

# Facilities Management Evaluation Program

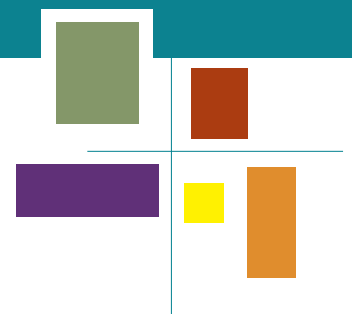
FMEP



Campus Planning and Facilities Management  
*Self assessment 2011*



THE UNIVERSITY OF  
**TEXAS**  
AT AUSTIN



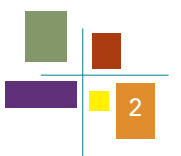
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## ORGANIZATIONAL DESCRIPTION



## Introduction

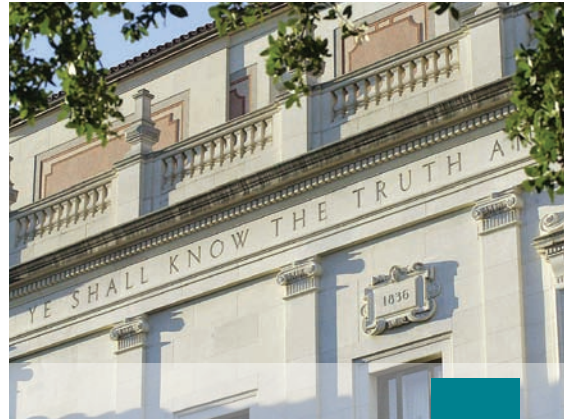
This document serves as the APPA Facilities Management Evaluation Program self evaluation for The University of Texas at Austin Office of Campus Planning and Facilities Management (CPFM). CPFM operates within the portfolio of the vice president of University Operations. The mission of CPFM is to “provide high quality management in the areas of planning, construction and operation of the facilities essential to the teaching, research, and public service functions of The University of Texas at Austin.”

## About The University of Texas at Austin

The University of Texas at Austin is one of the largest public universities in the United States and is the largest institution of the nine universities within the University of Texas System. Founded in 1883, the university has grown from a single building, eight teachers, two departments and 221 students to a 350-acre main campus with more than 140 buildings, 17 colleges and schools, approximately 24,000 faculty and staff, and nearly 50,000 students. Currently, there are more than 450,000 living alumni.

The mission of The University of Texas at Austin is to achieve excellence in the interrelated areas of undergraduate education, graduate education, research and public service. The university provides superior and comprehensive educational opportunities at the baccalaureate through doctoral and special professional educational levels.

The core purpose of the university is to transform lives for the benefit of society. The core values of the university are learning, discovery, freedom, leadership, individual opportunity, and responsibility.



## About Campus Planning and Facilities Management

Senior Associate Vice President: *Steven Kraal, Ph.D.*

Number of Departments/Units: 6

Number of Employees: 1,217.5

### Purpose Statement

To serve as the primary deliverer of facility management services for The University of Texas at Austin, provide information technology support for the University Operations portfolio, and enable the growth of campus-wide sustainability efforts.

### Strategic Goals

- Establish and maintain a safe environment for students, faculty, staff, and visitors.
- Operate efficiently and effectively.
- Create and sustain a positive work environment for CPFM staff.
- Ensure compliance with all applicable rules and regulations.

### Achievements

- Established a long term agreement with the Texas General Land Office for natural gas procurement, resulting in a more collaborative relationship.

- Reorganized Physical Plant into separate Facilities Services and Project Management & Construction Services departments, providing organizations that can more effectively focus on service delivery.
- Implemented a more effective approach to custodial services, providing a structure for better service delivery and management of this operation.
- Transformed Utilities and Energy Management into an organization focused on energy efficiency, employee participation, and safety.
- Implemented facility management software to provide data and information supporting CPFM operations and campus-wide space management efforts.
- Established a comprehensive condition assessment of university facilities that provides information supporting effective use of renovation and renewal funding.
- Implemented the ongoing Renovation and Renewal Program and the Facility Condition Assessment.

CPFM is comprised of six departments: Facilities Services, Project Management & Construction Services (PMCS), Utilities and Energy Management (UEM), Technology Resources (TRecs), Office of Campus Planning (Campus Planning), and Office of Sustainability.

## Facilities Services

### Facilities Services

(843 positions) – Director: Michael A. Miller, P.E.

#### Purpose Statement

Maintain, operate, and renovate facilities while providing facilities management services and facilities support services that exceed our customers' expectations.



#### Core Services

- Building systems operation
- Custodial services
- Facilities maintenance, including preventive maintenance, service calls, trouble calls
- Renovation and renewal (R&R) program
- Fire safety systems maintenance
- Energy and resource conservation
- Event support (for example, Gone to Texas, Commencement)
- Landscape services
- Recycling
- Solid waste disposal
- Surplus property
- Administrative, personnel, and business support for Facilities Services, PMCS and the office of the senior associate vice president for CPFM



## Customer Base

- Faculty, staff, students, visitors, auxiliaries, University Operations portfolio, UT System, general public, university departments, city and state agencies, vendors, media

## Strategic Goals

- High level of customer satisfaction
- Highly motivated, well-trained, and stable workforce
- Excellent facilities maintenance, operation, and services
- Culture of sustainable energy management
- Ample financial, material, and safety resources

## Achievements

### *Facilities Services*

- Completed more than 100,000 work orders per year

### *Custodial Services*

- Maintained approximately 8,000,000 cleanable square feet
- Reduced injury reports 54% since FY 2001-2002
- Reduced lost time injuries 85% since FY 2001-2002

### *Energy Conservation*

- Implemented a demand-side energy conservation program resulting in \$2.8 million annual savings
- Installed nearly 200,000 energy efficient lamps during the lighting retrofit project
- Received a 2010 SECO grant of \$1.6 million to install solar photovoltaic panels at J. J. Pickle Research Campus

### *Recycling and Sustainability*

- Completed a university greenhouse gas inventory in 2008
- Recycled 3,700 tons of materials per year, with 46% diversion rate

### *Landscape Services*

- Completed a campus tree audit of more than 4,900 trees
- Implemented the Longhorn ReLeaf volunteer program to promote tree planting on campus

### *R&R Program*

- Used 91% of funds for fix versus patch in FY 2008-2009, improved from 29% for fix in FY 1999-2000

### *Benchmarked by other organizations, including:*

- HEB Facilities Management
- Penn State University
- University of Minnesota
- University of Monterrey (Mexico)
- University of Stellenbosch (South Africa)
- University of Texas at El Paso
- Washington University Medical School

- Recognition and awards

#### *Facilities Services*

- APPA Award for Effective & Innovative Practices (international award) in 2009

#### *Facilities Maintenance*

- National (OS1) awards in 2010, 2009, 2008, 2006, 2004, 2003

#### *Landscape*

- National Air Filtration Association Clean Air Award in 2005

#### *Custodial*

- Texas Community Forestry Awards - Arboricultural Project Award in 2010
- Arbor Day Foundation Tree Campus USA in 2009 and 2010
- Arborist Larry Maginnis named Texas Arborist of the Year in 2008
- Grand Award in University and College Grounds from the national Professional Grounds Management Society in 2007 and 2004
- One of Landscape Management magazine's Top Ten Outstanding Grounds Operation in 2004

#### *Recycling*

- RecycleMania first place in Texas Gorilla Prize Division and third place in Texas Grand Champion Division in 2010
- RecycleMania first place nationally in Waste Minimization Division in 2007



## **Project Management & Construction Services**

**Project Management & Construction Services**  
(139 positions) – *Director: William H. Throop, MS, P.E.*

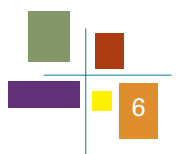
### **Purpose Statement**

Transform facilities with a commitment to excellence in project delivery, by anticipating and responding to the needs of our first class education and research university.



### **Core Services**

- Project management
- Project planning
- Procuring professional services for architecture and engineering
- Contracting for construction for renovations and new construction up to \$4 million
- Operating shops for construction of small projects under \$50,000



## Customer Base

Faculty, students, staff, auxiliaries, University Operations portfolio, city and state agencies, UT System Office of Facilities Planning and Construction (OFPC), Faculty Building Advisory Committee, university departments, vendors, general public

## Strategic Goals

- High levels of customer satisfaction with service delivery
- Responsive life cycle project delivery system for campus renovations
- Enhanced customer service and communications regarding status of renovation projects
- Positive work environment that promotes personal growth and professional success and which sustains the PMCS standard of excellence
- Optimized PMCS organization
- Renovation program that supports accessible, safe and sustainable campus facilities

## Achievements

- Completed 704 projects valued at a total of \$137 million from FY 2008-2010.
- Managed 853 Professional Service Agreements at a value of \$22.1 million from FY 2008 – 2010.
- Surveyed customers on 249 projects from FY 2008-2010, with a 50% return rate.
- Increased customer satisfaction from 84% to 88% during FY 2008-2010.
- Completed over 1,000 estimates at no cost to the institution from FY 2008-2010.
- Streamlined processes and documentation for staff and customers.
- Established an effective and useful customer service survey program.
- Began standardizing construction delivery processes.
- Streamlined project funding, purchasing, contracting, and accounting processes.



## Utilities and Energy Management

(180 positions) – *Executive Director:*  
*Juan Ontiveros, MSME, P.E.*

### Purpose Statement

To provide reliable and cost-effective electricity, chilled water, steam, deionized water, compressed air, emergency power, and elevator services for The University of Texas at Austin.

### Core Services

- Self-generation of electricity
- Mechanical distribution of utilities (steam, chilled water, water/wastewater)
- Electrical distribution of electricity (12,000 Volts, 4,160 volts and above)
- Elevator, escalator, wheel chair lift, and dumbwaiter maintenance and inspection (492 total)



- Metering of in-plant steam, electricity, chilled water, and domestic water, plus building meters
- Billing for all generated utilities and purchased utilities

### Customer Base

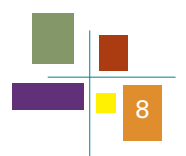
Undergraduate students, graduate students, pre-school children, teaching faculty, researchers, parents, staff, visitors

### Strategic Goals

- Respond to campus growth
- Improve training programs
- Develop Utility Master Plan

### Achievements

- Achieved \$23 million in savings from \$18 million in maintenance and operations (M&O) funds since 1997.
- Estimated \$10 million per year in avoided fuel costs from 2010 to 2038 from a \$140 million utility infrastructure investment, providing an IRR (internal rate of return) of 7.5% with a discount rate of 4.5%.
- Improved the average annual efficiency of the plant from 62% to 87% since 1996.
- Improved efficiency to allow campus to operate at 1977 fuel and emissions levels despite adding 8 million square feet.
- Reduced operating costs by \$1.7 million since 2006 by reducing water and waste water consumption plus \$206,000 by increasing recovered water production.
- Since 1998, upgraded and modified 165 elevators to meet latest code and safety requirements at a cost of approximately \$25 million.
- Awards
  - EPA Energy Star Award in 2005
  - Environmental Excellence Award for Industrial Systems from the Texas Commission on Environmental Quality in 2008
  - Global Climate Award for outstanding achievement from the International Energy Agency received in Copenhagen, Denmark, in 2009
  - Corporate Energy Management Award for Region IV by the Association of Energy Engineers in 2010

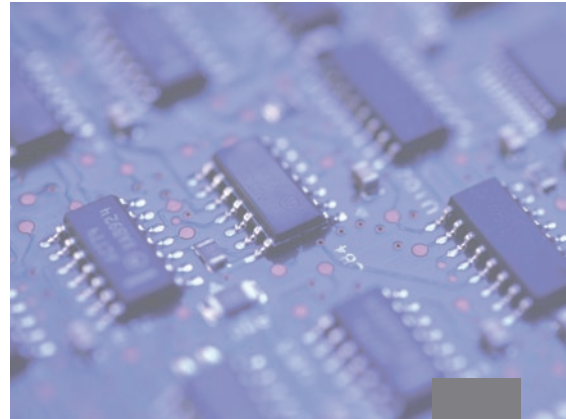


## **Technology Resources**

(49.5 positions) – *Director: Rogelio (Roy) Ruiz*

### **Purpose Statement**

Provide secure, reliable, and responsive information technology (IT) systems, solutions, and support to help business units efficiently increase their workload and deliver excellent services to a wide audience of campus and external users 24/7.



### **Core Services**

- Develop campus-wide software applications for CPFM, Human Resources, and Parking and Transportation (PTS).
- Develop applications for internal operations across the University Operations portfolio.
- Acquire, integrate, support, maintain, and administer third-party software.
- Maintain over 120 applications.
- Manage and develop databases.
- Manage projects.
- Design, develop, and support web sites for the University Operations portfolio and other sponsored programs.
- Support 1,658 devices including workstations, printers, switches, and firewalls.
- Ensure compliance with university, state, and federal security regulations and guidelines.
- Manage maps and geographic information systems (GIS).
- Provide space information support for the university.

### **Customer Base**

University Operations portfolio, students, staff, parents, visitors, job applicants, general public, university departments, vendors, media

### **Strategic Goals**

- Effectively provide technology products and services for University Operations
- Automate data entry and update tasks, freeing staff for strategic efforts
- Increase integration points with enterprise databases and information systems
- Form partnerships with campus IT organizations to streamline and simplify complex processes
- Provide greater flexibility and access for inquiries and reporting
- Secure an effective desktop environment for productive daily use

### **Achievements**

- Managed technical development of the Human Resource Management System (HRMS) and developed the system in collaboration with other campus departments.
- Added ability for job applicants to attach a resume, cover letter, and reference documents to their application for hiring manager review.

- Modified PTS “My Parking Profile” to reduce waiting in line to purchase permits and pay fines and to provide customers with understanding of their parking options.
- Ensured that all 48 web sites developed and maintained by TRecs Web Services meet or exceed established university standards.
- Integrated a utilities billing system for internal administration and introduced a public web interface for customers to review key elements of their consumption directly.
- Developed emergency text notification.
- Automated customer funded requests in WORQS to increase data accuracy, automate routing process and expand capital projects reporting.
- Synchronized FAMIS data with mainframe applications such as \*Define and ISFACL.
- Provost’s space information system achieved a two point increase in F&A (facilities and administrative cost) rate in 2008 and another 2.5 points in 2010, allowing for additional federal funding.
- Implemented the Meridian Document Management System (DMS) for the vice president of University Operations; second implementation for CPFM is underway.
- Brought the CPFM Information Management (IM) team into the TRecs organization to facilitate and strengthen efforts to manage and administer various CPFM information systems, including work, project, and space information management.

## Campus Planning

**Office of Campus Planning** (5 positions) – Director:  
David Rea, M.ARCH

### **Purpose Statement**

To facilitate the involvement of the campus community in capital improvement program (CIP) projects, while representing the best interest of the university in the design and construction of new buildings and major renovations.



### **Core Services**

- Represent the best interest of the university in capital projects.
- Develop data and information to facilitate campus decisions regarding campus planning and space management.
- Manage preliminary CIP project definition using various tools, including strategic master planning, conducting feasibility studies, and documenting project requirements.
- Manage planning and consulting firms.
- Prepare projects for addition to the CIP.
- Serve as liaison with the University of Texas System Office of Facilities Planning and Construction (OFPC).
- Assist with keeping campus informed and involved during capital project design and construction.

## Customer Base

- Faculty Building Advisory Committee, Facilities and Space Council, OFPC, vice president of University Operations, city and state agencies, media, university departments, auxiliaries

## Strategic Goals

- Improve services to campus.
- Implement a facility management decision making structure.
- Update the Campus Master Plan.
- Provide campus decision makers with thorough and professional preliminary building scope and cost assumptions for capital projects.
- Ensure the architectural integrity of the campus for the design of buildings and open spaces.
- Promote greater sustainability in the design and construction of capital projects.
  
- Provide guidance and coordination to assure campus infrastructure (for example, utilities, parking garages) keeps pace with campus needs and objectives.
- Assure each new academic building does its share to support the academic need of campus as a whole by incorporating centrally-managed classrooms and other general academic space.

## Achievements

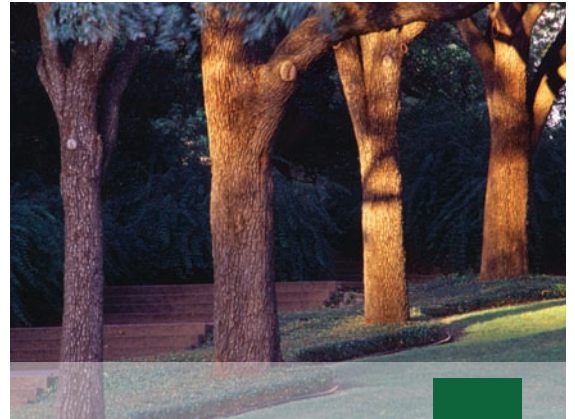
- Promoted sustainability, as demonstrated by four buildings being granted LEED recognition, totaling 870,000gsf. Another eight buildings totaling 1,400,000gsf will be seeking recognition at a minimum of LEED Silver.
- Achieved lower first cost by having all capital projects undertake a rigorous analysis of the systems supporting the building, without assuming the longest lasting system is the most appropriate, and specifying systems appropriate to the targeted design life of the building.
- Managed campus initiative to assist new students and visitors in finding their way across campus. Wayfinding standards are now implemented on every new capital project. (PMCS is managing the effort to implement the standards across campus.)
- Established improved capital planning process, with these results:
  - Strategic master plan for Cockrell School of Engineering
  - Feasibility study for expanding Texas Advanced Computing Center
  - Project definition for two Recreational Sports initiatives, saving substantial cost and campus staff time
  - Strategic master plan for McCombs School of Business

## Office of Sustainability

(1 position) – Director: Jim Walker, MSCRP

### Purpose Statement

To promote and support activities across campus that exemplify the university's sustainability policy and enhance the brand and identity of the university.



### Core Services

- Communicate university-wide sustainability activities as they relate to strengthening the university brand internally and externally.
- Provide strategic perspective on planning and operational activities.
- Collaborate with internal operational and academic units on leveraging ongoing and future activities.
- Collaborate with and report to external entities.

