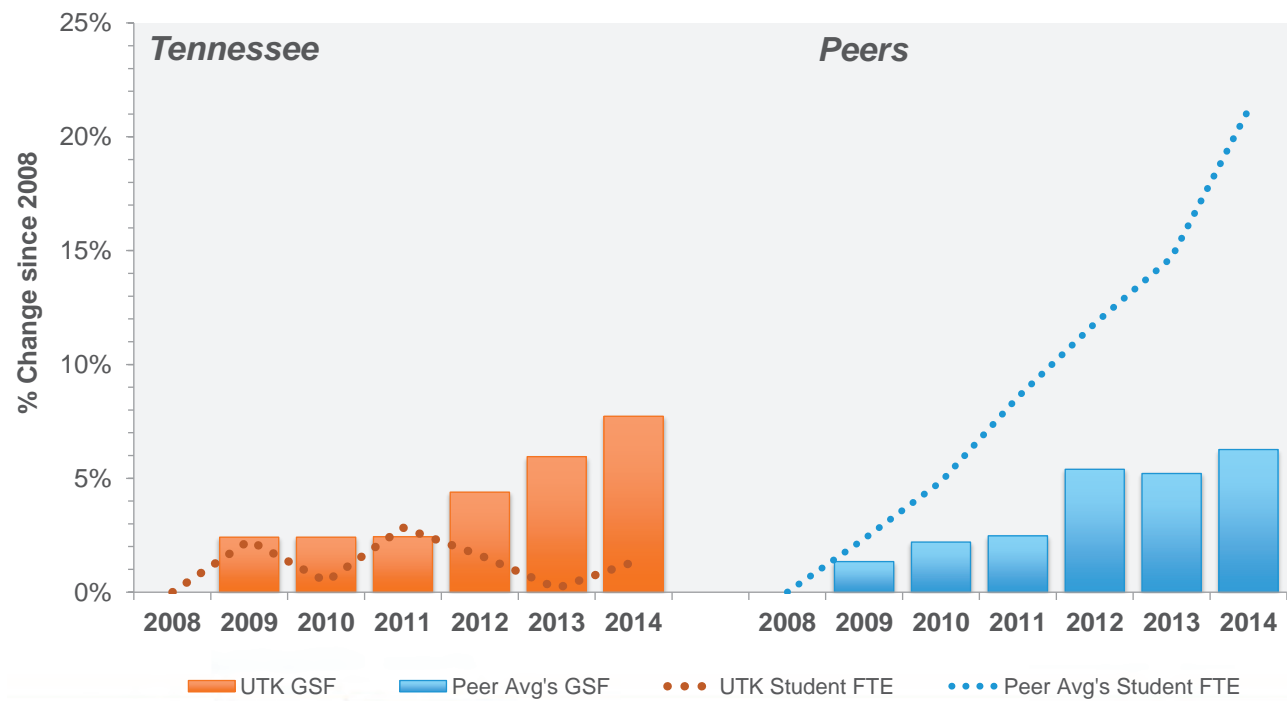
APPENDIX A - SIGHTLINES - OVERVIEW

Key Physical Profile Drivers



Space Growth Outpaces Student Enrollment

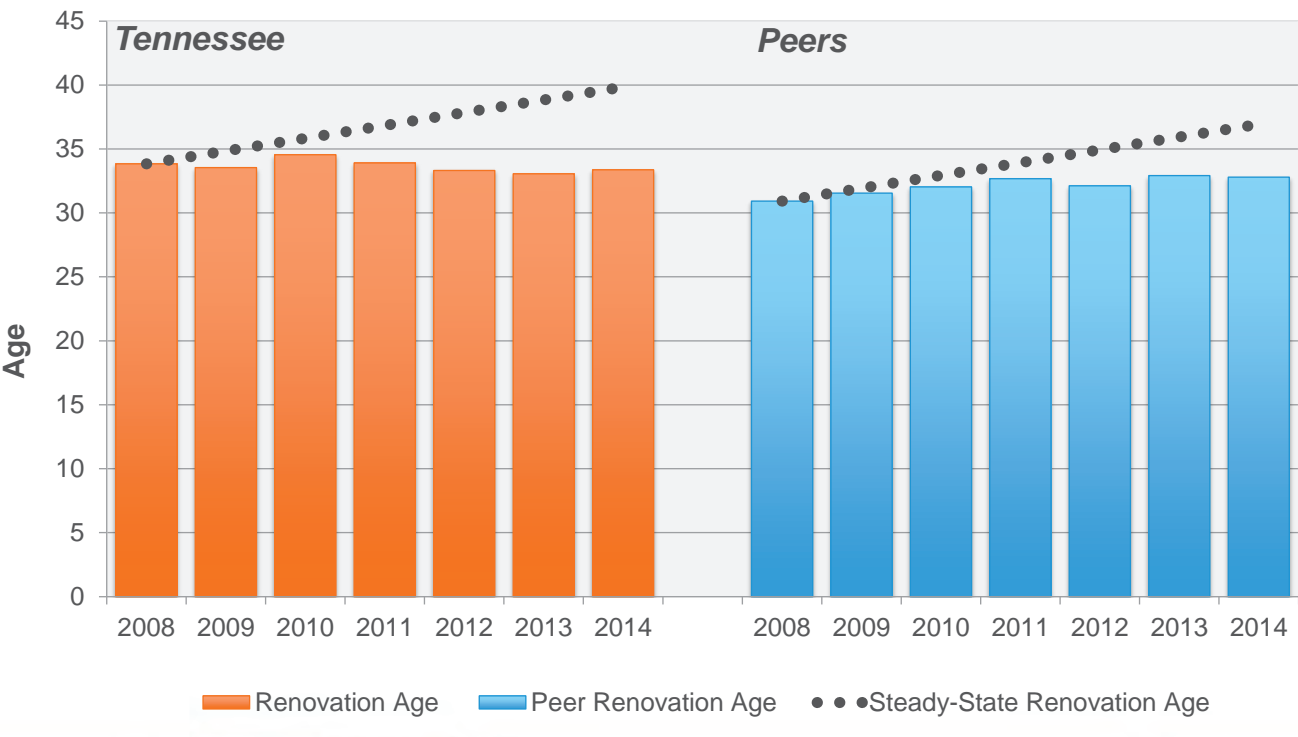
Tennessee's Percent Change in Space and Students



APPENDIX A - SIGHTLINES - OVERVIEW

Renovation Age vs Peers

UTK has reduced campus age by 6.5 years since 2008

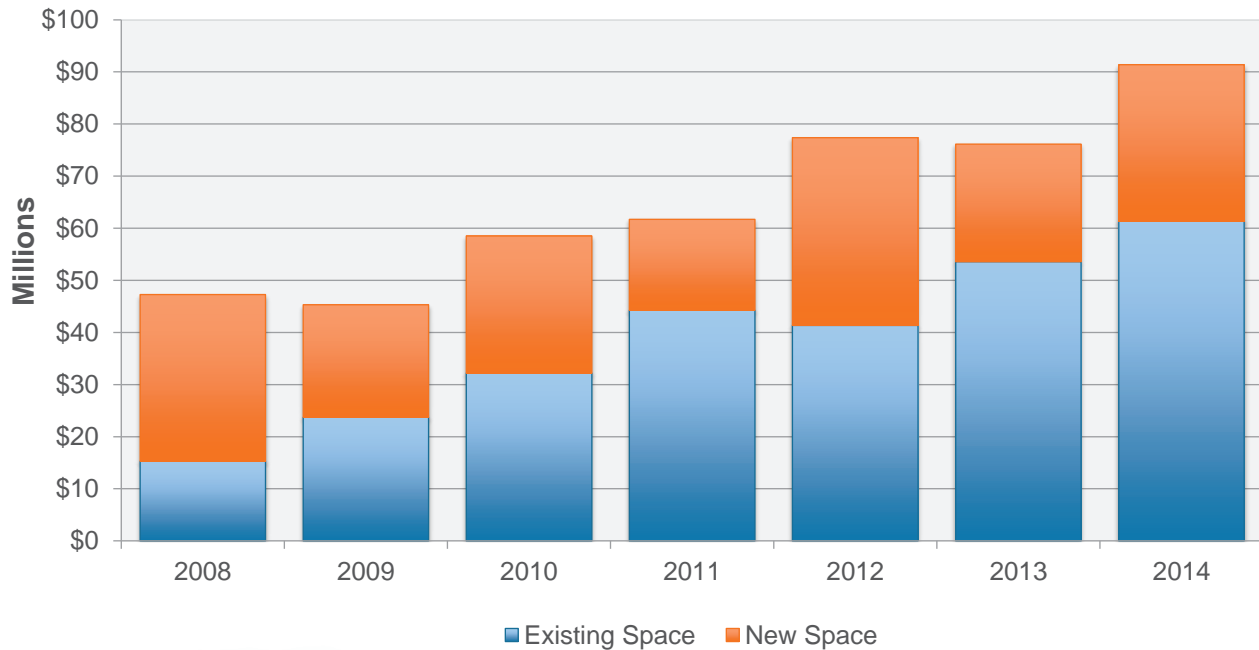


APPENDIX A - SIGHTLINES - CAPITAL

New Space vs Existing Space Spending

Greater capital investment is being dedicated to existing campus facilities

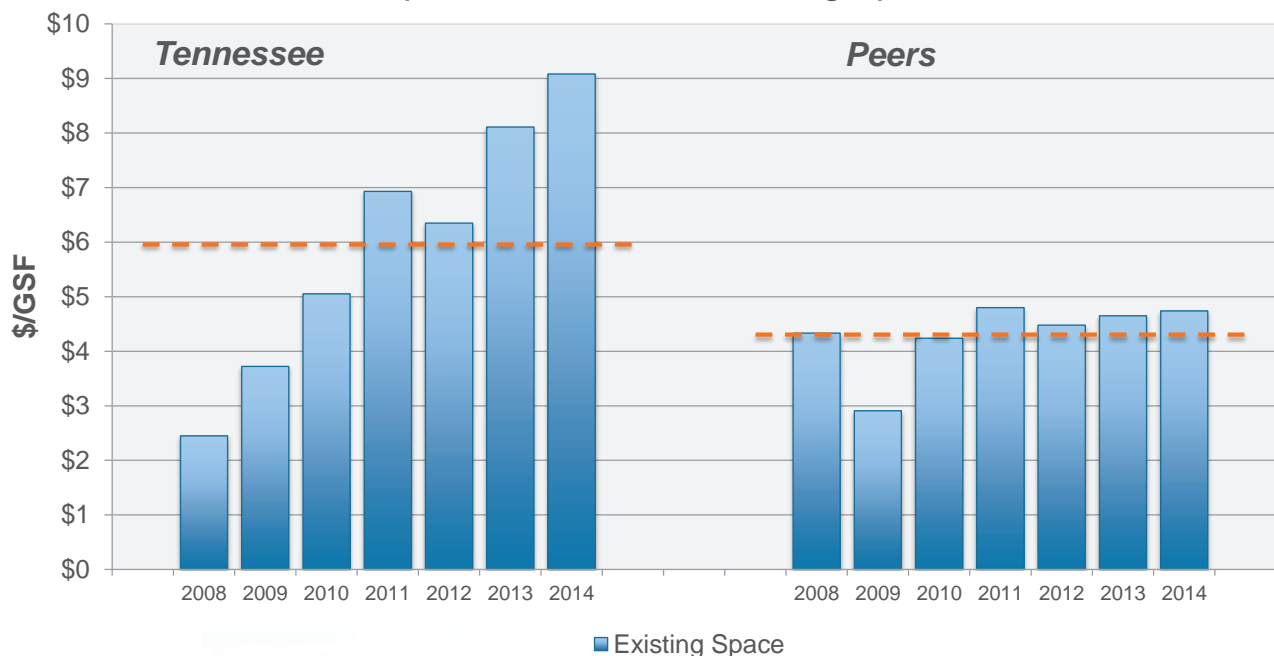
Total Capital Investments (New v. Existing Space)