### Customer Base

Alumni, faculty, staff, students, visitors, auxiliaries, University Operations portfolio, UT System, general public, university departments, city and state agencies, media

### Strategic Goals

- Establish sustainability as a core element of campus culture.
- Evaluate sustainability progress through rigorous assessment and dialogue.
- Support existing efforts and create new opportunities that align with the campus sustainability policy.
- Support and strengthen the President's Sustainability Steering Committee.

### Achievements

- Re-chartered the President's Sustainability Steering Committee.
- Produced the annual campus sustainability report.
- Produced a Climate Policy Risk Assessment for the university.
- Developed the implementation strategy for the Green Fee Committee.
- Developed a tailgate recycling program during football season in collaboration with the Athletics Department.
- Supported development of the university's Greenhouse Gas Inventory.
- Supported implementation of the Academic Sustainability Directory.

## Acknowledgements

Many CPFM employees have devoted significant time to creating, reviewing and finalizing this self- evaluation. The following employees were involved in the effort:

FMEP Operational Champion: *Michael A. Miller, P.E.*

FMEP Core Team Sponsor: *Donna Budge*

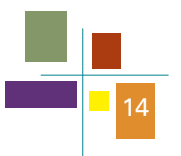
FMEP Core Team: *Jennifer Heath, Robyn Green, Isidora Sanchez, Ben Reid*

FMEP Criteria Teams:

	<b>Team Lead</b>	<b>AD Sponsor</b>	<b>Team Member</b>	<b>Team Member</b>	<b>Team Member</b>
<b>Leadership</b>	Zach Adcock	Sally Moore	Clay Looney	Bettie Simpson-Weeks	Rich Janes
<b>Strategic and Operational Planning</b>	Sam Narduzzo	Ricardo Medina	Cindy Brewer	Stephanie Dussault	Mike Holeman
<b>Customer Focus</b>	Noemi Nieto	Bridget Blizzard	Debbie Carrington	Seyfi Yazicioglu	Lauren Constant
<b>Information Analysis</b>	Ana Thiemer	Liz Beaman	Ryan Reid	Jeff Hoskins	Lynn Derrick
<b>Development and Management of Human Resources</b>	Adriana Rojas	Donna Budge	Mary Rodriguez	Vickie Cicchese	Windy Hardaway
<b>Process Management</b>	Kristy Hamrick	Mike Debow	Mindy Cool Hughes	Bud Hensley	Yancey Young
<b>Performance Results</b>	Ryan Thompson	Dan Costello	Theresa Kahlke	Linda Longo	Neil Crump
<b>Other Considerations</b>	Andy Yanez	Juan Nuñez	Jeff Basile	Roberto Del Real	Jim Walker

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## LEADERSHIP



## 1.0 Leadership

The facilities organization's senior leaders should set direction and establish customer focus, clear and visible values, and high expectations in line with campus mission, vision, and core values. Leaders inspire the people in the organization and create an environment that stimulates personal growth. They encourage involvement, development and learning, innovation and creativity.

### ***1.1 Leadership roles and responsibilities are clearly defined.***

Leadership roles and responsibilities are clearly defined within the Office of Campus Planning and Facilities Management (CPFM). The director of each department reports to the senior associate vice president for CPFM, who reports to the vice president for University Operations. This line of reporting creates a straightforward avenue for communicating the CPFM vision and mission to the university.

The majority of CPFM departments maintain active web sites that describe their organizational structure and communicate their mission within the organization. All employees have clearly defined performance objectives, and all staff members are evaluated formally at least once a year based on their objectives.

CPFM has identified two opportunities to improve communication and transparency: websites for the Senior AVP and Office of Campus Planning (Campus Planning) and a shared network file for CPFM where all organization charts and position descriptions reside.

#### **Facilities Services and Project Management & Construction Services (PMCS)**

Both departments maintain web sites with clearly defined organizational roles and responsibilities. The sites include the Employee Policy Manual shared between the two departments, organizational charts for each division, and each department's strategic plan. The first section of the Employee Policy Manual describes the vision, mission, values, and roles and responsibilities within both Facilities Services and PMCS, including management and supervisory responsibilities. Written position descriptions for PMCS and Facilities Services are maintained on file.

#### **Utilities & Energy Management (UEM)**

UEM maintains a web site that includes organizational charts, the strategic plan, and the departmental Employee Policy Manual. The manual covers management roles, supervisor and employee responsibilities, and the department's mission, vision, and values. Written position descriptions are maintained on file.

#### **Technology Resources (TRecs) and Office of Sustainability**

Both TRecs and the Office of Sustainability maintain their own departmental web site that describes the departmental roles and responsibilities.

### ***1.2 The leadership system is understood by and communicated among all levels. The leadership system includes mechanisms for the leaders to conduct self-examination, receive feedback, and make improvements.***

CPFM leadership has well-developed lines of communication, both formal and informal, that ensure constancy of purpose. Smaller organizations, such as UEM, tend to use less formal,

interpersonal communication models. Larger groups use planned communication methods such as weekly shop meetings, staff meetings, and larger scale forums on a periodic basis. All employees are encouraged to use the university president's Ideas of Texas web site for suggestions and feedback. CPFM also uses an "electronic suggestion box" web site known as the CPFM Feedback Forum, augmented by actual suggestion boxes placed in strategic areas. This approach allows CPFM employees to view all suggestions and responses. The open-door management approach throughout CPFM encourages feedback and suggestions from all levels.

Beyond the ongoing two-way communication across levels, departments employ a variety of specialized mechanisms for providing constructive feedback to leadership for self-examination and performance improvement. CPFM leaders have used 360 degree evaluations to evaluate strengths and areas of opportunity related to their skill level, as well as what is required for their position. Two CPFM employees are certified to present the findings of these evaluations. PMCS has demonstrated the most consistent use of employee feedback for supervisors and the organization's performance. In other groups, online surveys are used. However, there are opportunities for using survey results more consistently and communicating results to employees.

### **Facilities Services**

The department recently implemented an Employee Work Environment Survey and presented the results on the Facilities Services web site. The leadership team demonstrates a commitment to maintaining a work environment that is consistent in word and deed. Employees are familiar with the leadership system and aware of department policies; the organizational structure and policies are available on the department web site and described in new employee orientation. The department has services available to conduct 360 degree reviews in order to improve individual's leadership skills. Senior leadership in Custodial Services conducts quarterly meetings with first line supervisors to assess how well the leadership team is meeting the needs of the workforce.

### **PMCS**

Employees are familiar with the leadership system through weekly director shop walks, weekly supervisor staff meetings, and a semi-annual director's communication forum. These methods are also useful sources of feedback from employees. The department conducts a biennial Leader Performance Feedback Survey to provide supervisors with confidential feedback on 22 leadership competencies. All PMCS employees participated in a biennial employee climate survey, Survey for Organizational Excellence.

### **UEM**

Leadership uses several informal methods to receive feedback from employees. For example, the executive director conducts walking tours of UEM divisions to see the projects being performed as well as to gauge employee morale and well being. Daily and weekly supervisor staff meetings are also held throughout UEM divisions to discuss work environment issues. The Power Plant division also has bi-weekly meetings with managers to discuss employee and operational issues.

### **TRecs**

The department uses a variety of means to receive feedback, including employee suggestion boxes and team and individual meetings.

**1.3 The organization has clearly aligned its mission, vision, and values statements with those of the Campus. Regularly communicates with employees, customers, suppliers, and other stakeholders.**

CPFM is aligned with the university mission, vision and values. Four of the six CPFM departments—especially those with larger budget responsibilities—have a formal strategic planning process to ensure major efforts are assigned appropriate priority and linked with campus objectives. These strategic planning processes occur at regular intervals and are designed to include broad stakeholder input. In some cases, more frequent, high-level reviews are held periodically to assess progress and make necessary mid-course corrections in the plan. Opportunities exist for all departments to develop a formal schedule of routine planning with an annual follow-up.

Each department is committed to communicating actively with employees, customers, suppliers, and other stakeholders. Rather than relying solely on indirect methods of communication such as web pages, the groups use a variety of outreach approaches including mass notification e-mails, newsletters, employee and customer forums, targeted customer meetings, surveys, customer project meetings, conferences, and social media. New employee orientation provides valuable institutional and work process background information for newcomers. This multi-faceted approach to communications is a CPFM strength. However, due to the number of activities underway at any given time, communication efforts can create a state of information overload, and sometimes relevant news items are not communicated in a timely manner.

Despite the diverse array of communications methods used, opportunities remain for better conveying to employees the links among their role and performance, the department's activities, the portfolio's activities, and the university mission.

**Facilities Services**

The department's core values are service, integrity, teamwork, excellence, and stewardship (SITES). To promote employee awareness of these core values, the SITES Employee Recognition Program awards Facilities Services and PMCS employees who exemplify the core values in their work. Communication with customers, stakeholders, and employees takes place through the department's web site and Facebook page, mass e-mails, monthly forums at the J. J. Pickle Research Campus (PRC) with the associate director, quarterly forums with the Facilities Services director, and quarterly shop meetings. The department recently launched a customer survey program to obtain feedback on the services provided.

**PMCS**

A biennial strategic planning session ensures alignment with the university mission. Customer input is also sought for inclusion in the PMCS Strategic Plan. The director meets twice a year with employees in a communication forum. PMCS includes customers in all project meetings and customers actively participate in all project phases. Upon completion of every capital project, customers are given a customer satisfaction survey. PMCS has a liaison program with colleges and auxiliary facilities, and senior management routinely meets with the various colleges. Finally, PMCS proactively promotes the use of historically underutilized businesses (HUBs) in all purchasing and contracting operations through various means, including the annual Construction HUB Forum.

**UEM**

The department develops a UEM Strategic Plan every ten years to ensure alignment with the university mission. The executive director also attends the CPFM Facilities Forum and meets regularly with the senior associate vice president to assess progress and maintain alignment.

The department holds informal meetings and uses a web site, newsletters, and monthly reports to communicate with customers, employees, and stakeholders.

### **TRecs**

TRecs maintains alignment with the university mission, vision, and values through monthly reporting to the vice president of University Operations and senior associate vice president of CPFM, and the director meets monthly with the vice president. The TRecs leadership team keeps customers and other stakeholders informed through regular meetings. The Information Management (IM) division uses web page updates and mass e-mails to communicate with customers and employees. Quarterly FAMIS forums and targeted meetings with customers are also held.

### **Campus Planning**

The department meets once a year to inform customers and employees of changes to campus.

### **Office of Sustainability**

The office uses a web site to communicate with interested parties and expects to continue the successful sustainability conference as an annual event.

## ***1.4 Facilities management leaders spend time on a regular basis with their customers and front-line staff.***

CPFM leaders regularly spend time with both customers and front-line staff. Most departments conduct regularly scheduled meetings with customers to determine level of satisfaction and to communicate issues. Web sites are one tool used for communicating services, accomplishments, and upcoming events, and for providing information on each department's processes. The directors of Facilities Services, PMCS, and UEM schedule regular meetings with various customers as a means of judging the needs of the university and discussing ongoing issues of joint interest. As part of large project scoping efforts, Owners Project Requirement (OPR) meetings are held prior to the start of design of larger projects to assure the mission of that college and needs of the stakeholders are considered and discussed carefully prior to the start of project design.

Each department director has several methods to communicate with staff. Regularly scheduled meetings are held in many of the departments to communicate trends, projected changes within the organization, safety trends, and sustainable initiatives. The directors and the senior associate vice president of CPFM conduct regular walking tours of the campus grounds and buildings to identify areas of opportunity and to talk with staff in the field.

### **Facilities Services**

The leadership team meets regularly and passes information from assistant and associate directors to managers and supervisors. Management members also meet routinely with front-line staff and hold ad hoc meetings with customers and Zone supervisors. PRC holds a quarterly Town Hall Meeting to share information with the occupants of these PRC facilities. In addition to its web site, which is targeted to customers and employees, Facilities Services has developed a Facebook site and an employee e-mail newsletter to encourage communication.

## **PMCS**

The director of PMCS meets weekly with the provost to review upcoming projects and provides minutes from those meetings to his management team for dissemination. PMCS appoints liaisons to the larger colleges to communicate colleges' needs back to the department and to act as the colleges' advocates during construction projects. PMCS meets monthly with leaders from Facilities Services and quarterly with leaders from Environmental Health & Safety (EH&S) to share opportunities for improvement in processes and procedures and to address concerns. Results of these meetings include improved written standard operating procedures, tracking of project close outs, and communication about equipment on campus that requires regular maintenance.

One of the more important communication opportunities in PMCS is the semi-annual Communication Forum held off site with all members of the PMCS staff. Areas of discussion include work achievements, special project information, individual recognition opportunities, and safety statistics. A question and answer session is held during this forum. The director also schedules routine meetings with PMCS shop personnel to discuss issues of concern to them and monthly with the management team to review project progress. An annual HUB forum is held to communicate to customers and suppliers about upcoming project opportunities and program changes. Weekly, the director meets with the management team on issues.

## **UEM**

Divisions including the Power Plant, Chilling Stations, and Mechanical and Electrical Distribution groups have developed systems that feed into applications such as ENURGY and the Campus Energy Dashboard that provides customers accurate energy use billing and energy use data and publish a monthly real-time energy use and billing application. UEM holds daily meetings with front-line staff and bi-annual meetings with external customers. Additionally, the executive director conducts walking tours with UEM shop personnel.

## **TRecs**

The department maintains communication through web page updates and mass notification e-mails to customers and front-line staff. Quarterly meetings are held with the administrative staff concerning FAMIS (software) updates, improvements, or issues. TRecs holds regular meetings with staff members and customers.

## **Campus Planning**

The department conducts an annual meeting to inform customers and front-line staff about projected changes to campus.

## **Office of Sustainability**

The web site updates customers and staff about sustainability initiatives, events and resources. The office has collaborated in developing and promoting a Sustainability Conference on main campus to inform the university community about actions being taken in regard to sustainability. This is expected to become an annual event.

### ***1.5 Performance measures at each level of the organization are clearly defined.***

CPFM clearly defines performance measures at each level of the organization. Specific performance measures vary from one department to another, but all are tied to the quality, cost, or delivery of provided services and expertise. Senior leaders of several departments hold quarterly

meetings with their divisional reports where performance measures are reviewed and discussed; these meetings are often based on weekly or monthly measures used by lower levels of the organization. Field personnel are not always aware of the meaning and purpose of performance measures. An opportunity exists to better define how an individual's performance relates to overall organizational goals. Larger departments provide monthly financial reports to the vice president of University Operations.

### **Facilities Services**

Quarterly Management Metrics Review (MMR) presentations for each division can be accessed through a network folder shared with PMCS. Some examples of the performance measures within these reports include:

- Custodial Services' monthly measurements of rework and cost per hundred square feet by building;
- Facilities Maintenance's weekly measurements of aged work orders, monthly measurements of work order backlog and man-hours per completed work order, quarterly measurements of cost performance, and annual measurements of maintenance costs per gross square foot by building;
- Support Services' monthly measurements of cost per maintained acre and solid waste recycling data and an annual FS employees satisfaction survey;
- Business Services' quarterly tracking of overall department budget and expenditures;
- Administrative & Personnel Services' quarterly tracking of training events and worker's compensation; and
- PRC's quarterly measurements of preventive maintenance and trouble work orders, status of projects, and annual expenditures.

### **PMCS**

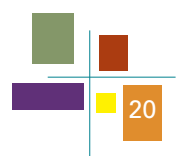
The department conducts Quarterly Review and Analysis (QRA) presentations for each division that are accessible through a network folder shared with Facilities Services. The presentations include project information such as status, duration, funding, and projects assigned per person. They also provide Customer Satisfaction Survey trends, HUB participation, safety trends, and budget analysis.

### **UEM**

The department's monthly utility system reports are available on a shared network drive for such measures as natural gas consumption, total energy consumption, chilled water usage, electrical usage, and steam usage, as well as weekly progress tracking on projects and energy outages. Additionally, the department launched a web based system that publishes billing and performance reports on a monthly basis for internal customers and stakeholders. Another web based system nearing completion will provide engineering data for buildings. Work performance is reviewed for each employee at least once a year through an evaluation process when the employee's primary responsibilities are reviewed and evaluated.

### **TRecs**

A combined monthly report for the department's divisions is available on the TRecs web site. The report provides data for measures such as number of web page hits, service request volume and performance, and results of the customer satisfaction survey automatically sent to requestors when their service request is closed.



## ***1.6 Senior leaders establish and reinforce an environment where shared values support self-direction, innovation, and decentralized decision-making.***

Within CPFM, personnel are free to manage day-to-day activities within the boundaries of organizational processes and procedures. Organizational processes and procedures are not necessarily created to promote self-direction, innovation, and decentralized decision-making, although some do allow for this to occur. A formal effort to reassess organizational processes and procedures with the overall goal of promoting self-direction, innovation, and decentralized decision-making represents an opportunity for organizational improvement.

### **Facilities Services and PMCS**

These departments share an Employee Policy Manual available on the Facilities Services and PMCS web sites. The manual serves as a baseline for allowing self-direction, innovation, and decentralized decision-making, and is the baseline for performance that is not necessarily stated. It establishes responsibilities for employees and supervisors and provides written guidance for vision, roles, and responsibilities; teamwork; recruitment/compensation/pay issues; stewardship of university facilities and property; and professional conduct. Additionally, PMCS adheres to written standards and procedures available on the PMCS web site in order to ensure projects are carried out safely and consistently. Self-direction, innovation, and decentralized decision-making are possible within the confines of these written documents and also when these written documents are updated.

### **UEM**

The department developed a strategic plan and its values, goals, and mission statement with input from everyone in the work group. The budgeting process is decentralized to encourage self-direction, innovation, and decision-making. Specifically, all purchases below \$25,000 are delegated to associate directors, and budgets have been delineated down to the manager level for accountability in meeting budget goals. A formal project management approach is taken with daily efforts as well as with large maintenance activities, construction activities, inspections, and capital improvements.