Existing Space Spending vs Peers

UTK nearly doubles peer spending in 2014

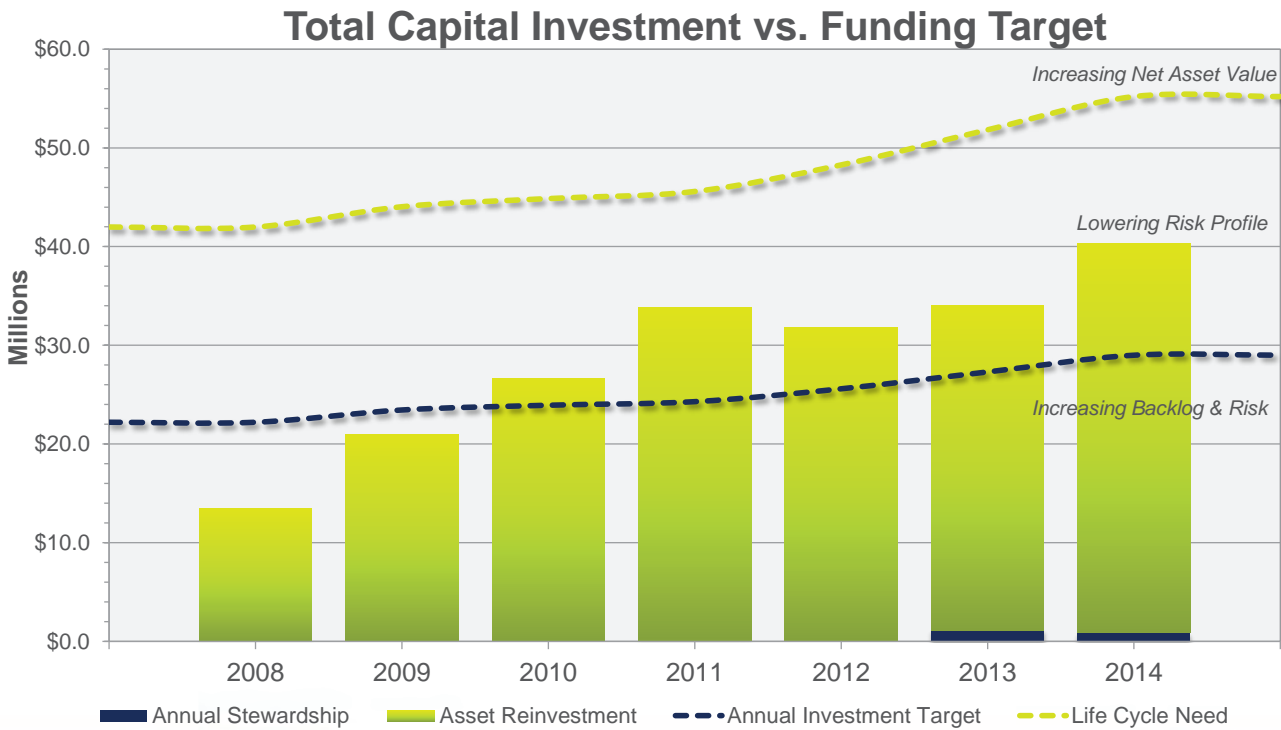
Capital Investment in Existing Space



APPENDIX A - SIGHTLINES - CAPITAL

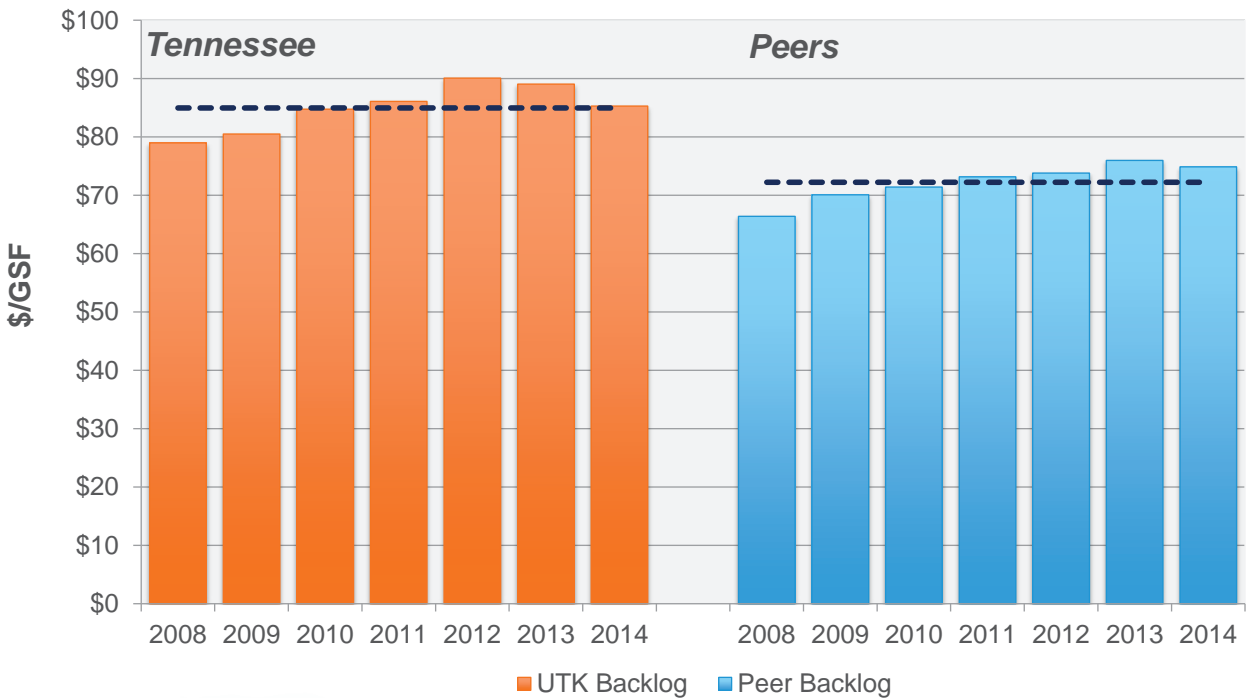
Total Capital Investment vs. Funding Target

UTK reaching targets through one-time funding



Backlog vs Peers

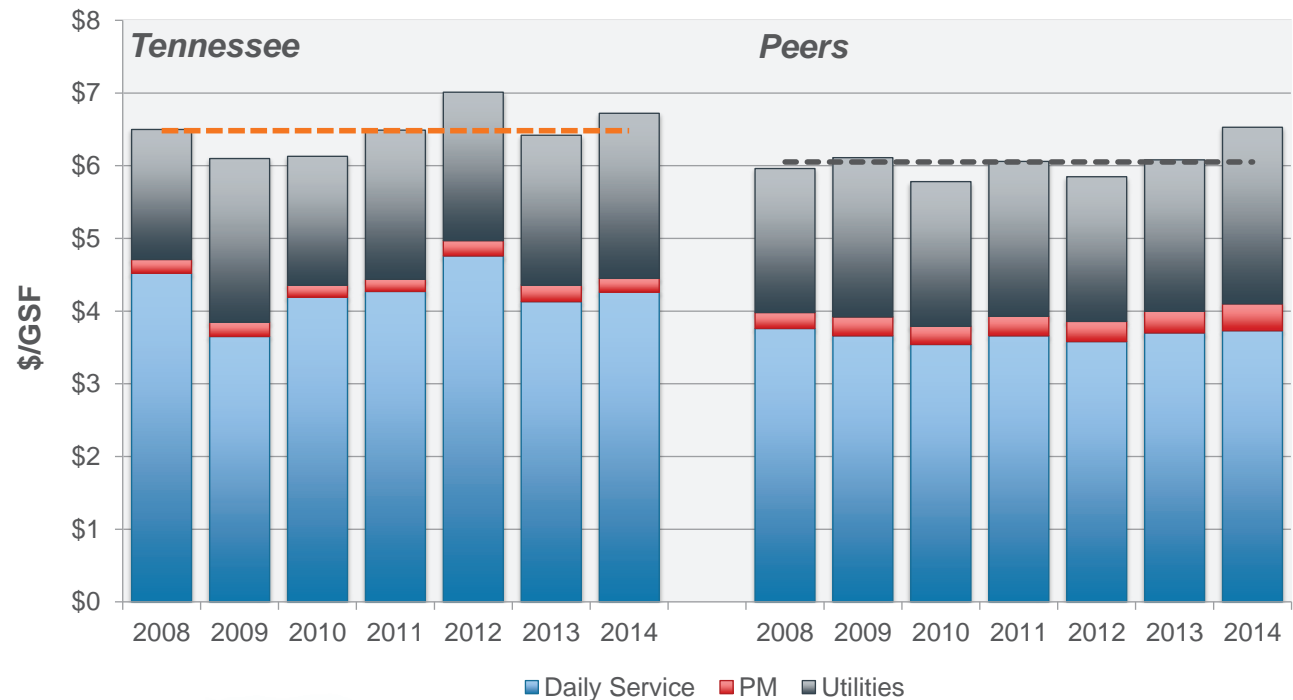
Increased resources results in lowering backlog



APPENDIX A - SIGHTLINES - OPERATIONS

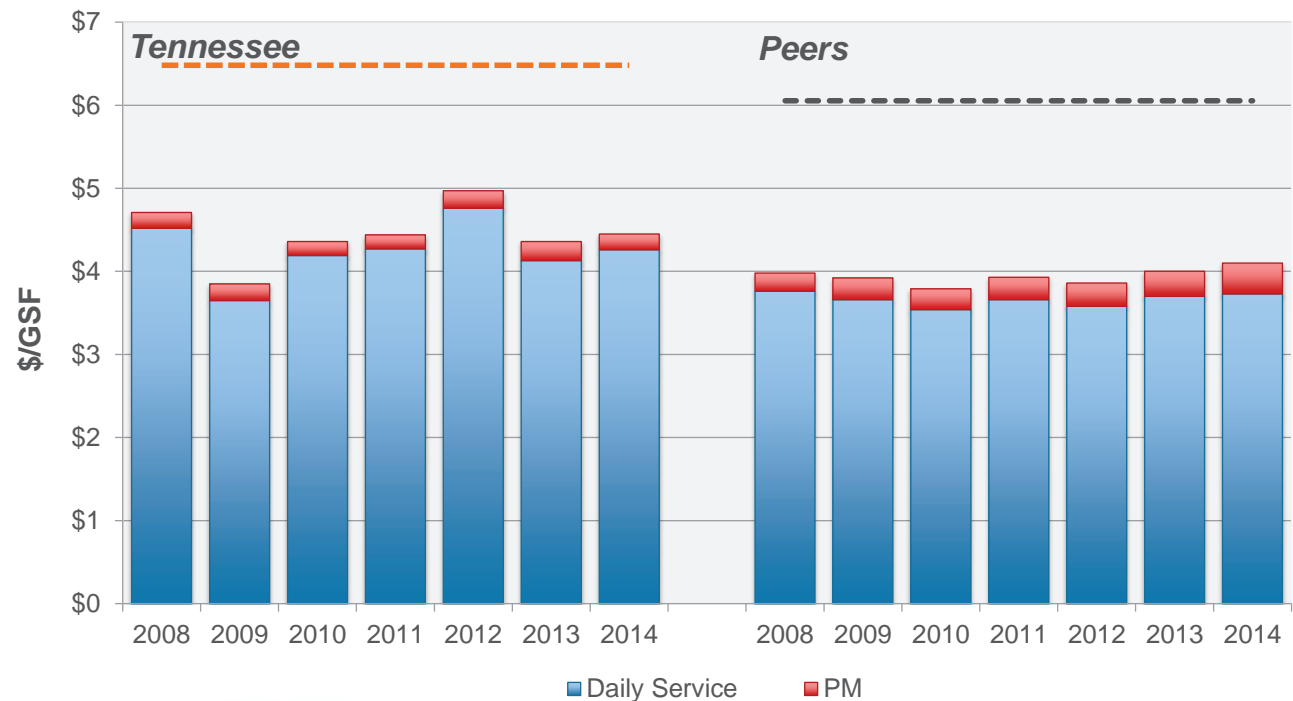
Operating Actuals vs Peers

Spending on par with peers



Operating Actuals vs Peers

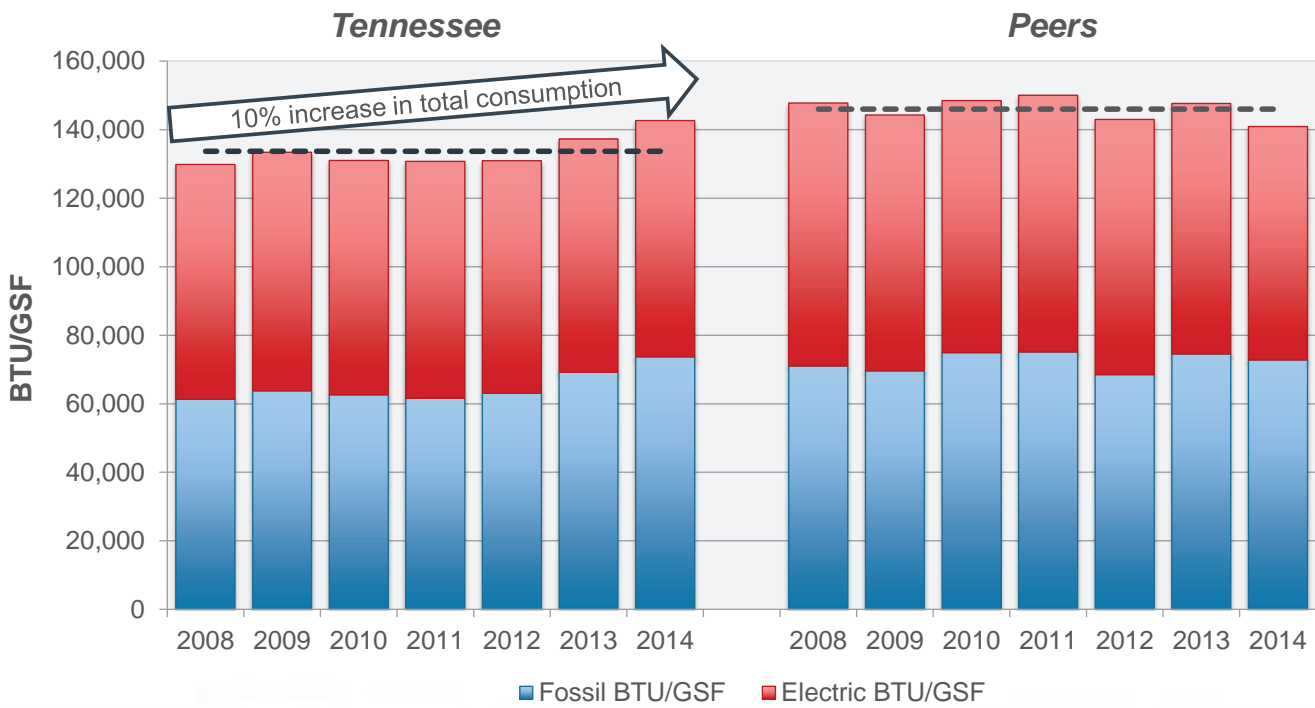
Spending on par with peers



APPENDIX A - SIGHTLINES - OPERATIONS

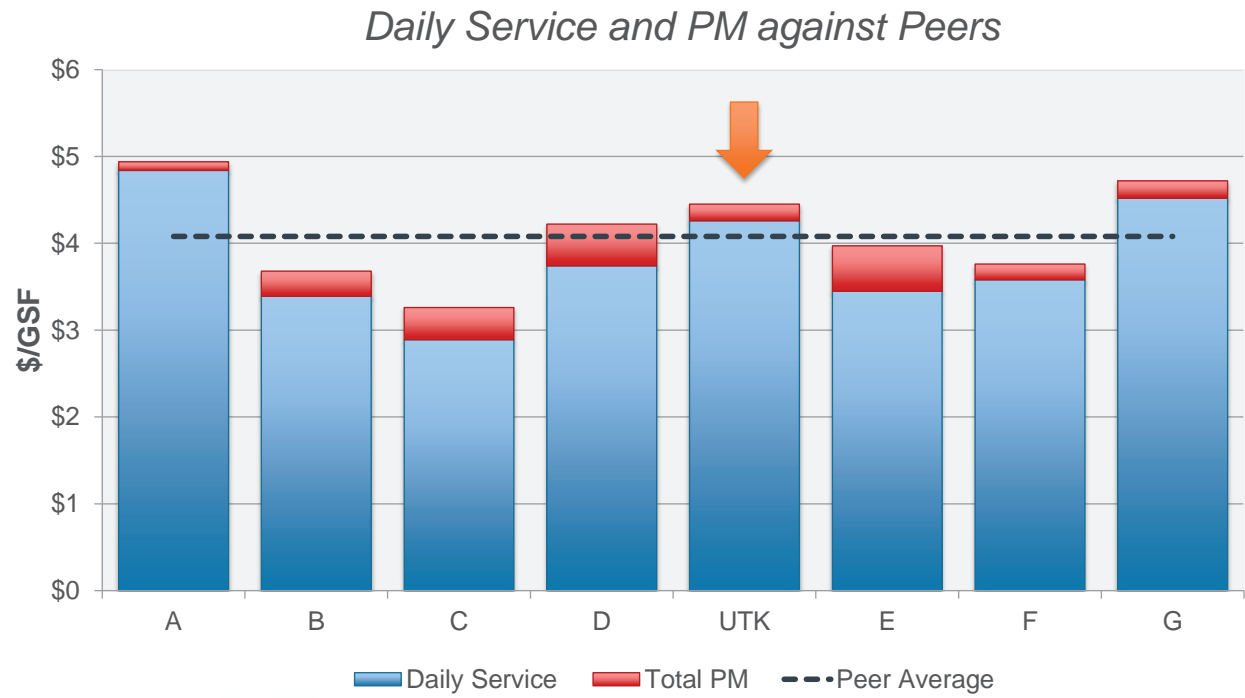
Energy Consumption vs Peers

UTK increasing consumption over time



Daily Service vs Peers

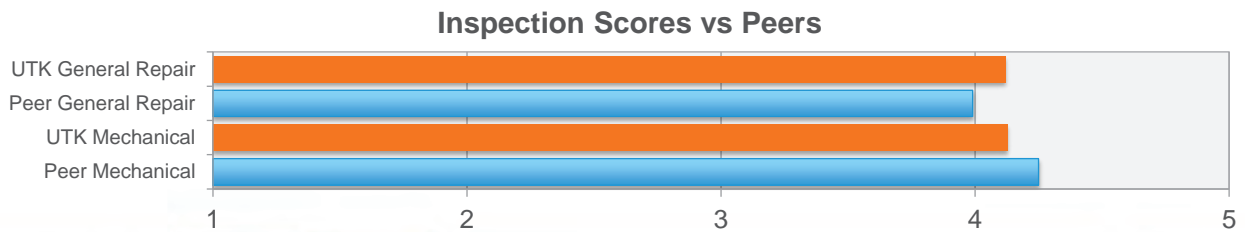
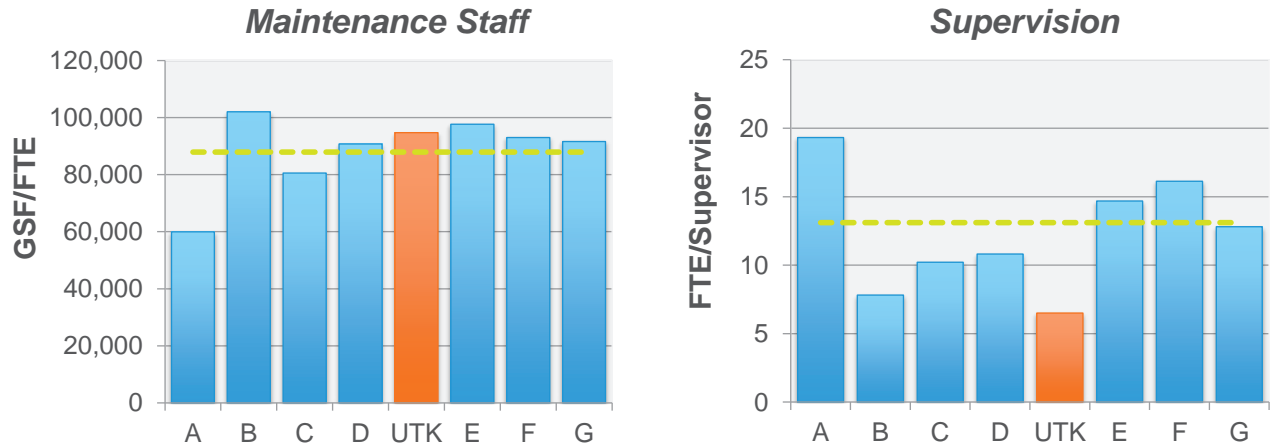
Normalized for cost of living