### **TRecs**

The organization promotes self-direction, innovation, and decentralized decision-making by setting forth the expectation that employees will focus on solutions when efforts do not go as planned and then come together as a team to strategize about how to prevent the problem from reoccurring.

## ***1.7 Informed of current trends and practices in the industry.***

CPFM departments stay informed of current trends and practices in the industry. Departments actively seek opportunities to visit and host peer institutions for benchmarking purposes including Pennsylvania State University, University of Southern California, University of Michigan, Texas A&M University, Wake Forest University and Washington University. CPFM regularly participates in APPA, CAPPa and TAPPa, Big 10 and Friends, Big XII and Friends, facility conferences, including making presentations. In 2008, the university hosted the TAPPa conference. CPFM provides opportunities for professional development through benchmarking private sector and industry trends and practices so that opportunities can be identified, developed, and possibly provided. Professional development and evolution of industry practices needs to be expanded to include technical staff in a meaningful way.

## **Facilities Services**

Facilities Services keeps current with trends and practices through periodicals, web research, and conferences. The department offers professional development plans to associate/assistant directors and managers that center on conferences, training, and certifications from APPA. The organization coordinates regular attendance by personnel (through supervisory level) at APPA, CAPP, and TAPP conferences.

## **PMCS**

In PMCS, trend information is primarily focused on the professional level of the organization and includes monthly professional development classes which provide continuing education units. Involvement with APPA, CAPP, and TAPP keeps professional staff members informed of trends in the public education sector.

## **UEM**

Leadership in UEM is heavily involved in industry organizations such as APPA, CAPP, TAPP, IDEA, AEE, ASHRAE, Big 10 Utility Conference, and others. Attendance at events sponsored by these organizations is included in personal development plans for associate directors and managers.

## **TRecs**

The department encourages training, attending conferences, and participating in campus research and investigation committees. The IM division ensures awareness of industry trends and best practices in campus mapping and GIS.

## **Office of Sustainability**

The office subscribes to relevant periodicals, conducts web research, and attends conferences. Efforts of the office are reflected in the B+ score recently awarded to the university by the Sustainable Endowments Institute, as presented in the 2011 College Sustainability Report Card.

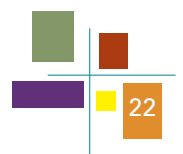
### ***1.8 A succession plan is in place to ensure continuity of leadership.***

A formal succession plan is not currently in place within all CPF departments with the exception of UEM. However, the CPF Executive Leadership Program prepares high potential employees for senior leadership positions, and all managers and project managers participate in the APPA Institute. These programs afford individuals a broader understanding of their own leadership styles and offer opportunities to improve their skills. Improving CPF succession planning could include creating a formal individual development planning process for staff and working with areas that lack a formal succession plan to design a formal strategy for continuity of leadership.

See sections 5.2 and 5.11 to learn more about CPF training programs.

## **Facilities Services and PMCS**

These departments share a Leader Development Program that prepares non-supervisory personnel for future leadership roles. They also have an informal mentorship program. Facilities Services has informal backfill plans in place for critical positions. Facilities Services and PMCS fill vacated leadership positions through a competitive process open to internal and external candidates. All managers and project managers in PMCS participate in the APPA Institute.



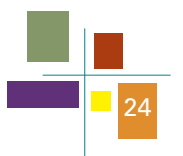
PMCS offers opportunities for leadership when individuals wish to pursue areas of interest that improve the workplace environment such as sustainability and safety events. Employees can gain a broader understanding of their own leadership styles and improve their skill sets. Safety Council, diverse work groups, and committees provide several opportunities to develop leadership skills.

## **UEM**

Formalized backfill plans are in place for supervisory positions. A core strategy is to create multiple levels of trade positions and supervisory and management positions. Because the skills needed to perform the duties in the department are extremely specialized and technical, the multiple levels create an organizational structure that encourages employees to move from entry or lower level to more technically competent positions. The formal test-based training program provides a vehicle to improve technical skills, train new employees and encourages employees to stay in the department. To further encourage this, employees can move up to more difficult positions, which is supported by a strong attempt to fill positions externally only at entry levels. In addition, the department's organizational structure uses progressive authority and responsibility, which facilitates employee development and helps create a strong candidate pool for promotions. The "evergreen" training system for supervisors and managers also helps prepare them for promotional opportunities.

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## STRATEGIC AND OPERATIONAL PLANNING



## 2.0 Strategic and Operational Planning

Strategic and operational planning consists of the planning process, the identification of goals and actions necessary to achieve success, and the deployment of those actions to align the work of the organization. The facilities organization should anticipate many factors in its strategic planning efforts: changing customer expectations, business and partnering opportunities, technological developments, evolving regulatory requirements, and societal expectations, to name but a few.

### ***2.1 A strategic plan exists that includes the goals and objectives of the department.***

Although Campus Planning and Facilities Management (CPFM) does not have a strategic plan, CPFM provides guidelines and direction to departments within the portfolio to establish their own strategic plan.

Facilities Services, Project Management & Construction Services (PMCS), Utilities and Energy Management (UEM), and Technology Resources (TRecs) anticipate many factors in their strategic planning efforts: changing customer expectations, business and partnering opportunities, technology development, and societal expectations. The Office of Sustainability helps implement and follow the strategic direction outlined by a presidential steering committee. The Office of Campus Planning works to meet the strategic goals listed in the above Organizational Description, but a strategic plan has not yet been developed.

### ***2.2 The strategic plan was developed with participation from internal and external stakeholders, approved by the administration, and effectively communicated.***

CPFM departments developed their strategic plans with participation from internal and external stakeholders and guidance from the vice president of University Operations and the senior associate vice president for CPFM.

#### **Facilities Services**

Development of the department's Strategic Plan for 2007-2012 included the senior leadership team and other affiliated staff members. Many Facilities Services staff members participated through small group sessions throughout the strategic planning process. Representatives from the internal and external customer community also participated in focus group discussions. The vice president of University Operations and the senior associate vice president of CPFM reviewed and approved the plan. Facilities Services' plan is communicated through the department's web site and by quarterly division meetings.

#### **PMCS**

In 2010, PMCS began revising the department's 2009 Strategic Plan and included the director, associate directors, managers and others in the process. Two campus customers knowledgeable of PMCS procedures also participated. The vice president of University Operations approved the 2009 plan. PMCS communicates the plan at the semi-annual staff communication forum, and progress towards selected objectives is reported in the Quarterly Review & Analysis (QRA).

## **UEM**

In developing its 2001 Strategic Plan, UEM's executive director, associate directors, managers, and key facilities staff met over several sessions to brainstorm about forming the mission, vision and value statements and long-term goals. One of the requirements was to have an alignment with University Operations' mission, vision, and values statements. Since then the plan has been adjusted using feedback from the University Operations portfolio members and the Vice President and Senior Associate Vice President at various strategic planning meetings so that the changing or evolving campus needs/challenges could be addressed. The strategic plan is available on the UEM web site and is communicated to employees through a yearly update.

## **TRecs**

The TRecs 2006 Strategic Plan was developed with input from within the organization and customer organizations. TRecs used University Operation's strategic plan as a guideline. The department communicates the plan through regular presentations to managers, supervisors, and staff.

## **Campus Planning**

Campus Planning is in the process of developing a strategic planning process that will support a broader campus-wide effort.

## **Office of Sustainability**

The President's Sustainability Steering Committee, comprised of faculty and administrators as well as student representatives and other key partners, serves as a forum for ongoing discussion of the university's sustainability initiatives and priorities. The Office of Sustainability helps implement and follow the strategic direction outlined by the Steering Committee.

### ***2.3 Customer needs and expectations serve as major drivers for setting strategic direction.***

CPFM holds Facility Forums three times per year to meet with key customers to obtain feedback on services provided by CPFM and uses this feedback to set strategic direction.

## **Facilities Services**

Facilities Services is a service organization. Customer needs and expectations are the focus of all that is done within the department. During development of Facilities Services' Strategic Plan, the department's customers participated in focus group discussions. Their needs and expectations were taken into consideration to set the strategic direction of the department. The department recently implemented a customer satisfaction survey to help identify service strengths and opportunities for improvement.

## **PMCS**

The department has included customers in biennial strategic planning sessions and has integrated their input into the PMCS Strategic Plan. Additionally, PMCS collects data from the customer departments through periodic client liaison meetings and post-project client satisfaction surveys. The department reviews trends and revises processes as needed to increase customer satisfaction.

## **UEM**

Customer expectations for services are two-fold. Provide consistent, high-quality and reliable utility and elevator/escalator services and provide them at the best value that considers efficiency and the environment. The UEM Strategic Plan includes a requirement for developing skills and technology needed to achieve customer goals, sustain the effectiveness and operation of existing equipment and systems and a requirement to master plan the development of the utility systems for the short and long term. UEM customer needs and expectations are determined from long range forecasting and dialogue with the key campus players that drive campus facility growth, and input is developed within capital project reviews with customers and their consultants. The department has frequent contact with stakeholders, customers, and their consultants during development of capital projects, scheduled utility maintenance outages, unplanned outages and final commissioning of new infrastructure.

## **TRecs**

The director of TRecs has identified and developed a plan to meet customer needs, which are then prioritized and tracked. TRecs produces a monthly Project Status and Priority Report, available online through the TRecs web site.

## **Campus Planning**

Primary customer contact occurs during focused planning efforts.

## **Office of Sustainability**

The activities of the office are in great part driven by the interests, passion, and drive of the student body. The office works closely with the student-operated Campus Environmental Center to develop and implement sustainability initiatives such as establishing Green Teams in departments and buildings throughout campus.

### ***2.4 Goals and key performance measures are understood by all and periodically reviewed.***

Each department within CPFM has its own set of performance measures created to support that department's strategic plan. These goals and objectives are quantified into key performance measures and are communicated to staff. The method in which this information is communicated varies by department. Some of these communication methods include presentations at quarterly metrics review meetings, town hall meetings, reports, and first floor television monitor in the Facilities Complex administrative building.

One of the major challenges for the CPFM organization is to communicate performance measure information to a diverse audience. PMCS and Facilities Services review their metrics quarterly. UEM utilizes real time data historians and real time models of the energy production facilities and the chilled water distribution system that in effect provide 24/7/365 continuous commissioning of plant systems. Elevator problems are compiled in a database and performance metrics trigger maintenance evaluations and reviews. Operational issues are inputted and reviewed on a daily basis.

See Sections 1.5 and 2.5 for additional information.

## ***2.5 Performance measures at each level of the organization are used to meet goals.***

Each department within CPFM has created performance measures to meet its specific strategic goals. See Section 1.5 for additional information.

### **Facilities Services and PMCS**

Divisions report the progress and status of their performance in attaining strategic goals at quarterly meetings (PMCS-Quarterly Review and Analysis, QRA; Facilities Services - Management Metrics Reviews, MMR). Measurable goals for the departments have been developed in response to historical knowledge and as a result of the quarterly reviews. When performance trends away from an established goal, departments may review and ultimately revise the goal. For example, due to variance in project size and complexity, PMCS developed two separate sets of performance criteria.

### **UEM**

UEM's standard of excellence requires that departmental efforts be cost effective and that performance be verifiable. The standard also requires that innovative services focus on safely maximizing plant and equipment reliability, availability, and performance while maintaining the highest safety standards and exceeding environmental requirements. To this end, the department continuously measures the costs of services and investigates any type of utility service interruption for root cause and required remediation. Lessons learned are documented, used to update formal operational or maintenance procedures as needed and used to train personnel with the goal in mind of preventing a reoccurrence.

### **TRecs**

The department has developed metrics for their four major goals. In turn, each of these goals has four measurable objectives. Customer service response time and days to repair are examples. The Project and Administration office is responsible for regularly communicating the goals and objectives of the organization through presentations to management.

## ***2.6 A budget is developed with input from staff that reflects historic expenditures, an analysis of needs, effective allocation of available resources to support the organization's goals and objectives, and seeks new and innovative measures to leverage resources.***

CPFM directors, associate and assistant directors (ADs), and managers develop a budget based on funds needed for operations and resources. The senior associate vice president for CPFM reviews the budget with respective departments. Resources and funding are then negotiated and shifted as needed from department to department depending on specific needs (incremental budgeting and no zero-based budget). The institution funds salaries for staff, but monies for maintenance, operations, and equipment (MO&E) must be earned in the form of reimbursable income. One method for additional sources of income is through receiving interdepartmental transfers (IDTs) for non-maintenance-related work that CPFM staff members perform for colleges and departments. A specific example is where PMCS' Construction Services shops perform renovation work for campus clients.

### **Facilities Services and PMCS**

The assistant director for Business Services oversees budgeting for both departments. Each year the director and ADs of the two departments meet separately to review and

discuss their respective budgets and make allocations based on historic data, goals, service, and cost trends. Managers also are involved in the process, empowering them to manage budgets for work groups. Budget allocations are made across divisions to support department goals and objectives. Facilities Services and PMCS budgets are based on cost of service and anticipated income. As these departments are service-based, they are staffed to support goals and objectives based on historical experience of workload. Budget cost is primarily salaries for projected staffing. Income is budgeted based on historical information projected for reimbursable work.

Recently, the Business Services division that provides budgetary services for both PMCS and Facilities Services has undergone a complete reorganization to eliminate unnecessary positions and add needed positions, such as a budget manager and a financial analyst, that add greater business flexibility to these two departments. The reorganization has increased budget awareness and reporting capabilities. Two of the recent additions are monthly budget reports and a greatly decreased backlog of project account close-outs.

### **UEM**

The department has shifted from a budgeting process that was based on just one account to accounts for each major shop area (manager). This was developed using historical performance and actual cost tracking over various years. The intent was to spread the responsibility for managing budgets to the lowest level possible. This encourages accountability, flexibility and removes process bottlenecks. The utility operation cannot be responsive to the reliability and operational needs of the campus with process bottlenecks.

In addition, the department requires that each division develop its own capital project level needs, with input from different work groups within the division that are prioritized and assigned to managers that support utility infrastructures. These projects are either for major repairs required for reliability or for upgrades that increase efficiency and cost effectiveness. Also, operational budget allocations are spread across sections to support goals and objectives.

### **TRecs**

TRecs has developed a cost of services budget for the organization with the participation of its managers. The overall budget takes into consideration supporting the operational function of the organization.

## ***2.7 Standards have been defined for overall operational performance, built environment, and landscape.***

CPFM departments have defined standards for overall operational performance, built environment, and landscape.

### **Facilities Services**

Standards are in place for numerous operations. Custodial Services follows Operating System 1 (OS1) standards for cleaning and management. This protocol is used to define cleaning tasks, processes, work assignments, and management tools. Landscape Services follows Professional Grounds Management Society (PGMS) standards. The New Building Funding model utilizes APPA and PGMS standards. Design standards used by PMCS allow for cost effective maintenance by Facilities Services across campus. Some design standards respond to statutory energy and

water saving objectives. Other standards are used for various performance measurements to gauge the success of the organization.

### **PMCS**

Design standards are already in place or in development to support maintenance and operational performance. Additionally, PMCS has developed standard operating procedures for project management functions. Design standards and procedures are available on the PMCS web site.

### **UEM**

UEM has developed construction and equipment standards for both built environment and operational requirements.

### **TRecs**

TRecs has developed standards for computer hardware and software related to its responsibilities. The department is assessing how software is currently used and how future purchases such as document management software can facilitate standardization within the CPFM departments.

See Section 6.6 for additional information on CPFM departmental standards.

## ***2.8 A campus master plan is in place, current, and utilized for decision making.***

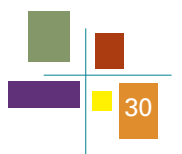
A Campus Master Plan was established in 1999 and this has guided decision making by CPFM departments regarding how resources are focused to maintain campus buildings and landscaping. The plan provides general guidance regarding the campus look and feel. Campus Planning has addressed almost all of the recommendations in that plan and recently procured consulting services for a revised master plan that will guide campus development over the next decade. A budget to fund the recommendations of the revised master plan will be created.

### **UEM**

The department incorporates the campus master plan in development of its master plans for chilled water, electrical growth, elevator/escalator service, and firewater. UEM uses campus master plans for long range infrastructure planning of upgrade requirements and capability confirmation.

## ***2.9 The operational units participate in the development of the construction program and are active participants in the acceptance of completed projects.***

CPFM departments participate in developing the construction program review process and actively participate in acceptance of completed projects. The process of developing the requirements for campus is called Owner's Project Requirement (OPR) process. The new building program, which is comprised of all new construction and renovation projects over \$4 million, is managed by Office of Facilities Planning & Construction, a part of the University of Texas System Administration. Renovation projects and new construction costing less than \$4 million are managed through PMCS. Regular meetings define the scope of the projects, which includes approval of the different design phases and acceptance of the completed project. Meeting participants



include Campus Planning, UEM, PMCS, Facilities Services (Facilities Maintenance, Landscaping, and Custodial Services), and Campus Safety and Security.

### **Facilities Services and PMCS**

Both departments participate in reviewing the capital improvement plans during the design phase. Facilities Services actively participates in the commissioning process. PMCS input into OFPC projects is limited to review at design phases in accordance with design standards and campus historical knowledge. Design review presents an opportunity to improve the design according to university standards.

### **UEM**

Along with the other CPFM units, UEM is responsible for reviewing and evaluating all capital projects. Each division associate director must confirm that all strategic planning goals and strategies can be met for the project.

### **Campus Planning**

Most capital projects begin with the involvement of Campus Planning which assists campus departments to understand how their current and project need can best be met using their existing facilities, and through the addition of the least amount of new space possible when necessary, and meeting these needs in a way which best works for the department as well as for the long-term plans of the campus. Once a capital project has been defined and approved to be added to the Capital Improvement Program, management of the capital project typically shifts to OFPC, but Campus Planning remains heavily involved from consultant selection through substantial completion. OFPC continually needs guidance from campus administration in order to keep projects within the agreed upon scope, budget and schedule. The initial point of contact for this guidance is Campus Planning. In addition, Campus Planning plays a key role in the processing of official documentation related to capital projects managed by OFPC, including approval letters, change orders, and substantial completion notifications.