APPENDIX A - SIGHTLINES - OPERATIONS

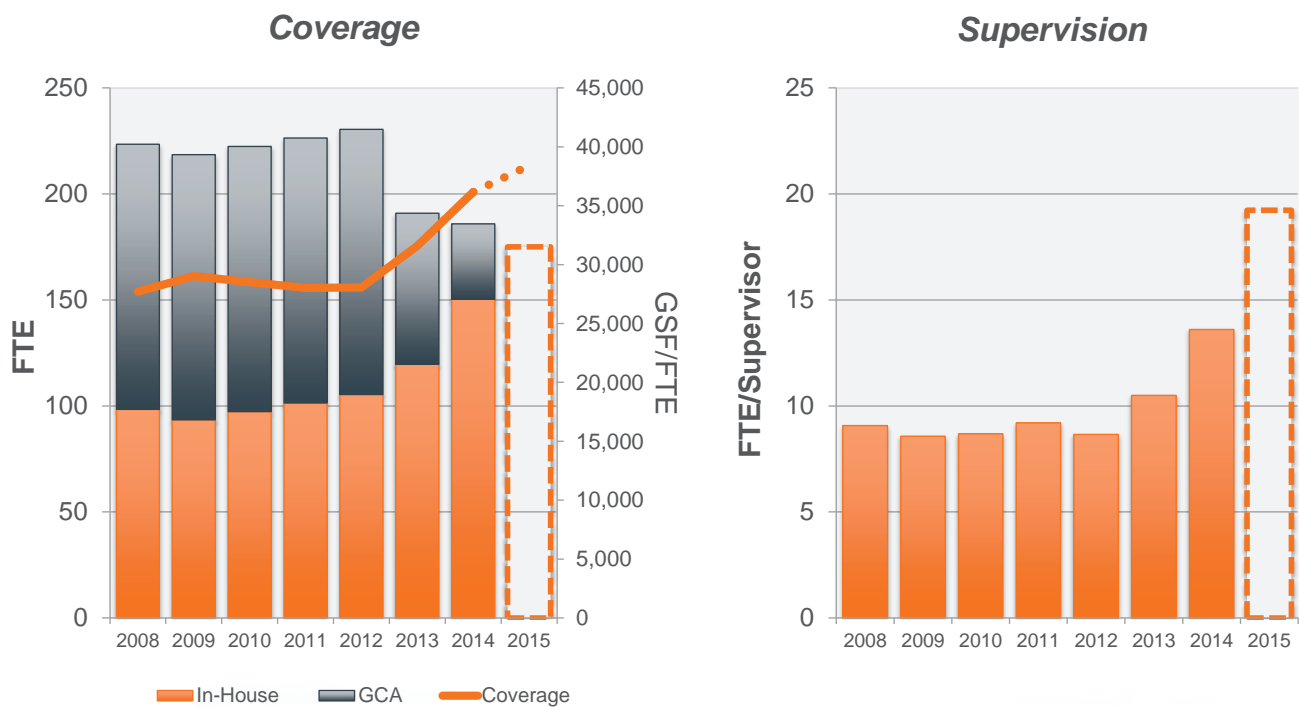
Maintenance

Similar coverage with more supervision than peers



Custodial

Transition to in-house staffing shows increase in efficiency of coverage



APPENDIX A - SIGHTLINES - OPERATIONS

Custodial Performance in 2012



Custodial Performance in 2014

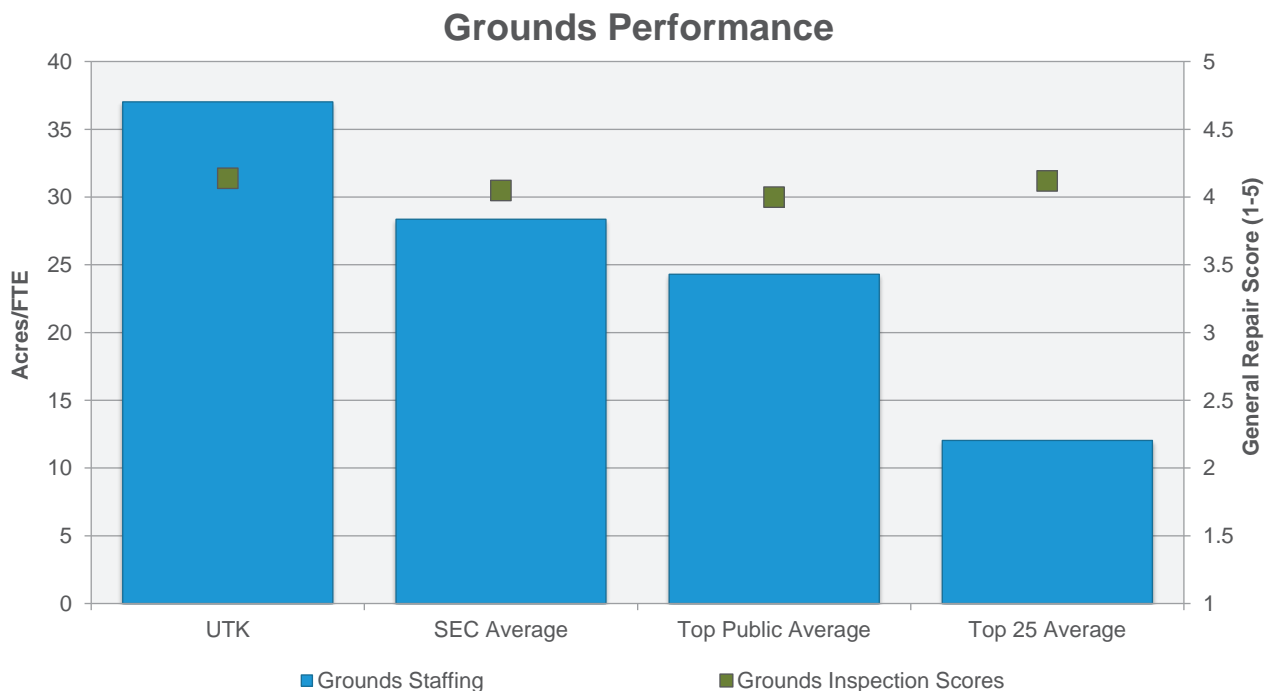


APPENDIX A - SIGHTLINES - OPERATIONS

Estimated Custodial Performance in 2015

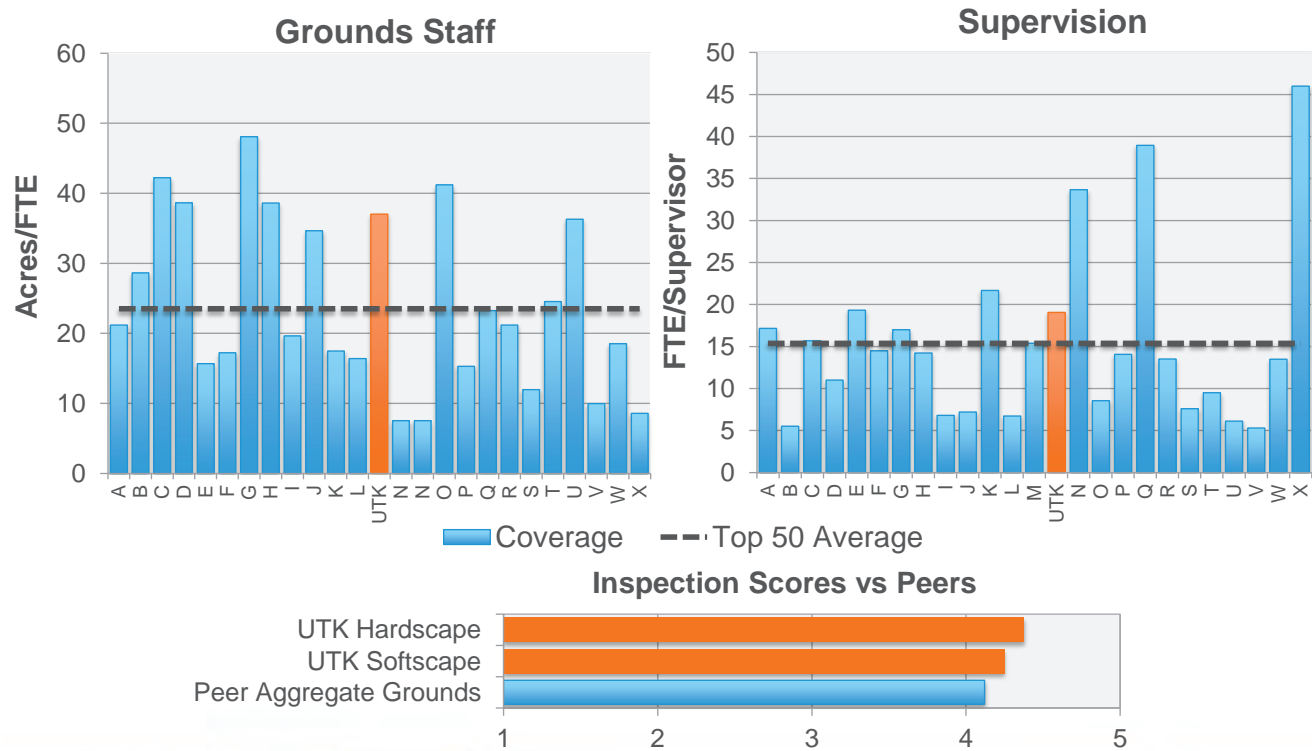


Grounds Comparison to Different Peer Groups



APPENDIX A - SIGHTLINES - OPERATIONS

Efficient Performance vs Top 50 Public Universities



APPENDIX B - APPA FPI - OVERVIEW

1. APPA: Leadership in Educational Facilities

Facilities Performance Indicators Report (FPI) for 2014 – Comparison of average costs for grounds, custodial, maintenance, and other functional areas among peer institutions.



APPA FPI Report - 2013-14

University of Tennessee/Knoxville

Region: SRAPPA

Gross Square Feet: 16,450,466

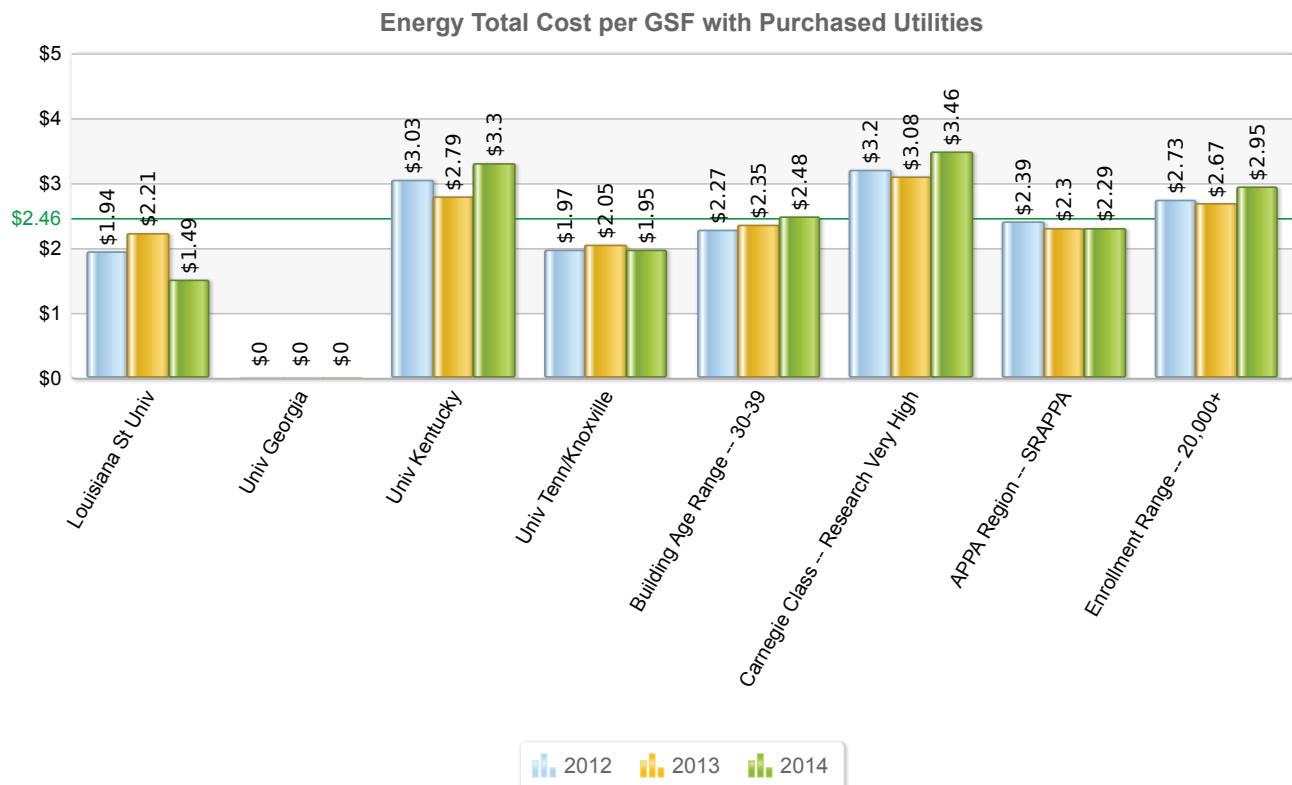
Carnegie: Research Very High

Number of Building: 285

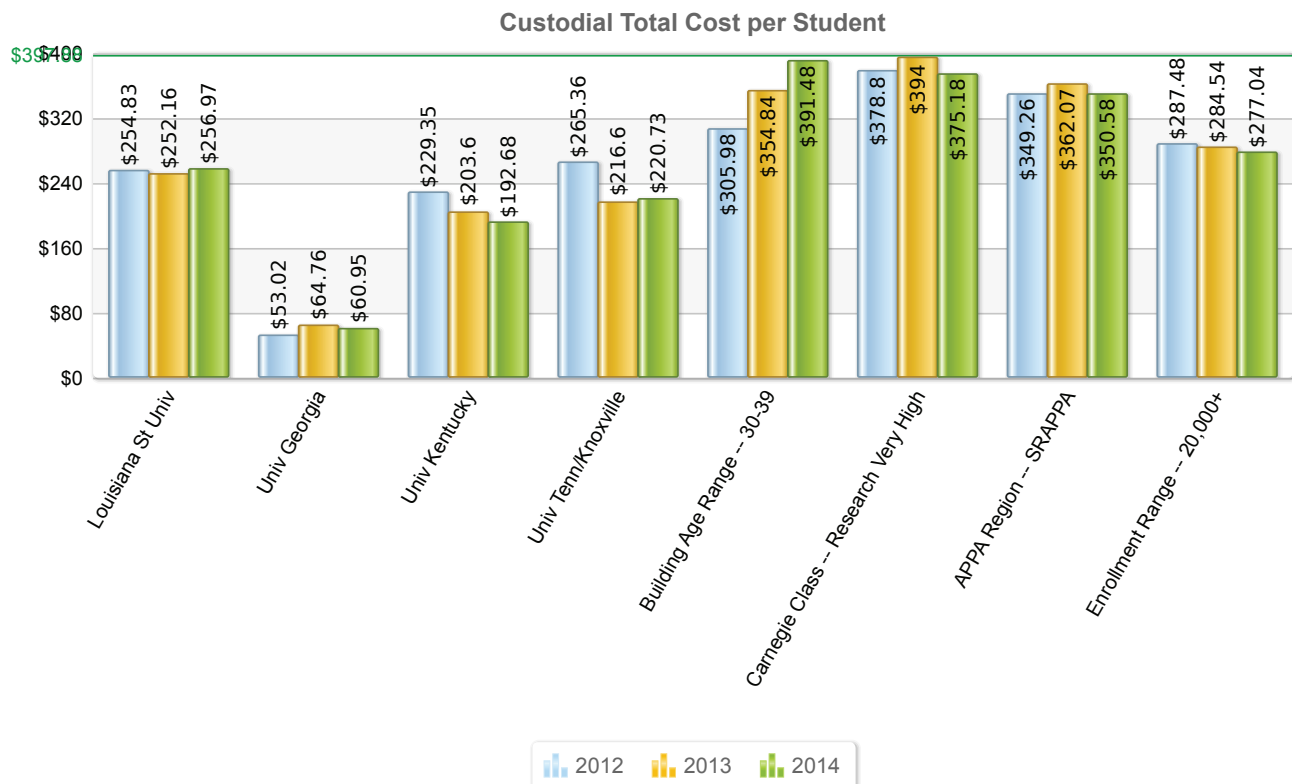
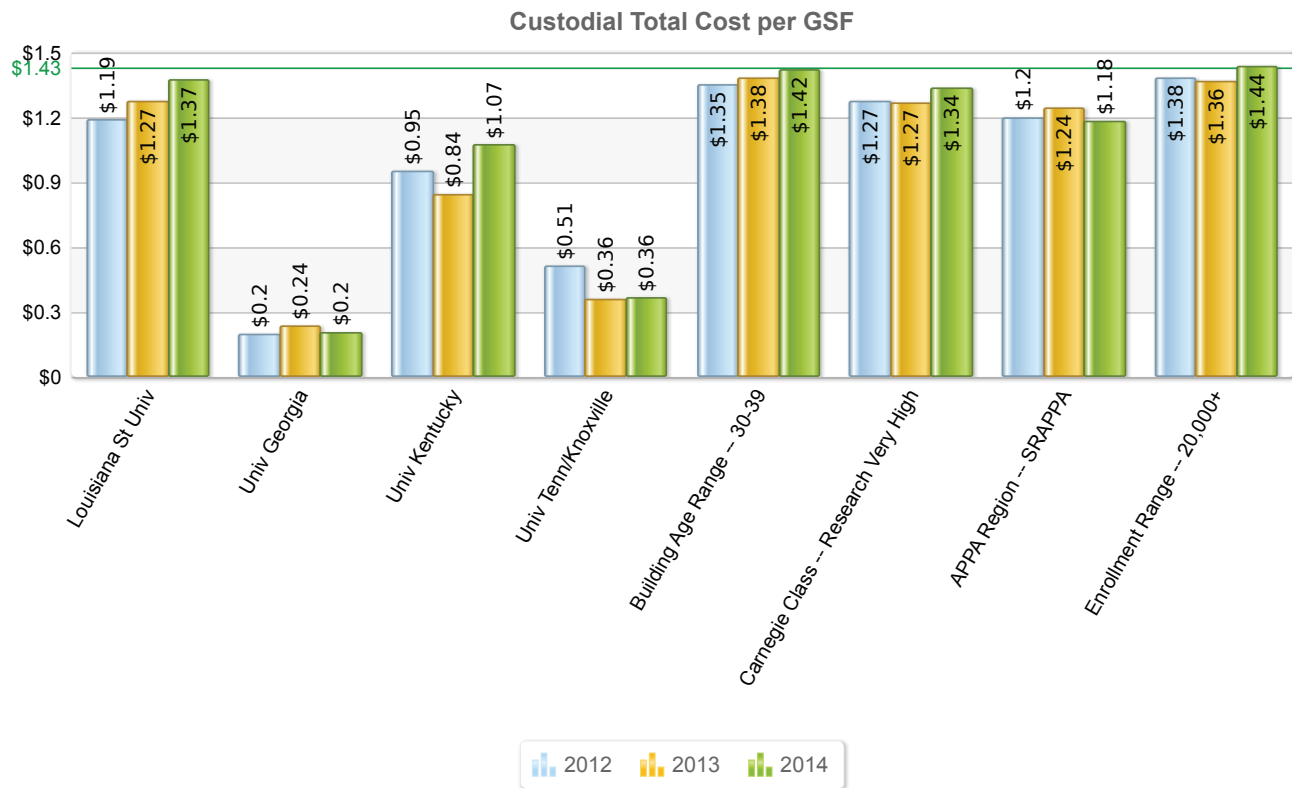
Funding: Public

Number of Students: 27,171

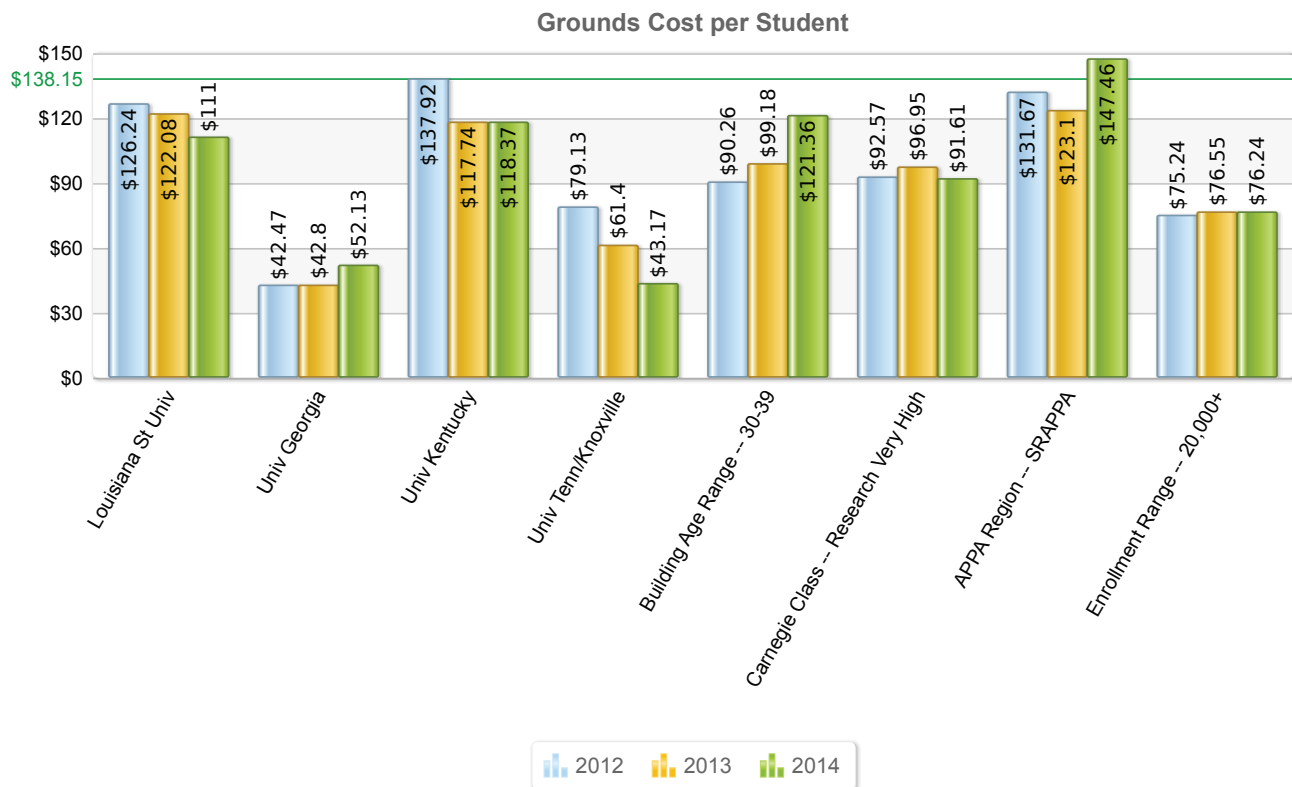
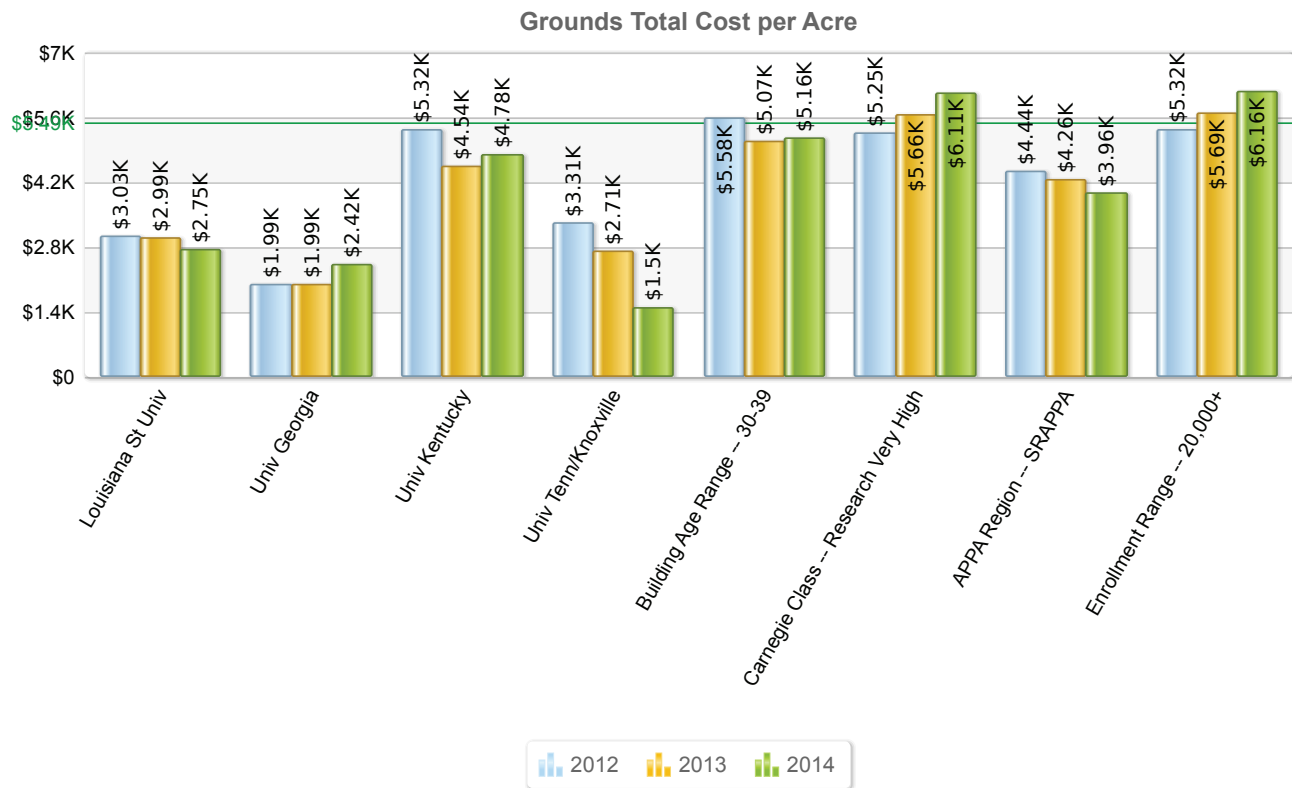
APPENDIX B - APPA FPI - GENERAL