## ***2.10 Strategies and processes are in place to ensure continuity of functions in the event of staff turnover or other disruption.***

Most departments have various standard operating procedures, participate in cross-training, and offer interim assignments and other programs to ensure continuity of function in the event of staff turnover or other disruption. This is an area of opportunity for CPFM; only UEM has a formal plan in place to ensure continuity of functions if staff turnovers occur.

### **Facilities Services and PMCS**

A business continuity plan is under development in Facilities Services. Both departments are planning to formalize succession documentation, but need additional resources to address this issue.

### **UEM**

UEM has created an organizational and salary structure as well as a training program designed to create an internal job progression process, thereby ensuring continuity of services. (See sections 5.2 and 5.11.) Due to the criticality of UEM services, the department has also developed a network of redundant distribution systems across campus to help handle upsets and restore

power. (See section 7.3.) As an example, the electrical system is a loop configuration and each building has two electrical feeds. Upon loss of service from one source, power can be restored by switching to the other feeder. Similarly, almost all buildings have 100% redundant chilled water, steam and domestic water connections. Procedures such as a department-specific Emergency Management Plan and written and practiced operational plans have been developed to ensure a continuity of services in the energy plants and to handle inclement weather or other situations. The elevator service provider is required to keep spares of all critical equipment. All repairs are handled on an accelerated basis to return the unit to operation as quickly as possible.

## **TRecs**

Each component of TRecs has standard operating procedures that can bring new staff members up to operational speed rapidly. TRecs also has a well-developed disaster recovery plan for each of its components. Across CPFM departments, TRecs maintains the FAMIS software, facilitates standard operating procedures, and supports transparency into department processes regarding software in order to maintain data integrity. See Section 2.11 below for more information about disaster recovery.

### ***2.11 Emergency response plans are in place, current, and communicated to Facilities employees and the campus community as required.***

Emergency response plans are in place for most CPFM departments and are communicated to employees and the campus community. CPFM receives notice of an emergency from the campus administration, then references and executes the appropriate emergency plan.

## **Facilities Services and PMCS**

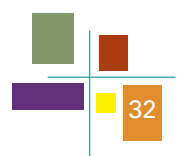
Both departments have emergency response plans and are in the process of developing more detailed plans.

## **UEM**

UEM has a comprehensive Emergency Management Plan that was recently communicated to employees through a series of meetings and is posted on the department's web site. The plan objective is to ensure department-specific preparedness and response to protect personnel and mitigate damage to university property. The plan describes critical functions and positions; designated personnel; and mitigation, preparedness, response and recovery actions for UEM during an emergency situation. UEM is also implementing cell phone communication, text messaging, and web site notifications as additional tools during emergency situations. An emergency response requirement has been formulated for each elevator so that the appropriate service will be dispatched to the elevator according to the building requirement.

## **TRecs**

The department has a comprehensive disaster recovery plan. The disaster plan addresses applications and servers; for both there are detailed procedures on what to do in case of a disaster. TRecs also has a call out procedure for staff in place in case of a disaster. The call out procedure identifies which staff members have the appropriate technology at home, so they can bring equipment and software back on line from home. The senior associate vice president for CPFM is currently working with TRecs to develop a desktop notification for improved communication during emergency situations.



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## **CUSTOMER FOCUS**

## 3.0 Customer Focus

Customer focus is a key component of effective facilities management. Various stakeholders (faculty, students, staff, and other administrative departments) must feel their needs are heard, understood, and acted upon. Various tools must be in place to ensure customer communication, assess and assimilate what is said, and implement procedures to act on expressed needs.

### ***3.1 Surveys, tools, and other methods are used to identify customer requirements, expectations, and satisfaction levels.***

Within Campus Planning and Facilities Management (CPFM), departments use various methods to identify customer requirements, expectations, and satisfaction levels. These methods include surveys, meetings, correspondence, department web sites, data gathering and reporting to management (Facilities Services' Management Metric Review-MMR, and Project Management & Construction Services' Quarterly Review and Analysis-QRA), computer programs, news, and social media. Surveys are in various stages of use and development within CPFM groups.

Almost every department has either periodic or "as requested" meetings with internal and external customers from colleges and departments across campus. These meetings are held monthly, quarterly, or informally. As with liaison and project meetings, informal conversations and meetings are held with customers to solicit feedback on performance. Meetings on campus with various organizations provide networking opportunities. In addition, each CPFM department interacts with internal and external customers through e-mails and campus mail to convey services offered, transmit documents, and receive service feedback.

Most departments within CPFM have a web site that explains services and provides a link or contact information to request those services. Nearly all of the CPFM departments use the computer program FAMIS to track project/work order information.

One common concern among some CPFM departments is the need for a centralized digital location to formally record the outcome of meetings and feedback and the actions taken to address customer concerns.

#### **Facilities Services**

The department recently implemented a customer survey of faculty, staff, and students who had placed work orders. The survey method continues to be refined and surveys will be ongoing. One of the goals for Facilities Services is to administer division-specific customer surveys immediately following completed work requests in addition to the general customer survey. Currently, the Central Stores unit of the Business Services division conducts an annual survey of customers, and the Accounting unit also has an annual survey to formalize the unit's feedback process.

Divisions share their MMRs with management staff quarterly to facilitate progress and solicit feedback on performance. Support Services attends regularly scheduled meetings with Campus Safety and Security, Physical Activity Facilities Assignment Committee (PAFAC), Campus Environmental Center (CEC), recycling and sustainability groups on campus, and design and construction project teams for various projects. The J. J. Pickle Research Campus (PRC) holds weekly construction project meetings with the project team, contractor, and customer to identify customer requirements, expectations, and satisfaction.

Facilities Services has identified a need for improved tools for capturing the needs of customers and for more proactive rather than reactive meetings with and about customers.

## **Project Management & Construction Services (PMCS)**

PMCS uses the WORQS (Work Order Request and Query System) web site to provide customers with an electronic means of submitting work requests for construct-renovate-install-build (CRIB), events, and other services. After work is completed on capital projects, an electronic survey is e-mailed to customer(s) by Project Control and Customer Relations (PCCR). Survey results are distributed through e-mail to the project manager and respective leadership (supervisor, manager, associate director-AD, director). PMCS sends e-mail surveys to customers for all event work orders, communicates results among staff, and contacts customers when negative surveys are received. Trend analysis is reported quarterly in QRAs. No surveys are conducted on non-capital project work orders.

PMCS holds periodic customer liaison meetings with all colleges and major departments. Liaison meetings are also held to communicate expectations and receive feedback from customers.

## **Utilities and Energy Management (UEM)**

The university expects UEM to deliver uninterrupted utility services at the most stable costs in a manner that is invisible to the university community. UEM's energy production plants annually consume an average of over \$24 million of natural gas. Managing a natural gas budget of this size is complicated since it is affected by variations in consumption, natural gas prices, natural disasters, and world political events. UEM uses data models to provide customers with semi-annual energy cost projections that enable customers to develop realistic budgets for the upcoming fiscal year. UEM also responds to requests for information and works directly with customers to resolve any billing or consumption discrepancies.

## **Technology Resources (TRecs)**

TRecs uses Jira for tracking software assets, SysAid for operations, and SurveyMonkey for receiving feedback on work orders. If a customer rates service less than satisfactory, TRecs contacts the customer by e-mail or phone and takes remedial action. Assistant directors meet monthly to set expectations. These meetings include producing reports of pending work orders longer than 30 days. TRecs also has monthly walks to seek feedback from customers. However, the department would like to generate a log to track the outcome of contacts with customers. Information Management has recently joined the TRecs team and has no formal tools to assess customer satisfaction.

TRecs would prefer to use FAMIS to collect customer feedback and outcome data; however, this system is not currently configured to do this effectively.

## **Office of Sustainability**

The Office of Sustainability uses Facebook to communicate updates on initiatives and to receive feedback. The department is also highlighted frequently in the Daily Texan, the university's student newspaper, with events and accomplishments. Meetings with customers and other stakeholders are held by request instead of regularly because this office has limited staffing compared to the campus population. There are no formal survey tools to assess customer needs and satisfaction.

**3.2 The roles, responsibilities, and services provided by the facilities department are well defined, communicated and understood within the department and by all communities served.**

CPFM departments have web sites listing and describing services, as well as containing organizational charts indicating staff roles and responsibilities. Departments maintain position descriptions and make them available to CPFM employees. The majority of the departments conduct business meetings with customers and staff to discuss work requests and projects. Several departments use e-newsletters to communicate with internal and external customers. CPFM organizes a Facilities Forum where the senior associate vice president and department directors meet with customers across campus to give and receive feedback regarding services provided. The current university policy is out-of-date and not clear.

Some departments have identified the need to update their web sites and job position descriptions to reflect changes in services, staff, roles, and responsibilities. Another concern for departments is that the technology used by customers to submit work requests is at times confusing due to the various forms offered.

**Facilities Services**

The Business Services division communicates roles in weekly leadership team meetings and quarterly meetings with division staff. Employees attend meetings with PMCS and Facilities Maintenance Renovation and Renewal (R&R) staff, among others, to facilitate meeting performance expectations and communicate goals. Pickle Research Campus (PRC) creates statements of work and work definitions; these are communicated to customers in meetings and through e-mails. Also, customers review and approve construction drawings before construction begins. Custodial Services documents roles and responsibilities through use of OS1, a comprehensive, high performance cleaning management system. The Custodial Services web page has recently been revamped to communicate custodial services to campus users more clearly. The Support Services division discusses departmental responsibilities in weekly leadership team meetings and one-on-one biweekly meetings between the associate director and each manager. Support Services also holds an annual all-staff meeting to discuss roles, responsibilities, and services within the department. Support Services' web pages need further development to inform customers on how to contact staff members and appropriate forms to use when requesting services.

When changes to the services that Facilities Services provides to the campus community will adversely affect customers, the department's communications coordinator sends an e-mail communication to all customers. The department has identified the need to educate new and existing customers about current processes, as well as the need to develop clear processes. Facilities Services has recently begun a new initiative called the Facilities Service Center, which will act as a single point of contact for all services provided by the department.

**PMCS**

PMCS has position descriptions available for all staff members. Staff member position descriptions may be different from daily work tasks; "other duties" can encapsulate significant performance expectations.

The PMCS web site includes information on services provided and instructions for customers requesting services. Standard operating procedures (SOPs) are available on the web site. SOPs are constantly evolving and training typically cannot keep pace with SOP development. The web site also includes project delivery SOPs for staff members which are used to facilitate

the project delivery process. Updating the web site is not typically under the control of PMCS and can be delayed.

PMCS holds customer liaison meetings at varying frequencies depending on the customer. These meetings provide a forum to discuss and clarify customers' questions and concerns. Customers use WORQS forms, but are sometimes confused as to which form they need to use.

## **UEM**

Besides providing uninterrupted service to the university, UEM also understands the importance of providing accurate energy meter data to customers so that they can better manage their bottom line. UEM has developed data access and analysis tools such as ENURGY and the Campus Energy Dashboard (under development). These tools allow campus users to see their building's real-time utility consumption as well as historical data and trends. (See Section 3.4.) Changes in services or the development of new tools that affect customers are communicated at senior level meetings such as the CPFM Facilities Forum and through informal methods like e-mail or the department's web site. UEM provides specific training to auxiliary enterprise customers in use of these analysis tools.

UEM regularly communicates the department's roles, responsibilities, and services through the UEM employee newsletter, the UEM web site, and monthly reports. (See Section 1.3.) Each technical area team meets regularly to discuss the status of ongoing work and plan for upcoming projects. For example, the power plant and chilling stations meet daily and hand out assignments. Supervisors and managers also have biweekly meetings with the associate director to discuss plant issues and the status of plant improvement projects.

## **TRecs**

TRecs regularly schedules liaison meetings with customers where roles and responsibilities are discussed. Also, the TRecs director and managerial staff members have a regular presence in customer team meetings such as the University Operations directors meetings and senior associate vice president meetings. TRecs is in the final phases of a new project management process which they will communicate to their customers once complete. This process consists of the steps related to submitting project requests and tracking active projects so customers have access to current project information.

TRecs staff members hold regular weekly, biweekly, or monthly meetings to discuss the status of ongoing and future work. The department uses its own wiki where service level agreements (SLAs) and SOPs are stored and shared with its staff members.

With the recent movement of Information Management (IM) to TRecs, there is a need to clarify roles and responsibilities. IM is currently working to improve its work scope and use its new web site to improve understanding of the group's scope.

## **Office of Sustainability**

The Office of Sustainability has one staff member. By sending campus-wide e-mails over the past year, the office has increased awareness of its activities among CPFM departments and the campus community. Collaboration with other organizations such as the Campus Environmental Center and the Presidential Sustainability Committee has also increased recognition and understanding of the office.

### ***3.3 Levels of service are set to exceed customer expectation and are defined in terms that can be understood by the administration, building users and facilities staff.***

Several CPFM departments comply with industry standards and align work practices with the university mission to meet customer expectations. Some have SLAs in place to maintain and uphold the agreed upon expectations of the departments and their customers. In addition, the majority of CPFM departments hold regular meetings with internal and external customers to define expectations and create plans to address issues as they arise.

Other forms of communication with customers include e-mail, network-shared folders, and web sites.

One reason that meeting customers' needs and wants can be challenging is that CPFM must comply with codes and industry and university standards. In addition, some customer expectations cannot be met or exceeded because of constraints in budget, staffing, service changes, and schedules.

#### **Facilities Services**

The department expects its employees to verify with customers that work was completed to the customer's satisfaction. The Facilities Services web site outlines the services that the department provides and how to access those services. The site also has a section for staff members containing employee policies and some standards.

At the division level, PRC holds weekly project follow-up meetings with customers to update and review projects in order to exceed customer expectations. To ensure the quality of work performed, PRC uses the PMCS architectural and engineering constructions standards for renovation projects (posted on the PMCS web site). Custodial Services adheres to the standards of the OS1 program, a comprehensive high performance cleaning management system, and the division's web site details levels and types of services provided. Landscape services uses Professional Grounds Management Society (PGMS) levels of service standards. Solid waste and recycling stations are serviced on a regular schedule, and the recycling web pages define recycling services and locations.

#### **PMCS**

PMCS projects are constructed in compliance with architectural and engineering standards and codes, with the desire to meet or exceed customer requirements. These standards can be found on the PMCS web site. Customers receive e-mails when their requests are received informing them of their project number and project manager. PMCS develops, publishes, and shares project schedules with customers. Department workload, milestones, capabilities and limitations are discussed during customer liaison meetings.

Compliance with architectural and engineering standards and codes sometimes requires work to be performed that customers did not request, including compliance with American with Disabilities Act (ADA), fire safety, egress path, and other requirements. This can add to total project cost. Projects may also include necessary facility/infrastructure repairs within the project area.

#### **UEM**

UEM has a long history of providing reliable utilities services to the campus, and the university has come to expect consistent and uninterrupted service. UEM has developed a network of redundant distribution systems to help ensure that delivery of utility services is as reliable as possible. If a utility outage occurs, the problem is quickly identified and UEM restores

service through one of the redundant systems. All unplanned utility outages are promptly reported to the senior management of University Operations and the affected customers. Customer feedback is received through the CPFM Facilities Forum as well as meetings between the UEM executive director and the CPFM senior associate vice president. An open dialogue exists between all levels of UEM personnel and customers, fostering trust and cooperation.

### **TRecs**

TRecs is implementing an industry project management process for submitting project requests and tracking active projects so that customers have access to current project information. In addition, TRecs sends monthly e-mails providing project status reports to the CPFM senior associate vice president and directors. SLAs are available to TRecs employees in the department in wiki. The IM unit sets goals to exceed customers' expectations but has not formally established levels of service, partly due to the variability of services offered.

### **Office of Sustainability**

The office supports the achievement of other department's levels of service goals such as Facilities Services' recycling. Currently, levels of service are not defined for general or comprehensive sustainability efforts.

## ***3.4 The communities served know how to obtain, monitor progress and evaluate the services offered.***

CPFM) customers use web sites, network shared folders, on-line work orders/project systems, and help desk phone numbers to submit, update, and obtain progress reports on requested CPFM services. Additionally, for capital projects, customers are assigned project managers to provide them with project reviews and status updates and to address concerns throughout the life of the project. Some CPFM departments request customer feedback through on-line surveys.

Concerns include the need for additional improvements to on-line tools such as WORQS in order for customers to do project tracking and reporting more efficiently. Also, there is no formal tool in place to solicit feedback for non-capital project and non-event work orders. In addition, web sites need to be updated on a regular basis to inform customers of new services and services that have changed.

### **Facilities Services**

The Facilities Services web site provides information on services provided and how to request them. Limited staff members maintain the Facilities Services and PMCS web sites; for this reason, web content can be outdated. The department's Facebook page is available to customers for gaining information and providing feedback, but it is rarely used for that purpose.

Divisions share management metric reviews (MMRs) with internal customers (Facilities Services, PMCS, and the senior associate vice president for CPFM). Customers use FAMIS to view work order status and other work related information. PRC employees and customers monitor project progress by formalized schedules, project photos, and weekly meetings. PRC customers receive a draft of the weekly meeting minutes for their review and approval, and they evaluate services by providing feedback during meetings. Customers call, e-mail, and use WORQS to obtain services. With full implementation of customer satisfaction surveys, customers will have the opportunity to make specific comments; in the past, door hanger evaluation cards have sometimes been used to collect customer feedback.

## **PMCS**

PMCS customers are informed of their construct, remodel, install or build (CRIB) projects by their project managers and construction coordinators. WORQS provides project information on costs, project status and project manager comments. Customer feedback is formally solicited on all capital projects. PMCS management uses Top 50 and Next 200 project review meetings to review project information provided by the project managers as the information has been entered in the work order system, FAMIS.

## **UEM**

UEM services are listed on the department web site. Trouble calls regarding power outages, elevator problems, water issues and other utilities problems are received by the Facilities Services trouble desk. The problem is then reported to the appropriate UEM division for resolution. For instance, elevator problems are addressed by a 24-hour maintenance team within 15 minutes during the work day and 30 minutes after hours.

Billing and energy consumption data are available to auxiliary enterprise customers and anyone with a university ID (UTEID) and password. Current monthly reports as well as historical data and trend information are accessible through ENURGY, a web-based utility reporting system that allows authorized users to view data, generate trend graphs, download raw data to Excel, and save data sets or trends for future reference. ENURGY also offers a variety of ready-made reports to answer basic questions and allows for a transparency of utility data not previously available. In the coming months, UEM will launch a Campus Energy Dashboard that allows campus users to access real-time energy data of campus buildings.

## **TRecs**

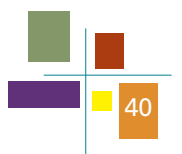
TRecs service information is available on its web site. Customers can call, e-mail, or submit/view the status of work orders through an on-line work order system named SysAid. The IM unit uses its web site to promote services. IM offers a variety of services, and therefore uses multiple systems such as FAMIS and WORQS to track its services.

### ***3.5 Customer feedback is used to build positive relationships, drive processes and effect improvements.***

Within CPFM, customer feedback helps drive positive customer relationships, policy process, and improvement. All departments maintain relationships through informal communication as well as scheduled meetings and conferences. Customer feedback identified through e-mails, conversations, meetings, surveys, MMRs, QRAs, and media plays an integral role in each department's processes. Many groups discuss lessons learned, develop strategic plans, and compare data to either create new processes or increase effectiveness of the processes already in place. Almost all of the groups hold regularly-scheduled departmental meetings that cover progress with internal and external customers. Some concerns about how CPFM departments respond to customer feedback are a lack of formal response mechanisms and that process changes can sometimes be made in a reactionary manner.

## **Facilities Services**

Management meets with customers when there is a complaint to better understand customers' dissatisfaction and take appropriate steps to correct it. The department will benefit from implementing a formal, proactive approach to identify customers' frustrations.



Facilities Services metrics and goals are based on services and processes important to customers. For example, Central Stores inventory survey is used to add desired items to the inventory. Frequently, PRC executes lessons learned after a project is completed to find out what the customer considers to have gone well and what did not. This feedback is used to improve processes and give recognition to deserving employees. Including the lessons learned in the project schedule needs to be consistent with all the PRC projects. Custodial Services uses the rework system to obtain immediate feedback from customers. This system allows customers to request additional service immediately if they feel that the work request was not fully completed to their satisfaction. Facilities Maintenance zones are responsive to direct feedback and employees take pride in resolving issues.

## **PMCS**

PMCS customer liaison meetings have significantly enhanced customer communication across all colleges and departments involved and have opened communications for both good and bad news. Informal relationships among staff and customers are effective in resolving daily issues and concerns.

The department's strategic planning includes customer participation, and customer input is incorporated into the new goals and objectives. PMCS has a strategic planning committee that includes customer participation in order to set new goals and objectives for continual improvements in processes and services.

PMCS communicates customer survey results among staff, and customers are contacted when negative surveys are received. Limited trend analysis is performed on results.

## **UEM**

Although UEM produces and distributes energy while being invisible to their customers, personnel work to cultivate positive relationships with the university community through an open dialogue of knowledge sharing, promoting energy efficiency, and coordinating planned outages and other maintenance work with customers.

## **TRecs**

TRecs creates monthly reports which include SysAid survey responses and web traffic statistics. These reports help determine the effectiveness of the services provided and develop appropriate actions to address customers' dissatisfaction. Also, these reports are used to create monthly report cards which are e-mailed to directors. Based on SysAid survey responses, TRecs customers have a clear understanding and a positive view of the department.

### ***3.6 Campus users have a clear understanding and positive view of the services provided by the facilities organization.***

CPFM believes that campus users have a clear and positive outlook on the services provided. From customer surveys to liaison meetings, most feedback has reflected that all the CPFM departments maintain a level of communication and services that are beneficial to everyone involved. Information on departmental web sites helps to clarify services and processes. The various awards received from the university and national organizations also confirm the positive view of the services provided. In addition, some campus groups hold appreciation events for the CPFM departments.

However, there are a few concerns. For example, some customers believe that certain services can be provided at a more reasonable cost by directly hiring outside contractors or vendors.

### **Facilities Services**

In general, customers have mostly positive views of the department. There is an opportunity to gather additional, division-specific feedback from customers through formal surveys in the future. Not all customers have a clear understanding of the facilities organization and how to request services. For example, some lack understanding of the difference between PMCS shops and Facilities Services zones. Some customers prefer to call rather than using WORQS when submitting and tracking progress of the services requested. PRC asks customers to sign off documents to ensure that there is a clear understanding of the project work and steps associated.

### **PMCS**

Customer liaison meetings and project surveys suggest clear understanding of PMCS and its services and provide feedback when there are areas of misunderstanding or concerns. Several customers have hosted luncheons for project teams in appreciation for services provided; at least two customers host annual events. Customers who frequently use PMCS services have a clear understanding of the services. Customers who rarely use PMCS services do not always clearly understand PMCS processes and methods. Satisfaction surveys and customer sign-off on projects provide a clear understanding of project scope.

### **UEM**

UEM receives the most attention when there are problems delivering energy to the campus. Conversely, when energy is delivered to campus in a safe, efficient, and reliable manner, the lack of customer feedback is perceived as positive. Efforts regarding energy efficiency and innovation have received positive recognition through campus publications such as The Alcalde, Our Campus, The Daily Texan, and most recently the campus web site KNOW. UEM accomplishments have also been recognized by local, national and international energy industry associations such as Texas Commission on Environmental Quality, Association of Energy Engineers, Environmental Protection Agency and International Energy Agency. This external recognition enhances the positive view of UEM within the university community.

### **TRecs**

TRecs is invited to participate in campus-wide committees such as the university IT Architecture & Infrastructure Committee, where decisions are made on services offered across the entire campus. TRecs participates in monthly meetings with University Operations directors to obtain feedback. Work well done is communicated to Desktop Support Specialists through e-mail or in group meetings. These specialists have zone areas which they regularly visit to build relationships with customers. An opportunity exists for IM to provide and receive feedback about services.

### **Office of Sustainability**

The Office of Sustainability is a relatively new department, so the campus community is not fully aware of the services it provides. In general, the office is viewed positively by a majority of the campus community because of the emerging trend of environmental concerns among students, faculty, and staff. One measure of interest in the office is the renewed interest in forming departmental and building Green Teams. A challenge is the lack of a single, common understanding of what sustainability means to the university.

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## **INFORMATION ANALYSIS**

## 4.0 Information and Analysis

Information and analysis are used to evaluate performance and drive future performance improvements. Of interest are the types of tools used (for example, peer comparative data clarified and validated through benchmarking), and how the tools are used to enhance organizational performance. Various aspects of information include facilities inspections / audits, financial / expenditure reports, utility data, and other relevant measures and indicators.

### ***4.1 A systematic process is in place for identifying and prioritizing performance indicators, comparative information, and benchmarking studies for the most critical areas.***

Campus Planning and Facilities Management (CPFM) has a systematic process for identifying and prioritizing performance indicators, comparative information, and benchmarking. Strategic plans provide the framework for departments' core values and processes. Metric reviews, participation in annual surveys, and financial reporting provide comparative information and benchmarking capabilities.

CPFM employs a number of processes to identify and prioritize performance indicators. There is no consensus across the departments and divisions regarding the meaning and significance of these key performance indicators.

More detailed information on CPFM benchmarking is provided in Section 4.2.

#### **Facilities Services**

The Facilities Services management team developed a five-year strategic plan in partnership with key staff members and customers. Five core values were identified: service, integrity, teamwork, excellence, and stewardship. The plan provides a framework for the department's efforts to become a world-class facilities management organization, known by customers and the nation for setting the benchmark in excellence and continuous improvement. It is reviewed every five years.

All divisions within Facilities Services provide quarterly metric reviews (MMRs) and highlight performance indicators relative to each division. The annual FPI Survey provides comparative information to peer institutions.

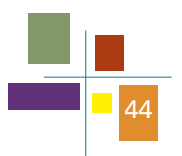
#### **Project Management & Construction Services (PMCS)**

PMCS developed and recently updated a five-year strategic plan. The organization identified six core values: service, integrity, teamwork, excellence, stewardship, and commitment. PMCS reviews the plan every two years.

PMCS reviews project-related data against a set of criteria based on project size. A committee is in place to address potential revisions to performance standards. Procurement spending with HUB firms and construction site safety observations are communicated monthly to management.

Monthly reports are compiled and distributed for management review including phase durations for construction, project durations, and any priority projects. The review results in corrective action at the project level. PMCS surveys customers whose projects have been completed recently; surveys focus on quality, management of funds, deadlines, and communication.

PMCS prepares quarterly reviews and analysis (QRAs) for each of their four areas and presents to their management group as well as representatives from Facilities Services.



These quarterly reviews focus on performance metrics for divisions and prompts discussion and further analysis within the organization.

### **Utilities and Energy Management (UEM)**

UEM developed a strategic plan, and the organization identified six core values: reliability, teamwork, safety in all aspects, foresight, cost effectiveness, and delivery of uninterrupted services. The plan is reviewed every ten years to adjust the long term goals; however the plan is adjusted annually to account for changing campus needs.

UEM bases its key performance indicators and methods for comparative information and benchmarking of the department upon industry standards in equipment, system, and energy performance measures, as established by standards associations such as American Society for Mechanical Engineers (ASME), American Society of Heating, Refrigeration, and Air-conditioning Engineers (ASHRAE), original equipment manufacturers, and others.

Factors considered when measuring against itself are campus space growth, energy growth, fuel volume, weather variations, plant efficiencies, equipment and distribution system availability and reliability and elevator entrapments. These variables are compared in multiple manners such as energy/SF, heat rate improvement, KW/ton, scheduled and unscheduled outage durations, individual turbine and boiler efficiencies and overall plant efficiencies on a continuous real time basis and hourly, weekly, monthly and annual basis.

This information is then used to adjust and improve operations and in effect allows for a continuous commissioning of the operation so that efficiencies obtained can be sustained. This is important in light of the fact that improved plant efficiencies have allowed the campus to return to 1977 fuel and emissions levels and an annual average efficiency of 87% though the campus has added about 8 million more square feet. Equipment will continue to age and systems will degrade so one has to keep a close watch and continue to sustain and improve on past performance.

Elevator performance is evaluated against the industry standards. The elevators are subject to mandatory annual inspections and these reports are submitted the Texas Department of Licensing and Regulation for approval and licensing.

### **Technology Resources (TRecs)**

TRECS uses several project template documents for managing software development projects throughout the project life cycle. These documents are also intended for benchmarking and comparisons in order to track performance indicators and drive action within the organization. This information is stored in Project Web Access and is available to all TRecs staff and designated University Operations staff members. Some of the project summary information is also presented on the TRecs Projects and Administration Office web site available to the university community.

TRECS is developing a centralized data repository to house key portfolio data so that real-time performance metrics can be derived and presented in web-based dashboards for executive decision support.

### **Office of Campus Planning (Campus Planning)**

Currently, Campus Planning does not systematically collect performance indicators on a consistent basis, but often generates indicator data during preliminary planning of large capital projects. Campus Planning regularly monitors operating expenditures to keep them within

budget. Projects are tracked in the Capital Improvement Program for preliminary cost based upon project type.

### **Office of Sustainability**

Priorities and framework for university sustainability performance indicators are currently being established through the President's Sustainability Steering Committee under the direction of the Campus Sustainability Policy. The Office of Sustainability supports and aligns with the Steering Committee and the Sustainability Policy. The office and the Steering Committee will be using the AASHE STARS framework as an initial starting point for developing and refining campus sustainability benchmarks.

The Office stays informed of sustainability-related metrics maintained by other departments such as CO2 emissions from utilities energy generation that are measured and reported by UEM in compliance with EPA requirements and guidelines.

#### ***4.2 Benchmarking results, comparisons and performance indicators are tracked and used to drive action within the organization.***

CPFM as a whole is involved with APPA, CAPP, and TAPP, and staff members attend conferences and meetings on a regular basis. This involvement allows the organization to network with other universities and stay abreast of current trends and developments within each department's service areas. CPFM members host and visit other universities regularly to identify best practices and to share ideas and information to improve processes. The annual Facilities Performance Indicator (FPI) survey is conducted and the results analyzed by a consultant to maximize effectiveness of outcomes.

All CPFM performance indicators, MMRs, QRAs, benchmarking, and other measures and comparisons are available to staff members who have computer access. Much of the information regarding Facilities Services' and PMCS' performance, benchmarking, and comparisons is displayed in the entry area of the Facilities Complex administrative building in the form of presentations, photos, and other information continuously displayed on a monitor.

CPFM departments conduct detailed benchmarking specific to their operations.

### **Facilities Services**

Each division completes a metric review and presents the results quarterly to the director and other attendees from within Facilities Services and PMCS. These presentations prompt discussions about performance issues and what is happening in each area. Efforts are underway to provide a standardized process for presenting this information.

Within the Facilities Maintenance division, the Renovation and Renewal program (R&R) uses VFA, Vanderweil Facility Assessments, to provide comparative information and benchmarking studies regarding facility condition audits. Zone Maintenance uses information from Whitestone Building Maintenance and Repair Cost Reference, a comprehensive source of building cost statistics, to benchmark and drive action on staffing levels, resources and budgetary needs. The zones use backlog and work order data to measure efficiency and effectiveness. This information is used to identify needs for staff resources within and across zones. Custodial Services uses state of Texas data for a regular comparison. APPA FPI data is also used to compare performance indicators with peer institutions.

An area identified for improvement is that benchmarking results are not always used to drive positive, proactive solutions to problems. They may simply pinpoint deficiencies that are not addressed.

### **PMCS**

Due to the large variety and specificity of PMCS projects on campus, informal benchmarking against other institutions is used. This information is not tracked or readily accessible.

### **UEM**

Benchmarking against other institutions occurs through collaboration during regular conferences, primarily the International District Energy Association (IDEA), World Energy Engineers Conference (WEEC), and the Big Ten and Friends. Along with similar departments at campuses across the world, UEM frequently documents and presents major innovations and obstacles to operational performance during the conferences, using industry standard performance indicators as means of comparison.

UEM collects comparative information from the equipment level up to total utility production. Networking with peer institutions through organizations such as the International District Energy Association and Big 10 and Friends allows for open comparison of efficiencies and performance indicators, as well as discussion with vendors and leading industry experts on the most efficient equipment and operation methods. Sharing comparative information among the university, other institutions, and industry representatives drives innovation within UEM. The success and performance of new equipment and operational methods are discussed and contribute heavily to project selection and implementation.

Continuous benchmarking occurs online through the use of system models to compare actual performance to historical and predicted performance. Benchmarking of individual equipment occurs at installation and all major overhauls and repairs. As performance begins to trend away from expected benchmarks, UEM initiates corrective action and analysis immediately and implements solutions as quickly as possible.

### **Campus Planning**

Benchmarking office performance is not tracked or used to drive action within Campus Planning. Benchmarking comparisons with other institutions based on space types and space use efficiency is sometimes done on a per project basis. During a recent engineering planning study, the university's College of Engineering was benchmarked with several schools of engineering across the country.

The Texas Higher Education Coordinating Board (THECB) uses space data provided by the university to benchmark classroom and teaching lab space across higher education institutions in Texas. However, the aggregated THECB indicators only compare campus space with student population and do not inform about the actual efficiency of the classroom/lab space usage nor about the quality or functional adequacy of the space.

### **Office of Sustainability**

The campus has been evaluated by the College Sustainability Report Card since 2004, receiving a grade of C- in 2004 and a B+ in 2010. The main campus was graded against other universities on established sustainability indicators. Results have prompted the university to participate in the Sustainability Tracking Assessment & Rating System (STARS), which provides a more detailed comparison to other universities and sustainable standards. The office supports and promotes

existing sustainability efforts on campus and initiates new collaborations among students, faculty, and staff to expand sustainability on campus. These efforts are being tracked and evaluated through STARS to ensure continuous improvement.

**4.3 The department ensures that data and information are communicated and accessible to all appropriate users. The required data and information have all the characteristics users need, such as reliability, accuracy, timeliness, and appropriate levels of security and confidentiality.**

CPFM uses a number of databases to manage data regarding the functions of the organization. TRecs administers and maintains several of these integrated information systems and reporting tools in support of CPFM departments' information and analysis needs. Most of departments rely on FAMIS tables in Oracle as the primary data source.

The following sections describe the systems, including information on communication, accessibility, reliability, accuracy, and timeliness.

**FAMIS (Facilities Asset Management Information System)**

This Oracle-based application is used for work management, project management, purchasing and inventory control, preventive maintenance, space inventory, and job costing. Multiple integration points with mainframe systems provide synchronization of personnel, accounting, purchasing, and other related data. FAMIS offers standard reports in PDF format and limited data extracts on work orders and projects.

Following are statistics about FAMIS use:

- 100,000 work orders per year (roughly half in support of preventive maintenance),
- 25,000 equipment records,
- \$50 million in project expenses per year, and
- 600 users.

See facility WORQS for additional information, documentation, and related resources.

**FAMIS Communication and Accessibility**

FAMIS data is used extensively for reporting purposes. Following are examples of how this information is communicated:

- PMCS project managers use a project management scorecard to measure the accuracy and currency of project data, as well as the progress of a project over time as reflected in FAMIS. Key measures are data integrity, budget information compared to funding, project status durations, and overall project age.
- For PMCS, each customer organization has an assigned project manager who acts as liaison. The PMCS liaison holds regularly recurring meetings with key customer personnel to discuss future needs, the status of active projects, make preparations for upcoming projects, and address any concerns.
- All performance indicators, MMRs, QRAs, benchmarking, and other comparisons are available to staff members who have access to the shared files. Much of the

information regarding Facilities Services' and PMCS' performance, benchmarking and comparisons is on display in the entry area of the Facilities Complex administrative building.

Most information based on FAMIS data is accessed through supporting systems such as WORQS and Cognos (see following sections) rather than the FAMIS application itself. The FAMIS application is primarily used for entering data and generating work orders and secondarily for reporting purposes. TRecs administers access to FAMIS using role-based security. TRecs follows the principle of least privileges when assigning roles; users are permitted the lowest level of access required to perform essential job functions.