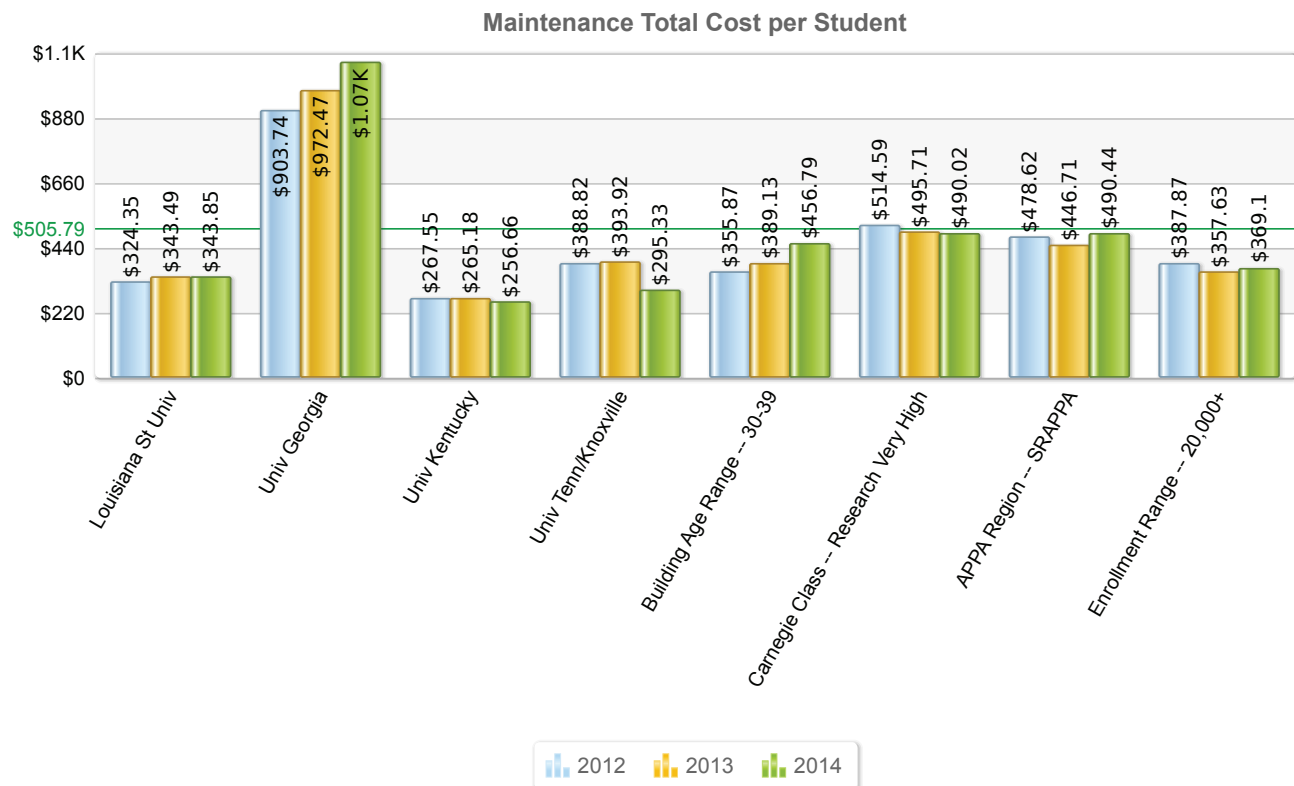
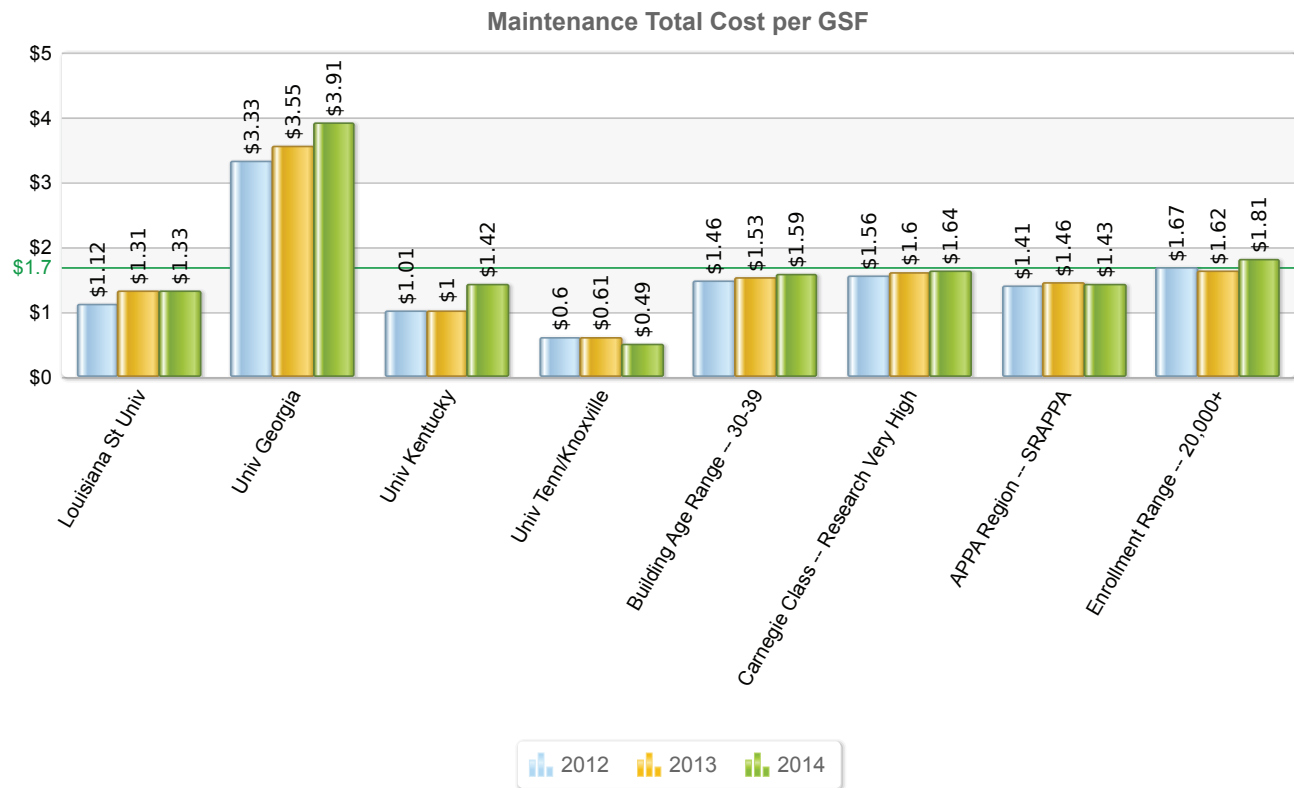
APPENDIX B - APPA FPI - CUSTODIAL



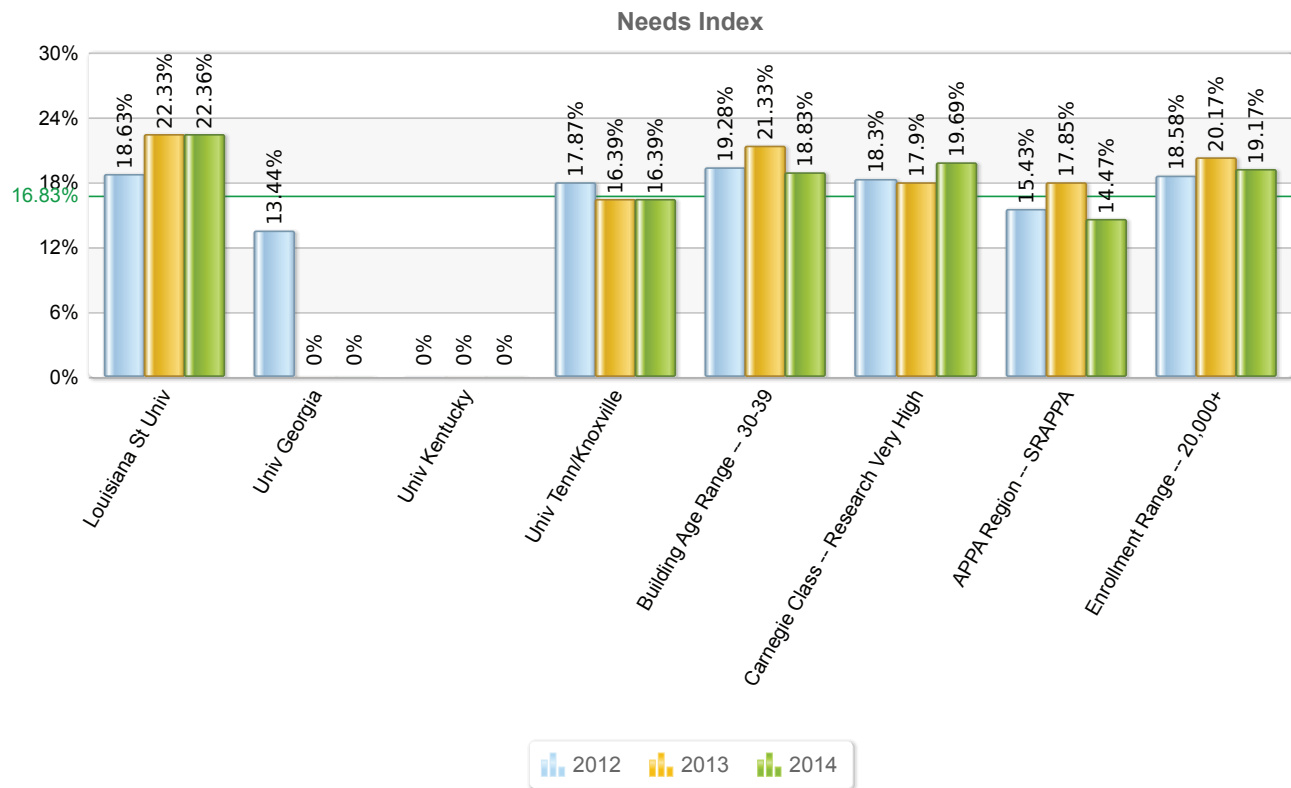
APPENDIX B - APPA FPI - GROUNDS



APPENDIX B - APPA FPI - MAINTENANCE



APPENDIX B - APPA FPI - NEEDS INDEX



APPENDIX C - CUSTOMER SATISFACTION

Facilities Services 2014 Customer Satisfaction Survey Response Summary:

The following charts reflect the results of the Satisfaction Surveys submitted customers during the 2014 calendar year. The surveys were submitted in response to specific work orders completed by Facilities Services units and subunits.