Concerns about the communication and accessibility of FAMIS include these:

- The current configuration of FAMIS roles is not entirely satisfactory as most are too broad in some respects and too restricted in others, making it difficult to apply the principle of least privileges successfully in all cases.
- Data stored in FAMIS are the data most relevant to the largest population of Facilities Maintenance staff, yet some users note that the data are relatively inaccessible.
- For capital projects, FAMIS lacks both features and functionality. Critical data such as contract information, regulatory deadlines, and specific location information cannot be stored in a capital project record. As a result, some groups within the organization devote significant resources to building and maintaining independent databases, not accessible by most staff. This has created a system of double data entry and increased administrative tasks. Multiple databases sometimes house information that can be redundant, inaccurate, or stale. Specialized information is sometimes stored in rudimentary databases such as Excel and Access, making integration difficult and leading to extensive cross checking and difficulty in interpreting trends. One graph can require the use of complicated queries and formulas.

### **FAMIS Reliability, Accuracy and Timeliness**

Reliability, accuracy, and timeliness of data largely depend upon the users who enter data in the system and the business processes and procedures that establish how those users do their work. To that end, TRecs offers comprehensive training programs for FAMIS. FAMIS users are not allowed to access the system until their training is complete. On the TRecs IM web site, a host of support tools are made available to FAMIS users: standard operating procedures, configuration tables, additional resource links, frequently asked questions, and a support request form for requests not addressed in those resources.

TRecs runs scheduled exception reports to identify problems in the FAMIS databases. These include process related issues such as canceled work orders with billable charges; data integrity issues such as part numbers with incorrect accounts; and general billing issues such as project accounts with insufficient funds. In addition to determining corrective actions on the data, these reports provide an opportunity to identify users who may require further training as well as processes that may require modification.

Some users have noted that reliability and accuracy of FAMIS data is difficult to validate because business rules and functional processes are undefined or unknown by the end users. Data interpretation is also difficult and requires some sophistication. Identifying areas of unreliability and finding the areas requiring higher sophistication will require extensive research with the users.

## **FAMIS Security and Confidentiality**

TRecs Security & Compliance team is charged with minimizing security risks to CPFM databases, applications, and hardware. This team works closely with the university Information Security Office to ensure security requirements are satisfied. Category I data such as social security numbers are not stored in FAMIS tables, so there are no confidentiality concerns.

See the Communication and Accessibility section above for information on role-based security for the FAMIS application.

## **WORQS (Work Order Request & Query System)**

This web-based application is the self-service companion to FAMIS, used by CPFM customers to submit various types of service requests and to view and track progress of work orders and projects. WORQS also serves as the CPFM billing system where customers can view detailed cost statements and billing histories. Integration with mainframe systems allows for departmental approval of customer funded requests. This application includes basic reporting capabilities.

Highlights of WORQS usage include these:

- 6000 default users,
- 600 power users, and
- 8500 on-line requests.

See webWORQS for additional information, documentation, and related resources.

## **WORQS Communication and Accessibility**

In WORQS, queries can be generated on a multitude of fields including project details (status, description, budget, funding, and notes); financial information (budgeted, billed, and balance); schedule information (planned and actual completion dates); work orders (status, descriptions, and costs). Users have requested expanded Excel options, as the available Excel reports are limited.

## **WORQS Reliability, Accuracy and Timeliness**

All information presented in WORQS is based on FAMIS data. Refer to the FAMIS Reliability, Accuracy, and Timeliness section above for details.

## **WORQS Security and Confidentiality**

Like FAMIS, WORQS relies on role-based security. All active university employees are granted the lowest level of access in WORQS that allows for submitting trouble requests and tracking information about requests submitted by the user. Higher levels of access permit visibility into information such as requests made by others, cost statements, billing history, and project information. Higher levels of access also allow users to submit event and project requests. See the FAMIS Security and Confidentiality section above for additional information.

## **WORQSpace**

Room records are created in the FAMIS database through data exports from the university's record drawings (CAD floor plans). Each university department's space coordinator is responsible for verifying space-related attributes such as room type, functional use, and such, as well as maintaining that data in FAMIS via WORQSpace. In this way FAMIS serves as the repository for the "single version of the truth" for space data used in applications throughout CPFM and the university. This application includes basic reporting capabilities. An online drawing repository is maintained for university employees.

WORQSpace records reflect the following statistics. The university has:

- 300 space coordinators,
- 640 buildings,
- 1,200 floors, and
- 46,000 rooms.

See spaceWORQS for additional information, documentation, and related resources.

### **WORQSpace Communication and Accessibility**

The university provost's space information system is refreshed nightly with CPFM space data. In turn, the Provost's Office uses this data for compliance reporting to the Texas Higher Education Coordinating Board (THECB). Additionally, periodic data sets are provided to the university Office of Accounting, where the information is used for indirect cost analysis. CPFM's highly defensible space data was a significant success factor in recent Facilities and Administration (F&A) Rate negotiations: the university's rate increased by 2 points in 2008 and another 2.5 points in 2010. The F&A Rate is used to recover indirect costs associated with federally sponsored research and programs.

### **WORQSpace Reliability, Accuracy and Timeliness**

Accuracy of space data is critical for complying with government and sponsoring agencies and maximizing use of university facilities. Departmental space coordinators are charged with maintaining space data in WORQSpace, and departmental heads are required to certify their space inventory annually. In addition, the Office of Accounting conducts ongoing space audits to ensure the data are accurate and defensible.

Square footage and room numbers are added, updated and deleted in FAMIS by linking to the CAD floor plans; accurate floor plans ensure accurate square footage and room numbers. All campus employees have access to the record drawing repository and are encouraged to provide feedback so that floor plans and room data are continuously reviewed and corrected. Custodial staff is an especially valuable source of information. Similar field verification and feedback loops are established for campus maps.

Concerns voiced about WORQSpace data/information include these:

- Room data do not reflect previously established percentages for maintenance, utilities, and other facilities-related billings within mixed-use buildings—a source of frustration for customers who would like to see a direct correlation between a room's educational and general predominant use and how it is funded.

- Better integration between information systems would provide ease of use. But integration of databases is costly and the need for maintenance is high. There is an ongoing need to systematically visualize and analyze organizational data in an integrated way (for example, integrating facilities physical condition with programmatic requirements and space occupancy). Barriers to a systematic and integrated analysis include lack of physical condition data disaggregated by room condition, which would allow integration with occupancy data, and lack of occupancy data at the room level.

### **WORQSpace Security and Confidentiality**

The departments managing space administer role-based security for the WORQSpace application. Anyone granted access to WORQSpace can see space data for all departments, but users with edit-privileges are restricted to updating their department's data. Information about security-sensitive spaces (for example, tunnels, animal research) is not available through WORQSpace.

### **Cognos Reports**

The university's Information Quest data warehouse hosts approximately 100 Cognos business analysis reports based on FAMIS data. Report output is available in HTML, PDF, or Excel format. Users can schedule reports for auto-updating and e-mail delivery. The majority of these reports are operational in nature; however, a significant number provide metric or aggregated data.

The reportWORQS section of the IM web site is under development and will provide documentation and support resources for Cognos and other reporting tools.

### **Cognos Communication and Accessibility**

Cognos is a primary reporting tool for MMRs, QRAs, project review sessions, and other recurring progress meetings. It is accessible to authorized users.

### **Cognos Reliability, Accuracy and Timeliness**

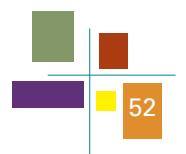
CPFM relies on FAMIS as the primary data source for Cognos reports. Refer to the preceding FAMIS Reliability, Accuracy and Timeliness section for relevant information.

### **Cognos Security and Confidentiality**

The central data warehousing group, Information Quest (IQ), administers Cognos role-based security. IQ grants access to FAMIS reports at the request of TRecs. In addition to FAMIS-based reports, authorized users can access reports and multi-dimensional cubes based on data extracted from \*DEFINE and other mainframe data sources.

### **Meridian (DMS-Document Management System)**

DMS implementation is currently underway for construction, project, and maintenance-related documents from a newly-commissioned laboratory science building. Over the next year, this DMS will be expanded to include all CPFM documents. Metadata in the Meridian DMS is synchronized with FAMIS data.



The documentWORQS section of the Information Management web site is under development, and will provide support resources for the Meridian DMS.

### **Meridian Communication and Accessibility**

Role based security will be employed for Meridian. View-only users will neither contribute nor edit documents. Instead, these users will access the documents via a web customer. Contributors and editors will use a desktop customer to access the system.

### **Meridian Reliability, Accuracy and Timeliness**

TRecs will employ the model established for FAMIS reliability, accuracy and timeliness.

### **Meridian Security and Confidentiality**

Meridian access will be role-based as noted in Communication and Accessibility, above. Documents related to security sensitive facilities and infrastructure, such as tunnels and the Nuclear Engineering Teaching Lab, will be tagged as high security and placed in a restricted area.

### **Mapping and Geographic Information Systems (GIS)**

Source maps for Main Campus and J. J. Pickle Research Campus (PRC) are updated continuously, with real-time feeds to Web Central and other campus consumers. Large format campus maps are updated, printed, and distributed across campus quarterly.

Additionally several campus data layers are maintained for use with the ArcGIS 10 viewer. Many of these link to FAMIS tables, VFA data, or UEM data sources. A related but less widely used tool is the campus 3D model created by Pictometry International.

Confidential information is not included in maps. Mapping data related to sensitive areas such as utilities is restricted to UEM Drafting staff.

See map WORQS for additional information, documentation, and related resources.

### **Utilities and Sustainability Data**

Utility efficiency accomplishments, awards, and performance information is available through the UEM web site, as well as associated LEED submittal data. Additionally, utility data is available through the Campus Energy Dashboard and C-Sense, while billing and energy consumption data can be accessed through ENURGY. (See Section 4.6.)

The Elevator Section has a statutory requirement to make available the annual inspection certificates for each unit. These certificates confirm that the elevator has been inspected within the last year for safety and code compliance. TDLR also has a record of these inspections on-line.

### **VFA**

VFA data and information are communicated and accessible to all users; currently, there are no restrictions. University training sessions on VFA navigation and reporting have been implemented for the use of data. Refer to Section 4.4, below, for more information.

#### ***4.4 An effective facilities inspection or audit program is in place that provides a regular appraisal of facilities conditions, identifies maintenance and repair needs, and quantifies facilities maintenance resource requirements.***

In 2001, the Renovation and Renewal Program (R&R), managed by Facilities Services in the Facilities Maintenance department for all of CPFM, and the ongoing Facility Condition Assessment, FCA, were implemented to identify and qualify requirements in buildings greater than 20,000 gross square feet at the Main Campus, PRC, McDonald Observatory, and Marine Science Institute, as well as the site utility tunnels and site hardscapes. Approximately 14 million gross square feet of Education and General (E&G) space has been assessed. The assessment process evaluates the condition of primary building systems or System Condition Index (SCI). This data is compiled to produce building level information which includes the Current Replacement Value (CRV) and Building Condition Index (BCI) in a web based application called VFA. VFA aggregates building level data to create a variety of information including a campus-wide profile or Facility Condition Index (FCI).

The assessment data allow informational and data intensive analysis. Historical assessment information is also captured through the process, and a clear analysis of the deterioration rate of the systems is possible. The assessments also provide an opportunity to incorporate benchmarking results against peers of similar size and composition

#### **Facilities Services and PMCS**

The R&R Project Prioritization and Selection Focus Group was formed in 2009, and charged with finding the most effective and efficient project prioritization and selection program that relies on the combination of statistical and observed (internal and external) data. The goal was to maximize effectiveness of capital investments by extending the useful life of all buildings; preventing premature replacement; and promoting orderly, planned capital projects to address facility renovation and renewal needs. The outcome of this collaboration is a deliberate approach that adds transparency and quantifiable metrics to the allocation of R&R funds. The group uses the AHP (Analytical Hierarchy Process) to set priorities.

As projects are identified throughout the year by project managers, shop employees, zone maintenance and customers, these projects are submitted to the Prioritization and Selection Focus Group for prioritizing. These identified projects are combined with the deficiencies found in the facility condition assessment and prioritized to produce a Five Year Plan for the R&R program. Additionally, a schedule for eliminating deficiencies relating to current standards by system and by building has been developed and implemented. A top ten list of critical buildings has also been developed to include all aspects: energy consumption, renovation, maintenance, space use, and more.

Based on information from the previous assessment cycles, CPFM has recently been approved to move to a five-year assessment cycle supplemented by a zone audit and project close-out process. This will decrease the assessment square footage each year from one-third to one-fifth. However, CPFM will gain more accurate, up-to-date, and in-depth information from the annual zone audit and project updates. Approximately 500,000 square feet will be assessed through a "green" or sustainability assessment that provides an alternate option to resolve deficiencies through sustainability measures. Additionally, gathering programmatic and space functionality needs is on the horizon.

Zone maintenance has expressed interest in using the assessments. With the use of the zone audit, data will likely be more useable by the zones. An area of concern is that manual

integration is required among the space data, utility information and energy usage, and the FAMIS project and work order management system.

## **UEM**

Through continuous monitoring of performance (see Section 4.2), auditing of equipment is ongoing and any drifts in performance can be quickly addressed. This is part of a larger Proactive Preventive Maintenance (PPM) approach that includes walk-throughs of identified areas by operators, vibrations monitoring by maintenance engineers, detailed write-ups and reports of all current and completed maintenance performed, and failure analysis of malfunctioning equipment.

UEM develops schedules for planned maintenance and outages years in advance to ensure available resources, encompassing available man-hours and availability of backup equipment, and minimizing impact to the delivery of utilities to campus.

Each elevator and escalator must comply with the state mandated annual and 5 year tests. A certificate from TDLR is issued and indicates that the elevator/escalator has complied with all safety and code requirements.

One area for improvement is that PPM extends only to the building ties. Pumps and equipment owned by UEM but within the buildings is not yet subject to a comprehensive management program.

## **Campus Planning**

Campus Planning does not participate in the facility condition inspection audit program. As noted in 4.3, use of facilities condition data to inform preliminary capital project planning development about the condition of spaces within campus buildings would be leveraged if the condition inspection audit allowed assessment of physical condition by rooms. Such assessment could subsequently be integrated with functional and programmatic requirements by room, possibly outside the condition inspection audit.

## **Office of Sustainability**

The Office of Sustainability has begun using STARS, created by the Association for the Advancement of Sustainability in Higher Education (AASHE), which provides a means to develop sustainability goals and establishes a framework for gauging progress towards those goals.

### ***4.5 An expenditure report is available to managers on a regular basis and is used to effectively evaluate and control expenditures in assigned sub-units.***

CPFM expenditures reports are available to managers and are effectively used on a regular basis to evaluate and control expenditures in assigned divisions. CPFM uses several data sources to generate timely, relevant, and useful financial information for management and employees. Monthly income and expenditure reports are generated and presented to the vice president for University Operations for the three largest departments within CPFM: Facilities Services, PMCS, and UEM. Evaluating results at the highest management level ensures that core services are being provided adequately and established goals are being met.

## **Facilities Services and PMCS**

Monthly expenditure reports are sent to the associate and assistant directors (ADs) within Facilities Services and PMCS. Evaluating results at the sub-unit level allows management to

adjust service levels as needed to remain within the targeted budget amount and to provide the greatest level of service possible. Meeting with the ADs provides further insight to current spending trends.

## **UEM**

UEM uses trending software such C-Sense which allows rapid analysis at the operator level, while engineers can perform more detailed investigation through immediate and constant access to the GE iHistorian trending database, containing high resolution historical data from the thousands of measured digital points and controls within UEM. Monthly budgetary status reports that compare straight line budgets against actual to date expenses are provided by the Financial Services Section for each subsection down to the manager level and to project managers so that there is good accountability and control of expenditures.

## **TRecs**

TRecs Administrative Office prepares a yearly expense report from the \*DEFINE accounting system, IQ, and web-based budget system and shares this with the director and ADs to evaluate performance and drive future improvements. TRecs plans to compile regular expense reports and review them with the management team.

Several departments have reported problems with obtaining accurate reporting, or noted that information obtained is cumbersome and requires a great deal of manipulation to get usable information. Various user screens provide conflicting cost summary and detail information. Meetings have been held with a FAMIS consultant to identify and address improvement needs.

### ***4.6 An effective system of measuring and recording utility data is in place and is used to establish trends, minimize costs, promote energy conservation and encourage environmental preservation.***

UEM is responsible for measuring and recording utility data to establish trends, minimize costs, promote energy conservation and encourage environmental preservation. TRecs prepares certain reports.

## **Facilities Services**

Facilities Services employs a demand-side Energy Management and Conservation (DSEMC) Manager charged with identifying and addressing high consumption energy users on campus. Utility data is used to target high consuming buildings. This is a new area that Facilities Services is just beginning to build; further work and closer collaboration with UEM is needed to assure decisions are made that benefit the entire campus.

## **UEM**

Utility data exists on two levels: supply-side generation data and demand-side consumption data. Data in both areas are recorded using digital meters and stored within a respective GE iHistorian database, which can be accessed through a variety of resources.

UEM engineers use supply-side generation data to monitor operations, plan efficiency upgrades, operate real-time and predictive models, and report on fuel use and costs. Both real-time and historical data are immediately available to operators, engineers, and management through control room interfaces and the GE iHistorian.

Demand-side energy consumption measures the real-time and totaled consumption of different energy streams at each building. Meter installation is ongoing and being rolled-out as part of the Building Utility Metering Project (BUMP), which also includes development of user interfaces. Currently, BUMP data is accessible only to CPFM employees through the iHistorian interface. Employees use the data to trend consumption and develop load profiles. A planned web interface called the Campus Energy Dashboard is nearing completion for use by building managers and operators. As a greater number of buildings become fully metered and historical data exists, energy consumption data will become available to all members of campus to promote energy conservation, and carbon emissions will be built in to encourage awareness of sustainability.

ENURGY, billing software, allows customers to receive their utility billing online as well as access a building's historical billed energy usage, both in terms of actual consumption and billed cost. Additionally, billing data is available through a wide variety of report and trending options.

UEM systems are hosted on a private network, isolated from the public network and the internet. Specific projects such as BUMP and ENURGY gain access to the campus network through a single firewall overseen and operated by Industrial Defender. This security software is specifically designed to assure the constant and reliable availability of generated utilities.

The elevators and escalators have their own monitoring system and pertinent data is compiled in a database.

### **TRecs**

TRecs prepares desktop computer power usage reports on demand. The reports can be produced at any time and customized according to the desired information. The reports are used for reporting on energy conservation.

#### ***4.7 The organization has a process to ensure that hardware and software systems are user-friendly, reliable, up-to-date, and meet the needs of all users.***

TRecs is responsible for maintaining and replacing CPFM hardware, managing most software licensing and deployments, providing desktop support, and ensuring security requirements are satisfied.

TRecs checks periodically for hardware assets that are nearing end of support. This is an undocumented process, but the TRecs inventory process has been described by a criteria team. The example provided by the team is specifically for desktop and laptop machines, but is essentially the same for servers. There is a need for a documented standard operating procedure for hardware inventory. The TRecs Administration Office sends an annual e-mail to departments outlining yearly software renewals. Again, a similar approach is taken with upgrades to servers.

Procedures ensure that desktop computers are checked for virus infection and remediated and that desktop computers are checked for the latest security patching and remediated.

In regard to software, TRecs carefully evaluates upgrades to enterprise software such as OS and MS Office for usability, sustainability, maintainability, compatibility, and stability before deciding to deploy. As an example, TRecs opted against a Windows Vista deployment and is transitioning from Windows XP by phasing in Windows 7 on new systems.

TRECS manages licenses for business applications such as Acrobat Pro that are installed on an as-requested basis. These applications are not automatically upgraded upon new release; however, users can request and pay for upgrades as desired. A notable exception is AutoCAD, for which the

university maintains a site license. This application is upgraded to the current version fairly often, approximately once a year.

For business-specific applications (for example, FAMIS and WORQS) TRecs relies on feedback from users and direction from management on how to refine, enhance, and improve these systems. As an example, in December 2010, CPFM migrated from FAMIS 8iR1 to 8iR2. Major upgrades such as this occur about every four years.

Concerns expressed regarding software and hardware maintenance include these:

Replacement cycle-time does not replace computers often enough. An option would be to upgrade computers more often instead of replacing them.

Shop staff members often do not have access to adequate computers. Many shop staff members must share computers that are many years old and require a great deal of patience to use.

In some cases, the decision is made to purchase special software licenses, but future upgrades are not purchased (for example, Refrigerant Compliance Software). This practice limits functionality and forces staff to use outdated software.

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**DEVELOPMENT AND MANAGEMENT  
OF HUMAN RESOURCES**

## 5.0 Development and Management of Human Resources

An organization's success depends increasingly on the knowledge, skills, innovative creativity, and motivation of its employees and partners. This criterion addresses the ways in which the facilities organization ensures an environment of continued learning through communication, policies, recognition, training, professional development opportunities, and other methods.

### ***5.1 Staff positions are properly classified and allocated in adequate numbers to meet the standards for the targeted level of service.***

In Campus Planning and Facilities Management (CPFM), staff positions are properly classified. Over the past three years, job studies, compensation studies, and assessments have been completed, resulting in realignment or reclassification of position job titles and pay where needed. Periodically, CPFM reviews and updates position descriptions as needed, and an organizational review was recently completed.

#### **Facilities Services, Project Management & Construction Services (PMCS), and Office of Campus Planning (Campus Planning)**

These departments conducted a job study in FY 2007-08 to review position titles, position descriptions, and pay. Facilities Services is currently undergoing an organizational review to assess span of control and ensure that appropriate job titles are being used. The departments also periodically review and update position descriptions. Adjustments to the organizational structure and position descriptions are done as required by changing business needs. A review was done in FY 2009-10, and there are plans to make this an ongoing process.

#### **Utilities and Energy Management (UEM)**

Positions are properly classified and aligned accordingly to accomplish the tasks for the department. In 2000, a market-based assessment was done, resulting in a new salary structure and realignment of job descriptions. In 2007, UEM participated in the CPFM compensation study, which validated UEM employees were properly paid compared to the market. Additionally, job descriptions and classifications specific to the utilities operation are used within the organization in many instances.

#### **Technology Resources (TRecs)**

TRecs participated in the 2007 CPFM Salary Survey and was also a part of the campus wide IT Job Title Study in 2007, which reviewed and updated all the Information Technology positions at the university. The result of this study was a reclassification of all of TRecs current IT titles.

### ***5.2 Training programs provide for new employee orientation and technical skills enhancement for all staff.***

CPFM encourages training and provides opportunities for staff development through a broad range of external and internal programs such as computer training and technical training in support of trades in different shops. Development programs and educational benefit programs offer employees on-the-job training that may lead to advancement. Professional employees are able to pursue professional development opportunities, but participation is limited due to budgetary restrictions.

## **Facilities Services and PMCS**

Facilities Services and PMCS conduct new employee orientation for all incoming employees in addition to the new employee orientation offered by the university. The training covers a variety of topics including review of the departments' core values, mission, vision, and organizational structure. The training also provides information about human resources, employee recognition programs, training and professional development, and educational benefits.

Facilities Services and PMCS have an annual training budget of \$250,000, which allows a combination of internal and external training opportunities for staff. Courses address basic and advanced computer training as well as specialized technical training in support of trades. The departments also provide monthly required shop safety or trade specific training for all the trade shops.

Both Facilities Services and PMCS have goals within their strategic plan regarding the amount of training to be provided to staff. Facilities Services strives to provide one meaningful developmental training event for every employee annually in addition to all of the required university, department, state, and federal training. PMCS has a goal of providing 10 hours of training annually for shop personnel, and remaining staff have a goal of 20 hours per year in addition to all of the required department, state, and federal training. In addition, Facilities Services and PMCS staff members in management roles are encouraged to receive training through APPA's Institute for Facilities Management.

Training goals are monitored regularly in quarterly Facilities Services Management Metric Reviews (MMRs) and PMCS Quarterly Review and Analysis (QRA) presentations to evaluate the meeting of those goals, which include number of employees who have attended training beyond required training, and the number of training hours employees have attended.

## **UEM**

In addition to the general orientation new university employees receive, UEM provides its new workers with a new employee packet and an electronic version of the UEM Employee Policy Manual. UEM supports employee training for soft and technical skills and encourages all employees to attend training.

UEM also has a mandatory test-based safety and site specific training for employees which was a result of a job skills-based training program developed by a professional training company. The program consists of three major components. The first component is safety, which focuses on general safety standards and specific site hazards. The second focuses on relevant industry curricula that are developed for technical trade positions and uses an interactive video-based program. The third component is a site-specific and tool-specific program in which the employee must physically demonstrate competency to the supervisor prior to sign off. For more information please refer to this web site.

In addition to the technical trades job skills-based training program, UEM also developed the Manager and Supervisor Training Program. This program has two major components, the first of which uses the video modules developed for the trades positions for safety and relevant industry maintenance and operations curricula. These are selected based on the specific responsibilities of each manager and supervisor position. The second component of the management training consists of training for job duties that will develop management skills as they relate to UEM.

The four management components focus on:

- Management Skills-Designed to train those in supervisory positions in areas of management.
- Problem Solving-Designed to help supervisors deal with difficult situations in the workplace.
- Elective Curriculum-Two electives must be selected per year, one by the employee, one by the supervisor.
- Yearly Training Requirement- 24 hours of training per year from a preset list.

Employees must complete specific training for the current job they hold within 18 months of assuming a position and are often asked to take additional training due to updated material. Safety training and site specific training modules for the current position are part of the employee's evaluation criteria, and the employee is encouraged to continue taking training courses for other positions once the modules are completed.

As an incentive to the technical trades employees to complete the curriculum, UEM pays up to six hours of overtime for an employee to complete the program on a weekly basis. Once certified for the current position the employee can pre-certify for any other position but without compensation. This benefits the employee who has completed the next level of training when applying for a higher position.

### **TRecs**

TRecs has a training budget to provide opportunities to its employees to attend job-related training throughout the year. Employees find training and submit the request to attend to their supervisor. TRecs also requires its Support Services employees to complete position-specific certification within the first year of employment as part of their hire agreement. TRecs pays for the exam preparation classes and for the first attempt at passing the certification. If an employee does not pass the first attempt, the employee must cover the cost of any future attempts.

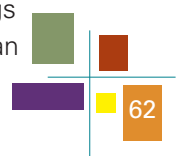
### ***5.3 An effective communication system exists within the department to ensure that each employee knows his or her role in the department, the role of related areas, and the overall role of the department.***

Organizational information is available throughout CPFM through the various departmental web sites within the portfolio. Staff members are able to view organizational charts during new employee orientation sessions and review position descriptions with their supervisors upon hire. During all-hands meetings that occur semi-annually or through weekly, monthly or quarterly meetings, employees gain awareness of their role and the role of their department within the overall organization.

### **Facilities Services, PMCS and Campus Planning**

New Facilities Services and PMCS employees receive an organizational overview during new employee orientation. During this time, the vision and mission statements and core values for both organizations are reviewed. Organization charts, strategic plans including the vision, mission, and core values for both departments are posted on the departments' web sites.

Directors, ADs, managers, and supervisors in all three departments hold meetings with staff on a regular basis (weekly, bi-weekly, or quarterly) in group settings and in one-on-one meetings with direct reports. PMCS holds a Communication Forum twice a year to give employees an



update on strategic initiatives, employee and customer survey results, samples of project work done by staff members, and other current topics of interest.

Employees of the three departments are also given a copy of their position description upon hire. The departments update position descriptions periodically to ensure employees are appropriately classified.

Facilities Services and PMCS share a communications coordinator who assists both organizations in drafting communications to distribute pertinent information to all staff. In addition to its web site, Facilities Services has an e-mail newsletter for employees and a Facebook page visited primarily by staff.

### **UEM**

UEM has a defined structure whereby each employee knows his or her roles and the role of the sections within the department and the department as a whole. UEM publishes a biannual newsletter that communicates the events and progress of the department, any accomplishments, current projects, and any new employees that have joined the UEM team. Additionally, UEM conducts a Progress Update Meeting where employees are updated on the overall state of the department, strategic goals, and accomplishments. UEM makes organizational charts available to its employees.

### **TRecs**

TRecs conducts a biannual meeting in which information and updates to the department are communicated to all staff. An organizational chart on the TRecs web site is updated each time changes are made. During new employee orientation within the department, new employees receive a copy of the department's organizational chart. Employees also meet with their immediate supervisor, who informs them of their role in the department and how it fits into the department as a whole.

## ***5.4 Safety policies and procedures have been established, written, and communicated to all staff.***

Safety programs exist in CPFM departments. Policies and procedures are documented and communicated to employees in several different ways: in writing, outlined in training sessions, posted on the web, and displayed on safety posters in work areas.

### **Facilities Services**

Facilities Services and PMCS safety policies and procedures have been developed and posted on the Facilities Services web site. Facilities Services and PMCS have a safety coordinator/safety specialist who oversees the departments' safety programs.

### **PMCS**

PMCS' safety specialist oversees construction projects. The specialist is responsible for performing safety observations of all capital improvement projects as well as shop projects constructed on campus. The specialist maintains observations in each electronic project folder and distributes copies each week to the contractor, the design firm, the PMCS project manager, and the PMCS project coordinator. Safety trends are reported to mid-managers each month with discussion of specific areas that require improvement. Each quarter, the safety reports are consolidated and presented in a QRA.

Contractor safety reports are made available to PMCS project selection teams for review as part of their selection evaluation. Contractors submit both project incident reports and job hazard analysis to the safety specialist for review and acceptance as part of each project. Reports can be sorted by building, contractor or team members for trend monitoring. In addition, the safety specialist provides specific technical training in OSHA requirements. The PMCS web page includes safety information for contractors, and PMCS developed a small handbook that is provided to all contractors and subcontractors by the safety specialist at most pre-construction conferences entitled *The Contractor's Guide to Working Successfully at The University of Texas at Austin*.

## **UEM**

UEM created a safety/training coordinator position to focus on developing a formal occupational safety protection program. The program includes specific training for heat stress, material handling, respiratory protection, and walking and working surfaces. The core of the program is "Safety Rules," "Safety Culture," and "Safety Mentality," which have been conveyed to employees verbally and posted on the departmental web site. Additionally, posters of these three safety policies and procedures are posted throughout the department as visual reminders.

Safety policies and procedures as they relate to specific safety programs are in writing and complement the training certification program described earlier. These policies have been conveyed in formal group training. Any employee can request policy clarification from the UEM Safety Office or refer to safety policies on the departmental web site.

### ***5.5 Accident records are maintained and used to reduce accidents and identify needs for special attention.***

In CPFM, accident records are maintained and analyzed to ensure the root cause of each accident is determined and steps are taken to reduce the possibility of a recurrence. Steps are also taken to track trends to plan better for purchase of equipment or personal protective equipment to help keep staff safe.

## **Facilities Services, PMCS, and Campus Planning**

When an accident or incident occurs at Facilities Services, PMCS or Campus Planning, supervisors are required to report it using the Notice of On-The-Job Incident, Injury or Illness (Injury Questionnaire) form, which is used to create the official First Report of Injury, a requirement of the Texas Department of Insurance (TWCC-1).

The department's safety coordinator/specialist receives notification of all reported incidents. For minor incidents, the safety coordinator/specialist may follow up with the supervisor or manager by e-mail to ask questions about the incident or make suggestions for corrective action. For serious incidents and near misses, the coordinator/specialist conducts a formal investigation and submits a report using a standardized Incident Investigation Report template. The results of the formal investigation are reviewed with the appropriate departmental personnel during a "lessons learned" meeting.

The safety coordinator/specialist sends a quarterly report to all ADs listing reported incidents in their area. Also, he or she prepares a departmental quarterly report on reported workplace injuries. At the end of the fiscal year, the safety coordinator/specialist analyzes the incident data for the current fiscal year, compares the data to the previous year's incident data, looks for trends, and presents a departmental annual report. Accidents and the resulting

injuries in Facilities Services and PMCS are reviewed in the Facilities Services Administrative and Personnel Services quarterly MMR.

The Facilities Services safety coordinator is working on a project called wciTracking to streamline injury data analysis and provide information to the appropriate ADs on a monthly basis. The wciTracking project will allow the department to analyze injury data on a more frequent basis and address safety problems faster to reduce the likelihood of future workplace accidents.

## **UEM**

UEM maintains accident records within the department, and an OSHA 300 log also is maintained for accidents within UEM.

To identify opportunities to prevent a recurrence of accidents and to see if a pattern is developing; all accidents within UEM are reviewed and signed off on by the supervisor, manager, safety coordinator and executive director. UEM conducts focused investigations as needed to determine a root cause of the accident and uses accidents as a means to determine whether additional safety precautions or trainings should be conducted or if a new safety program should be developed.

### ***5.6 The organization promotes employee development and professional development through formal education, training, and on-the-job training such as rotational assignments, internships or job exchange programs.***

In CPFM, professional development is offered across the organization to better equip employees to do their job or prepare them for future positions. Staff members are encouraged to take college-level courses or other training, and CPFM partially funds courses, books, and certifications to assist employees in this effort. Managers, assistant/assistant directors, and directors attend APPA Institute.

Since 2008, CPFM has an Executive Leadership Program that helps prepare future leaders of our department to become managers, assistant/associate directors or directors. The eight-month program is designed to explore leadership principles in many formats. Participants in this program can develop their personal skills to achieve professional goals.

## **Facilities Services and PMCS**

Employees who attend in-house professional development sessions have an opportunity to earn continuing education credit and professional development hours to meet requirements for their licenses. Training is provided for employees who hold licenses and certifications to help them receive the continuing education units needed for licenses and certifications. A mentoring program trains volunteers to serve as mentors for other Facilities Services or PMCS employees. Project managers, supervisors, managers, assistant/associate directors, and directors attend the APPA Institute. To date, 24 participants have graduated from the Institute.

Facilities Services and PMCS also have a Leader Development Program for employees who are interested in training for a leadership role within the organization. The program began in 2003, and is now in its eighth year, with 204 graduates who are still employees with the department. The Leader Development Program is a full-year program with classes and discussions that inform participants about the supervisory role.

In addition to the university educational benefit for employees, Facilities Services and PMCS have an educational benefit policy. Facilities Services and PMCS will pay for one class per semester

and required books for the class, not to exceed \$500 per semester for employees to attend a college, trade school, or professional development course that is related to current position or associated with trades/positions within Facilities Services and PMCS. This also applies to training courses leading to a certification (such as NICET) or a license (such as electrician) related to the employees' current division.

## **UEM**

UEM encourages training through formal education or professional development. Regular training is a requirement for all managers through the Management training program, which is available to all other employees upon request.

## **TRecs**

TRecs encourages employees to improve their education and professional development by allowing them to take work time to attend training opportunities. TRecs also provides on-site training opportunities such as the recent Python training sessions held in September and October 2010.

### ***5.7 Career development is supported through involvement in job-related and professional organizations, and opportunities to advance within the department.***

CPFM encourages employees to participate in professional organizations and to take part in internal programs that develop leadership skills. These programs assist in succession planning for the organization.

## **Facilities Services, PMCS, and Campus Planning**

Facilities Services, PMCS, and Campus Planning support employee participation in professional organizations such as APPA, CAPP, and TAPP. The departments send a contingency of various levels of employees to these professional conferences annually. In addition, they host conferences. For example, the departments hosted the TAPP conference in 2008, and Facilities Services recently hosted the Professional Grounds Maintenance Society (PGMS) conference.

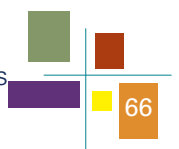
Facilities Services and PMCS also offer internal promotional opportunities for employees. As described earlier, the Leader Development Program and Executive Leadership Program offer employees an opportunity to receive training to prepare them for future roles in leadership, which also helps with succession planning.