Despite a drop in mid-summer, overall customer satisfaction improved 0.2 points in 2014, peaking in November, and maintaining an average 4.7 rating through December.

*No Data Available for February 2014

Facilities Services Overall Response Averages for 2014



APPENDIX C - CUSTOMER SATISFACTION

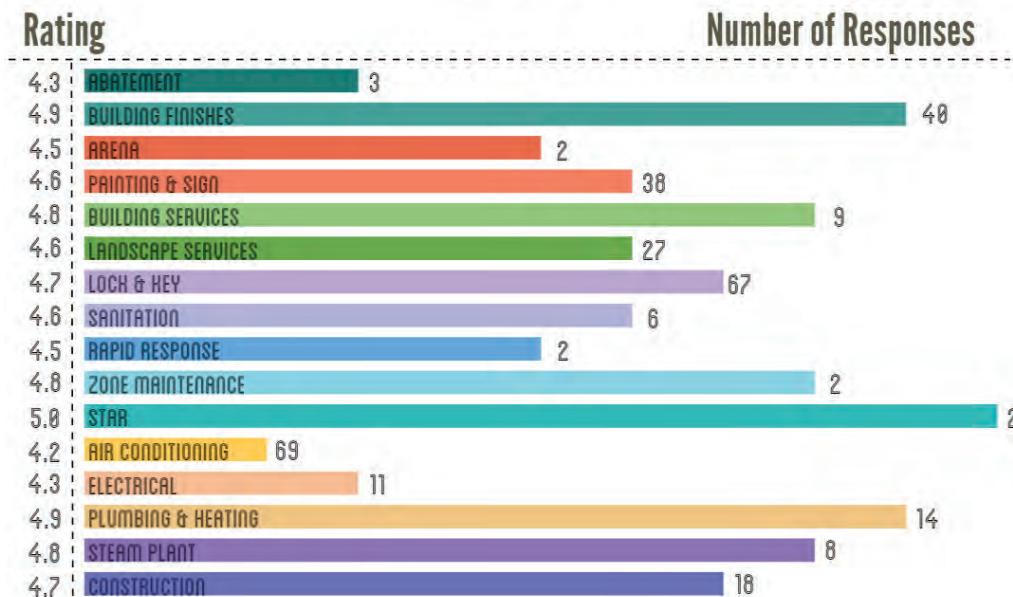
Customer Ratings of Services Provided by Facilities Services Department



A breakdown of these key customer service areas shows that overall satisfaction, and the quality of individual services provided, have demonstrated a steady increase in customer satisfaction ratings, despite losses in mid-summer.

*No Data Available for February 2014

Overall Customer Satisfaction Rating Per Unit



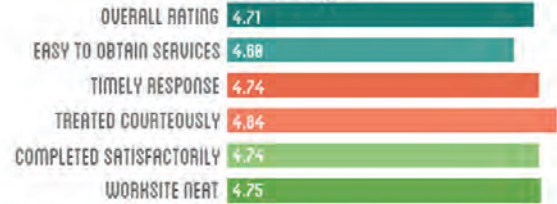
APPENDIX C - CUSTOMER SATISFACTION

2014 CUSTOMER SATISFACTION RATINGS PER UNIT

Air Conditioning



Lock & Key



Building Finishes



Plumbing & Heating



Building Services



Rapid Response Team



Construction



Sanitation Safety



Electrical Services



Steam Plant



Landscape Services

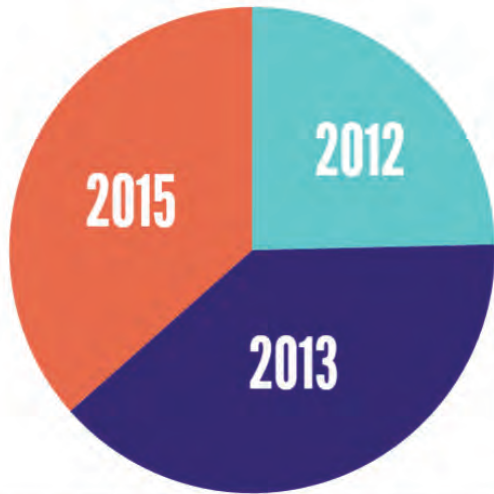


Utilities



APPENDIX D - EMPLOYEE SATISFACTION SURVEY

Number of Respondents
Per Year



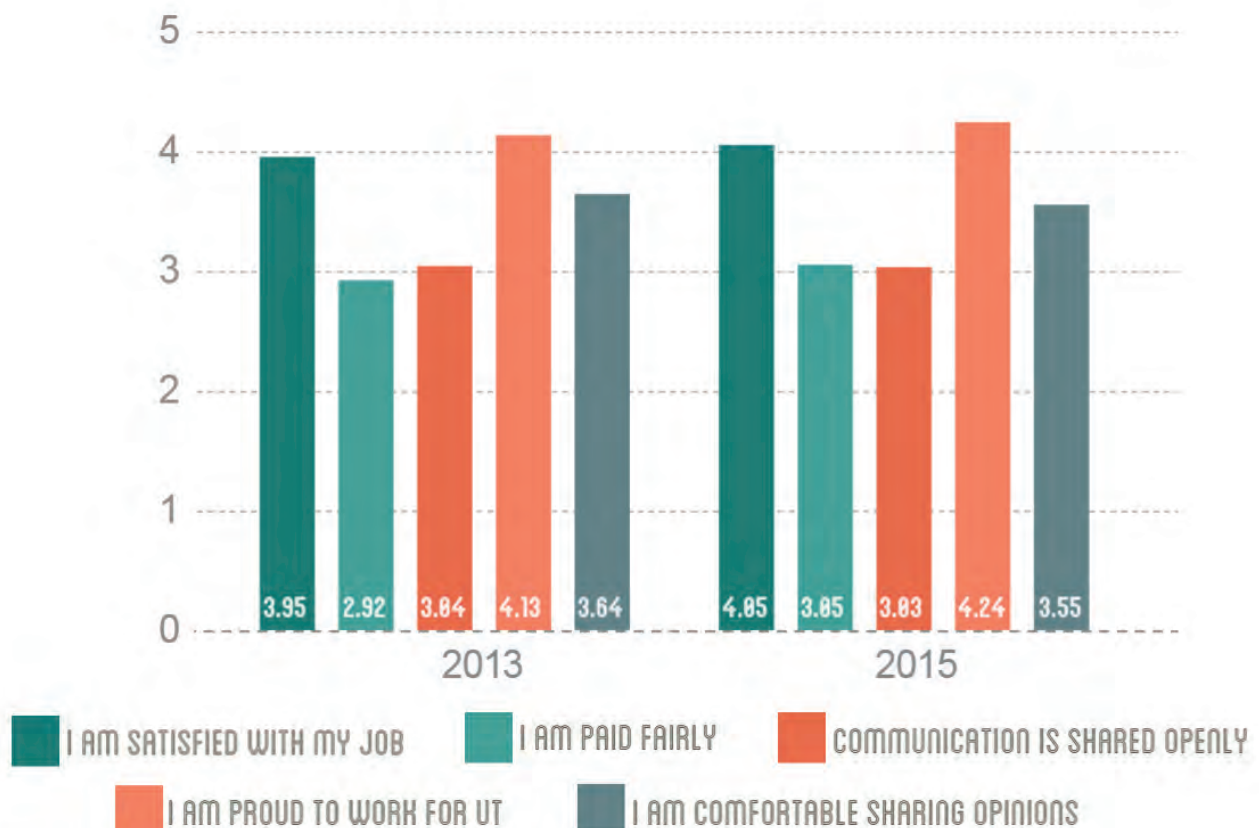
The 2015 Facilities Services Employee Satisfaction Survey was conducted during the course of 33 days from March 2 through April 3.

Response to the survey was not mandatory, and 116 surveys were submitted. There was a year-and-a-half gap between the 2015 survey and the 2013 survey due to the UT system-wide survey that was conducted in October 2014.

Of the 45 survey questions, 20 had a positive increase in satisfaction, 22 had a decrease in satisfaction, and three had no change from previous years. The average positive increase from 2013 to 2015 was +0.13 while the average negative decrease was -0.09. Answers were given on the five point scale as follows:

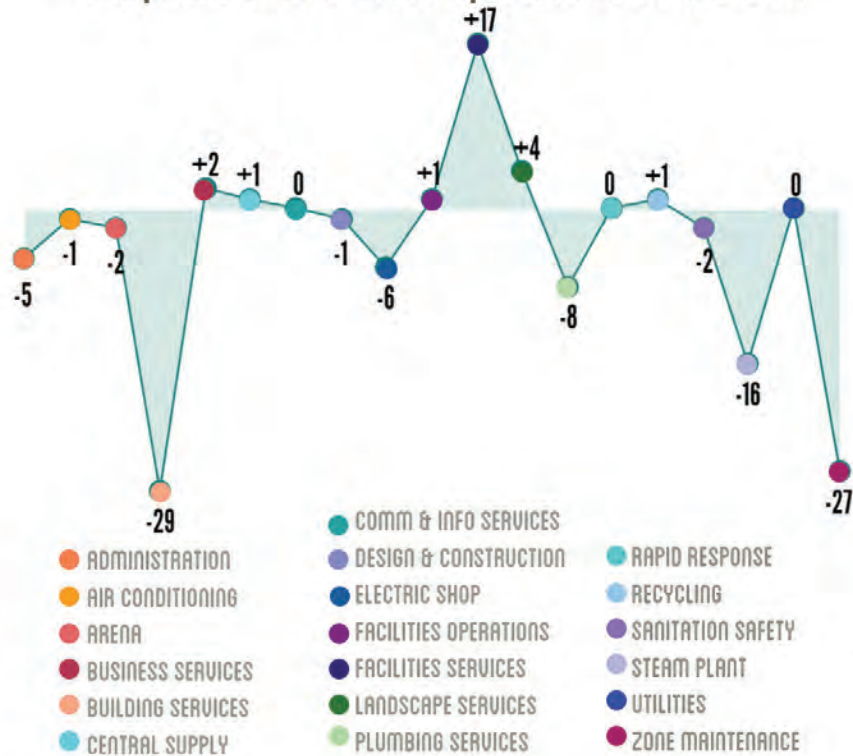
Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), Strongly Disagree (1)

Comparison of 2013/2015 Employee Survey Averages

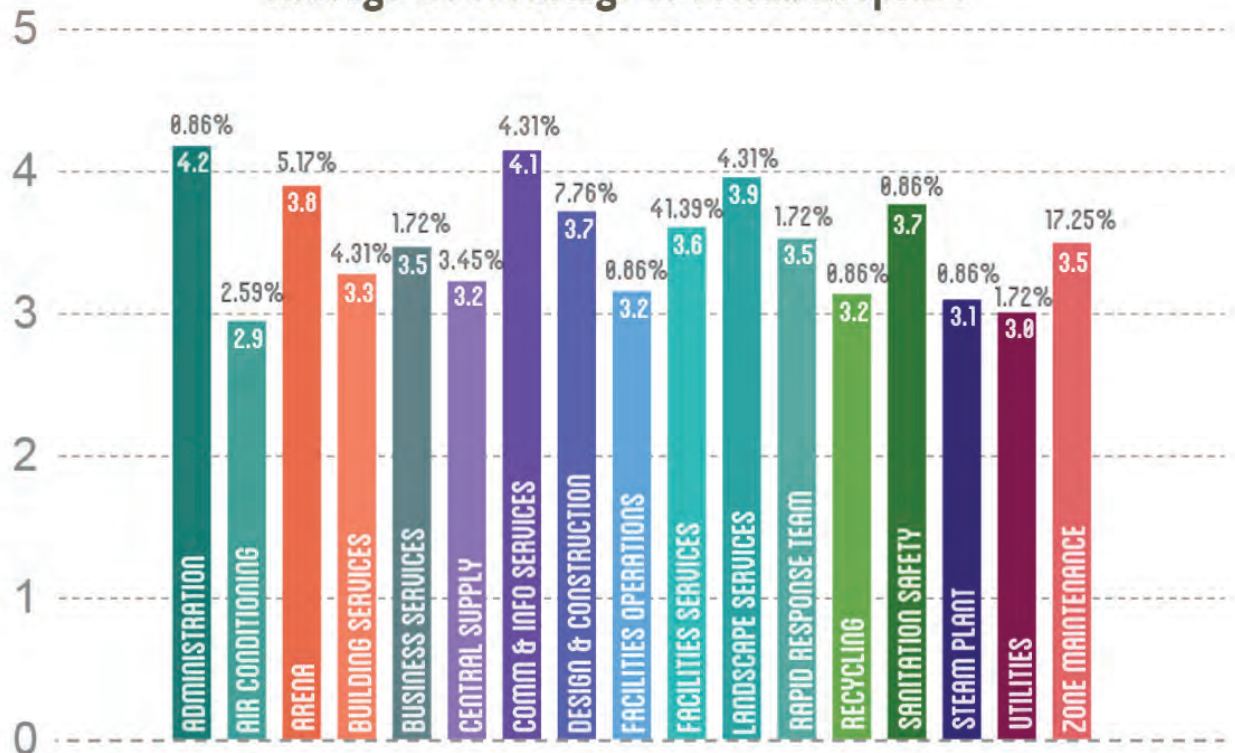


APPENDIX D - EMPLOYEE SATISFACTION SURVEY

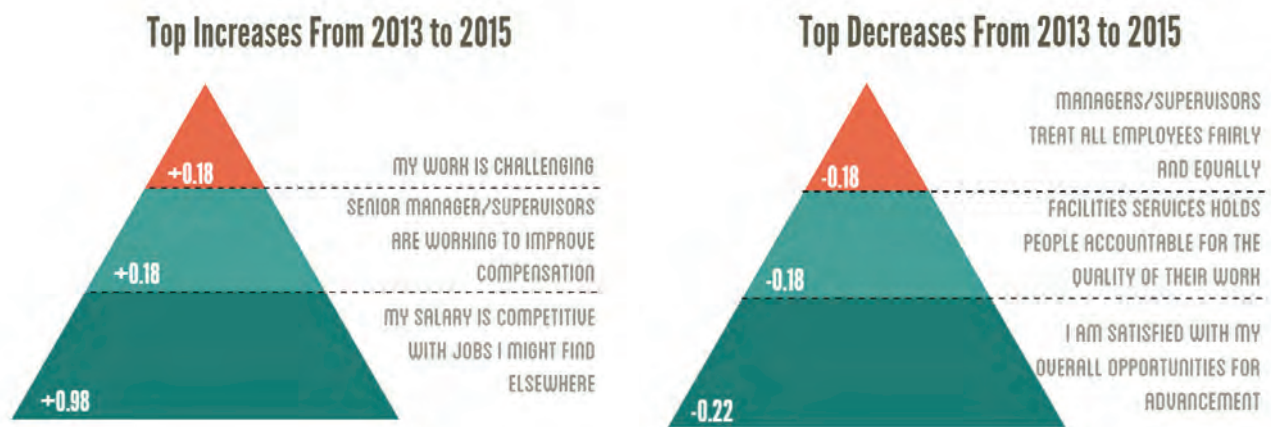
Comparison of 2013 - 2015 Respondents Per Unit/Subunit



Average & Percentage of Overall Response



APPENDIX D - EMPLOYEE SATISFACTION SURVEY

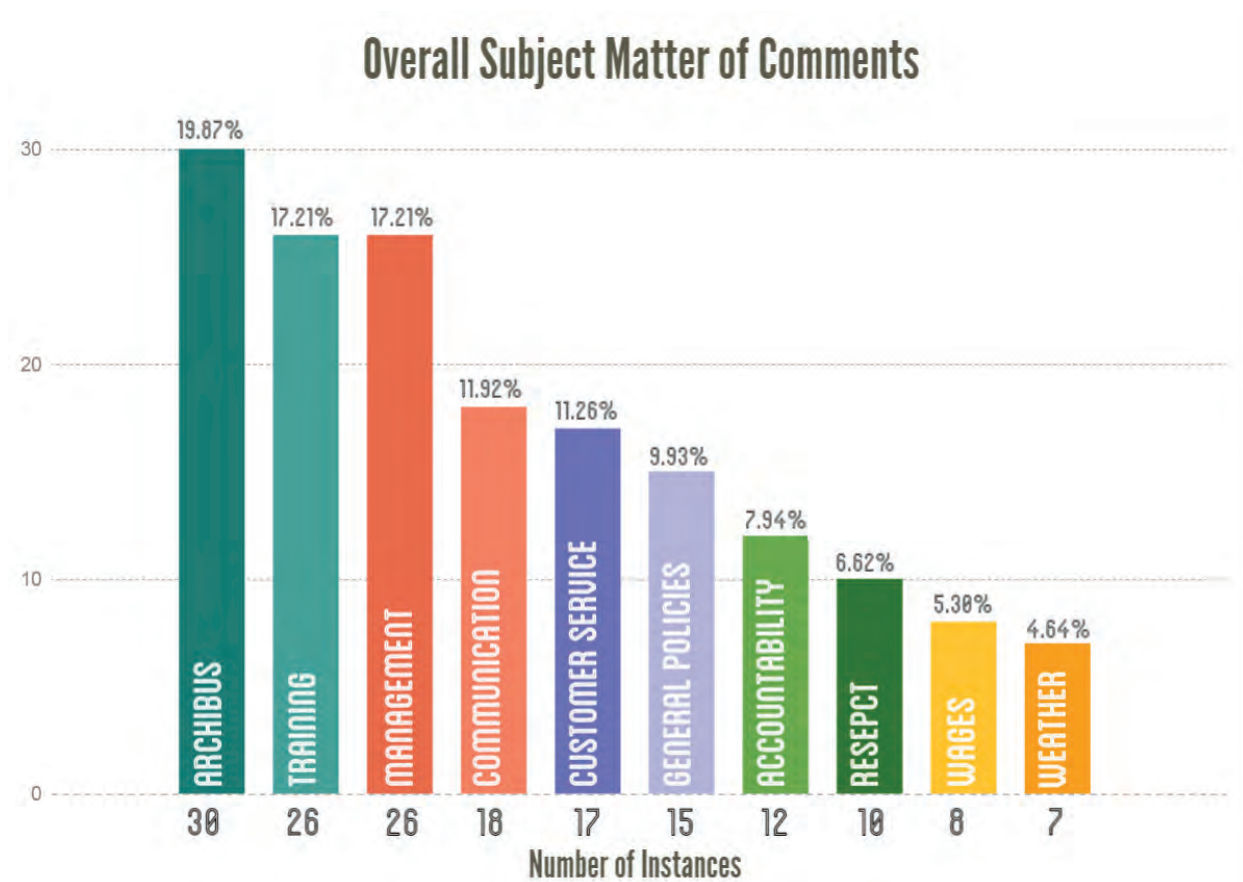


Overall Subject Matter of Comments - Broken down by percentage

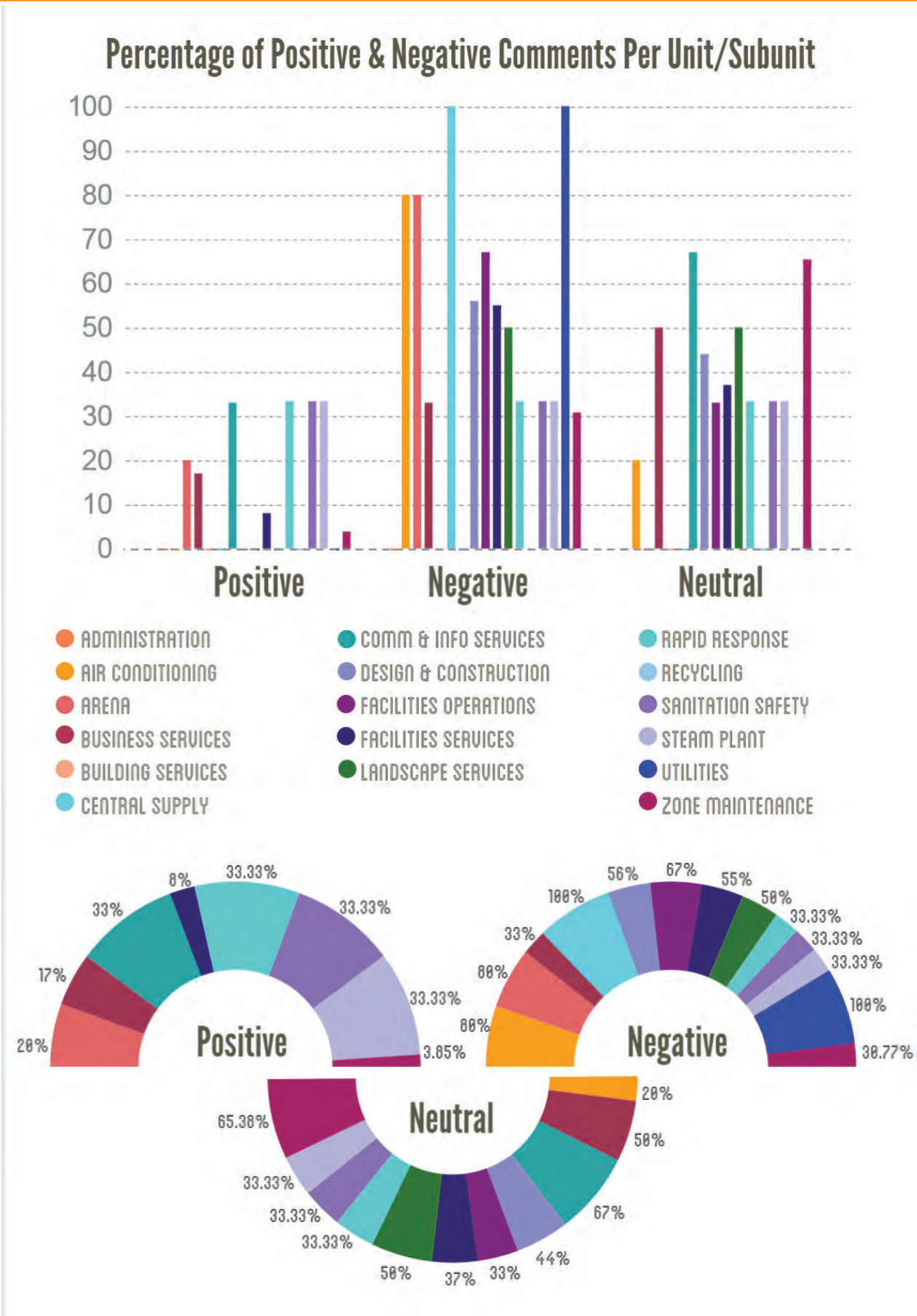
Many of the comments provided in the submitted surveys followed certain trends. Several comments dealt with recurring topics, both in a positive and negative light, throughout the 151 comments submitted.

The three questions in the comment section of the survey were:

- *What are your overall feelings/comments/concerns about Facilities Services?*
- *How can Facilities Services utilize its existing resources to increase overall responsiveness?*
- *How can Facilities Services, as a whole, better serve the campus?*



APPENDIX D - EMPLOYEE SATISFACTION SURVEY





SHOWCASE & ANNUAL REPORT 2015

Facilities Services Department

2233 Volunteer Boulevard
Knoxville, TN 37996

Phone: 865-974-2178

Fax: 865-974-7786

Email: admin@fs.utk.edu

Web site: fs.utk.edu