## **UEM**

The department encourages all employees to become involved in job-related and professional organizations. Many employees are members of the International District Energy Association, APPA, CAPP, and TAPP. They also participate in Big 10 and Friends, and they are encouraged to attend various job-specific training.

### ***5.8 Work performance and attendance tracking measures are in place, are understood by staff members, and are used by supervisors to assess performance.***

In CPFM, employee performance is evaluated at least annually in most areas, and employees are eligible for merit pay based on their evaluation overall score, if budget allows. Supervisors



meet with employees to discuss the performance of the employee at this time, and these results are retained in the employee's file. Additionally, all departments track attendance through the time-keeping system provided by university. Employees are required to track and report their time on the electronic timesheets, which must be approved by their immediate supervisor.

CPFM also evaluates probationary employees (classified employees during their first 180 days of employment) three times during their probation – 45 days, 90 days and 135 days.

### **Facilities Services, PMCS, and Campus Planning**

The departments follow an employee performance evaluation schedule. Classified employees receive an annual performance evaluation and a semi-annual evaluation halfway through the evaluation cycle. Once the supervisor completes the evaluation, the supervisor meets with the employee one-on-one to review the evaluation and discuss any need to improve, as well as positive performance and areas of excellence. The essential functions for each employee are listed on the performance evaluation form, paralleling space to document the employee's performance of that essential function. The form also provides an area for an overall summary of the employee's performance. An evaluation score is entered for each essential function on the annual evaluation. An overall performance evaluation score is calculated by averaging the individual scores for all essential functions. Merit pay for employees is based on the employee performance evaluation score. This process is introduced and explained to employees in new employee orientation.

In Facilities Services, the Custodial Services division has a system in place to notify custodial employees who are close to exhausting their leave balances. Administrative and Personnel Services reports quarterly in their MMR the number of employees who are on leave without pay so that management can review and pursue necessary action if the leave without pay is unapproved.

### **UEM**

The University of Texas Handbook of Operating Procedures contains specific guidelines on attendance. UEM follows those guidelines. Additionally, upon hire the employee is given a CD that contains the UEM Employee Policy Manual, which describes time and attendance requirements specific to the UEM department. Work performance is also reviewed for each employee at least once a year through an evaluation process whereby the employee's primary responsibilities are listed and evaluated.

### **TRecs**

TRecs follows the Annual Evaluation procedures as outlined on the university Human Resource Services web site. Employees are evaluated once a year on their primary responsibilities using supervisor and meeting notes taken throughout the year on the employee's performance. Employees also provide a self-evaluation that the supervisor reviews and discusses with them at the evaluation meeting.

## ***5.9 The organization utilizes both formal and informal assessment methods and measures to determine employee well-being, employee satisfaction, and motivation. Assessment findings are linked to performance results to identify priorities for improving the work environment, employee support climate and the supervisors' effectiveness (coaching).***

The CPFM organization primarily uses informal assessment methods to measure employee well-being, satisfaction, and motivation.

## **Facilities Services**

Facilities Services conducted its first Employee Work Environment Survey in October 2010. Employees were surveyed in the areas of communication, training, teamwork, performance management, morale, leadership, diversity, decision-making, and customer service. Management will use the survey results to implement improvements throughout the organization. The results of the survey are shared with employees on the department web site and additional surveys will be conducted annually.

## **PMCS**

PMCS conducts a Survey of Organizational Excellence approximately every two years. The first survey was conducted in November 2006, the second in February 2009, and a third will be conducted in May 2011. These anonymous surveys contain questions within five dimensions of the total work environment: work, accommodations, organization, information, and personal issues. Once the survey results are complete, focus groups are formed from employees across the department and facilitated by an outside party in an effort to validate the data. Follow up from the 2006 survey and focus groups resulted in:

- Increased internal communication and implementation of semi-annual communication forums
- Creation and implementation of a supervisor evaluation program in the form of a Leader Performance Feedback survey
- Communicated information regarding the merit pay system used across the departments of PMCS and Facilities Services.

Information is compiled from each of the survey results and distributed to the PMCS divisions. Management uses the data for improvement within the organization and shares results with all PMCS employees.

## **UEM**

UEM currently has informal methods to assess overall employee satisfaction. In most shops employees are required to attend regular daily/weekly meetings with their supervisors where work and projects are assigned. Employees and supervisors are able to discuss issues related to the work environment. During these meetings supervisors and managers are able to discuss how the employee is doing. In addition, most supervisor and managers meet informally and as needed with employees to discuss any issues employees may have.

Supervisors and managers also meet most mornings to discuss employee and operational issues. This gives an opportunity to discuss general or specific issues. The UEM executive director also visits the different job sites throughout the area to take a general pulse on employee morale and well-being using the idea of managing by walking around. The executive director advocates an open-door policy to allow employees an opportunity to discuss issues they may have.

## **TRecs**

TRecs uses informal assessment methods that include one-on-one meetings with employees and supervisors, one-on-one meetings with employees and the director, and feedback opportunities during the twice yearly meeting of all TRecs employees. These informal assessment methods have been used to improve the work environment and provide coaching to supervisors.

**5.10 Employee recognition programs are in place for individuals and groups (may include community service).**

CPFM has various employee programs used to reward employees for excellence. The university has a campus-wide employee recognition program that recognizes exemplary service annually for employees and supervisors. Employees in the University Operations portfolio are eligible to be nominated for a Service-Leadership-Innovation-Creativity-Excellence (SLICE) award. Employees with two years of service are eligible to be nominated for this award and are selected by a designated panel.

**Facilities Services and PMCS**

As part of the Facilities Services strategic plan, one activity was to “Develop an on-the-spot award program for individual and/or team effort.” As a result, an Employee Recognition Committee was created to develop various employee recognition programs for Facilities Services and PMCS. In 2009, the employee recognition program won the APPA Effective & Innovative Practices award.

The employee recognition program acknowledges employees for exemplary service. The committee created a program called SITES based on the shared core values of Facilities Services and PMCS: Service, Integrity, Teamwork, Excellence and Stewardship. Awards are presented annually and are peer based. The committee is made up of prior recipients and other employees. The first awards were presented in August 2006. In 2010, the employee recognition committee added a SITES team award for the first time. Over 22 nominations were received and the first team award was presented that year.

In 2008, the employee recognition committee added another type of recognition called “On-The-Spot” to acknowledge an employee doing something extraordinary. The “On-The-Spot” award gives supervisors an opportunity to document and reward a good deed with an “On-The-Spot” card.

**UEM**

UEM has an awards program focused on recognizing employees for completing the technical trades and manager/supervisor training curriculum. The executive director presents pins once an employee has completed each of the three components. A brass pin denotes completion of the safety curriculum, a silver pin denotes the industry curriculum, and a gold pin with a framed certificate signed by the executive director and CPFM senior associate vice president denotes final completion and certification. These are presented in the shops in front of peers, after which there is a two way opportunity for employees to interact directly with the executive director on any issue. Employees are also encouraged and recognized for completing a certification for another role or position within the department.

**5.11 Processes are in place to determine the effectiveness of recruitment and retention programs and to identify areas for improvement.**

CPFM regularly tracks the status of vacant positions and turnover rates. Most departments use a centralized method of hiring, recruiting, and terminating employees that allows for review of the impact of hiring an individual and for determining a fair salary as compared to the individual's colleagues.

## **Facilities Services, PMCS, and Campus Planning**

Facilities Services, PMCS, and Campus Planning have a recruitment report that is prepared and forwarded to management. The report contains summary information, as well as detailed information from executive to shop level. Recruitment information such as vacancies, new hires, internal promotions, and types of separations are reported quarterly in the Administrative and Personnel Services MMR. Management uses data from these reports to look at turnover rate and detect any trends that may require management review. The departments also have a centralized process when making salary offers to new hires. The salary being proposed is evaluated in comparison to the salaries of existing staff and their number of years of experience.

Another technique that Facilities Services and PMCS use to identify areas for improvement is the voluntary exit interview performed as an employee separates from the department. When an employee indicates he or she is retiring or separating from the university, the employee is contacted and asked to participate in a voluntary exit interview. An administrative support employee interviews the separating employee using management-approved questions. Exit interview information is sent to the chain of command after the employee has left the department.

## **UEM**

Turnover in UEM has been relatively low, due in part to an organizational and salary structure that has a built in career ladder for employees and helps ensure succession planning. While employees are required to be certified for their jobs they can also attain precertification for other positions which will provide them an edge when applying. The growing trend of retirements is an issue all organizations have to face. UEM is no different, so while the turnover rate has been relatively low this is now becoming more of an issue.

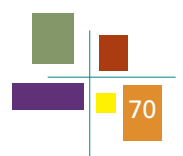
The organizational approach to filling vacancies is to first look within the department. The skills necessary to run the utilities systems are highly technical and specific to the department, so prior departmental experience is critical. The investment made to train existing employees is used to be able to promote from within first. The charge to all hiring supervisors is that the most qualified person must be selected for any vacancy. This approach has been very successful and has built a loyal, highly-trained and skilled employee base that has reduced turnover from 10% to about 4% annually. Most vacancies occur as a result of retirements.

Another UEM program that has been successful is employing trainees from the Austin Community College technical training program as temporary employees with the operations, instrument and control, and electrical sections. Those sections are given an opportunity to identify and subsequently hire future star employees. This program also gives the potential employee an opportunity to see if the job is one that he or she wants to pursue.

UEM has been working with the university Engineering Department for many years to hire interns and to pursue projects led by student engineers that could lead to viable implementation. This has led to hiring two student engineers directly into UEM.

## **TRecs**

TRecs uses an informal process to track vacancies and plan recruitment strategies. When vacancies occur, meetings with the director and hiring supervisor are held to review staffing needs and create a posting to fit those needs. Meetings are also occasionally held to review staffing as a whole, and adjustments are made as needed including hiring, redistributing, or reclassifying employees.



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## **PROCESS MANAGEMENT**

## 6.0 Process Management

Effective process management addresses how the facilities organization manages key product and service design and delivery processes. Process management includes various systems such as work management, performance standards, estimating systems, planning and design of new facilities, and other key processes that affect facilities functions.

### ***6.1 Processes are in place to ensure that departmental facilities and equipment are adequate for the provision of effective and efficient services.***

Departments within Campus Planning and Facilities Management (CPFM) use a combination of campus-wide and CPFM-specific processes to identify departmental facilities and equipment and ensure they are adequate. The University of Texas at Austin central equipment inventory process is managed by the Office of Accounting, with departments managing equipment that does not fall under the standard university inventory policies.

CPFM facilities are maintained using a combination of self-funded requests, preventive maintenance processes, and scheduled Renovation and Renewal (R&R) upgrades. The preventive maintenance and R&R upgrades are scheduled, and the self-funded requests are handled on an as needed or funding available basis. Creating a standard process for all CPFM users to request more efficient use of and re-purposing of space is one area identified for possible process improvement.

#### **Facilities Services and Project Management & Construction Services (PMCS)**

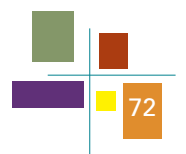
The offices and shops of both departments are primarily housed in a dedicated compound of buildings originally designed and built for the facilities organization in 1986 and referred to as the Facilities Complex. The university campus is divided into four maintenance zones, and the corresponding Zone Maintenance Shops are located in basements or secondary sites around campus. A Central Stores unit in the Facilities Complex houses over \$1 million in inventory used by shops, project managers, and other CPFM staff.

Facilities are generally adequate to meet mission requirements. In 2003, CPFM departments took part in a space study managed by PMCS to address these locations and their adequacy. Numerous upgrades to functional spaces and building infrastructure have been made in an effort to keep up with the changing organization and updated standards, as well as to help ensure employee safety and comfort. Annually, special equipment purchases and vehicle replacement programs for both departments are made through a process managed by the associate director of Support Services in Facilities Services. Computer system upgrades are managed by Technology Resources.

#### **Utilities and Energy Management (UEM)**

The department understands how critical UEM services are to the university community and has a long term financial plan in place to address preventive and corrective maintenance of utility equipment. UEM also receives funding from the R&R process used to repair distribution systems like tunnels, chilled water and steam systems, electrical distribution systems, and other underground utilities. UEM acquires specialty tools or spare parts through the original equipment manufacturer and stores them on site for use when needed. Departmental standards ensure the reliability and efficiency of provided services. (See section 6.6.) Without planning, the long term and short term ability to deliver generated utilities would be seriously affected.

UEM also has computer and vehicle replacement programs in place to provide staff with



appropriate technological resources and reliable fleet services. In collaboration with Technology Resources, UEM reviews computers annually and replaces them in a three-year cycle. Vehicles are in a similar replacement cycle, but are replaced within budget when deemed a safety hazard or when maintenance costs are high.

### **Technology Resources (TRecs)**

The department handles all CPFM hardware and software purchases and maintenance. TRecs keeps and manages standard software, hardware, and warranty information. The newly implemented hardware standards for university staff members were developed by representatives from 14 campus departments including academic, administrative, and research units.

TRecs also coordinates all related network infrastructure upgrades and maintenance with the university Information Technology Services (ITS) department. ITS manages all network and telephony infrastructure for the university. Server technology is handled on an as needed basis.

## ***6.2 An effective work management system is in place to identify, report, correct, and document substandard conditions and maintenance requirements.***

CPFM systematically identifies and addresses substandard facility conditions and executes maintenance actions, renovations, or new facility construction projects. These processes range from addressing relatively simple and easy-to-fix deficiencies to new construction for larger, programmatic needs of the university. Participants in this process include not only CPFM staff, but all university employees and students who see a deficiency or need. These needs are communicated either directly to CPFM through work request processes or the other means available through the university leadership.

A core element of the work management system is the Campus Master Plan, currently being updated, which identifies programmatic university facilities needs. The plan is supported by regular interaction within the university community among CPFM, the university Facilities and Space Committee, the Faculty Building Advisory Council and Facilities Forum luncheons. The vice president for University Operations provides direction and support through regular meetings with CPFM directors and the CPFM senior associate vice president. Although several work management systems exist, the primary work management systems such as Facilities Administration Management Information System (FAMIS) and COGNOS (business intelligence and performance management software) are accessed through the CPFM Information Management web site. A monthly campus walking tour, led by the senior associate vice president for CPFM and attended by all CPFM directors, serves to keep facilities management leaders visibly current on campus needs.

### **Facilities Services**

The FAMIS database is supported by the Work Order Request and Query System (WORQS). WORQS gives campus customers direct access to FAMIS work order and capital project data and allows them to submit work requests. University employees are able to submit trouble work requests through WORQS or by phone to Facilities Services zone shops. At these entry points, facilities work requests are entered into to the FAMIS database, assigned to a work group, given a priority and distributed.

Facilities Services operates a preventive maintenance program which is also managed within FAMIS. Work beyond the capability of Facilities Maintenance Zone shops is analyzed and

distributed to PMCS for handling externally through contract or internally through Construction Services shops. Facilities Services does not utilize the complete functionality of FAMIS and continues to look for ways to do so.

Beyond daily observation and reporting of facilities maintenance needs by anyone on campus, numerous systematic programs are in place to identify and categorize work requirements. Custodial Services operates using the OS1 system. Support Services conducts a Solid Waste Audit. Vanderweil Facilities Advisors (VFA), a facilities asset management and capital planning firm hired by the university, conducts facility condition assessments that provide the status of major systems by building. Annually, the R&R review team looks at current assessments of facility conditions in the VFA data and submissions from across CPFM staff to analyze and set priorities on infrastructure requirements.

## **PMCS**

PMCS addresses project level facilities needs that cannot be handled by the Facilities Maintenance internal workforce. The department maintains regular interaction with customer organizations on campus through a liaison program in which project managers support specific colleges and auxiliary organizations. These discussions often result in the submission of facility project requirements.

PMCS supports Facilities Services with setting priorities for and completing R&R requirements. Project managers program, design, contract, and construct these priority infrastructure projects. The university Office of Fire Prevention Services (FPS) develops requirements and submits projects for support of fire alarm, fire sprinkler and other miscellaneous fire safety projects managed by PMCS.

In addition, university employees with authority to do so can submit work requests to PMCS through WORQS, giving them direct access to FAMIS work order and capital project data.

## **UEM**

The status of UEM systems and equipment is continuously monitored by the department's operators, mechanics, and technicians, who employ sophisticated process automation, instrumentation, and system models, as well as comprehensive observation and data collection rounds. The plant's control systems have alarms that alert operators to abnormal conditions so that they can take prompt corrective actions. UEM instrument technicians monitor the status of various instrument and process automation systems. Computer-based models such as Termis (a chilled water distribution system model) and LightRidge Resources (an energy systems model) use near real-time process data to augment and validate instrumented system variables, detect problems and anomalies, and guide efficient operation.

Maintenance mechanics, operators, and technicians make frequent systematic rounds through the plants to examine directly the status of operating equipment. Any problems detected in process, electrical, or mechanical systems are promptly reported to appropriate maintenance groups. UEM also employs a maintenance coordinator who oversees all of the department equipment. The coordinator ensures proper and timely maintenance inspections of all utilities equipment and establishes a maintenance record for insurance compliance through the FAMIS software application. The Elevator section has developed maintenance requirements by elevator type and these items are listed under the agreement with the service contractor.

## **TRecs**

TRecs uses Jira and Milestones software and SysAid hardware to identify, report, correct and document substandard conditions and maintenance requirements. Computer users may submit service requests from the main TRecs webpage, and they receive e-mail updates on the status of their request.

## **Office of Campus Planning (Campus Planning)**

The office can identify, report, and document any substandard conditions during a departmental strategic master plan and or feasibility study, at which time a department's existing facilities are examined. The Campus Master Plan is the most current list of design guidelines, which include seven major master planning principles to address future growth of the mature campus.

A university level Facilities and Space Council reviews university facility requirements and recommends priorities for accomplishment. The Faculty Building Advisory Committee is charged with reviewing the plans for projects on campus and has approval authority concerning exterior design to ensure long term consistency in architectural standards across the campus. At the department level, a recent departmental master plan has been completed for the Cockrell School of Engineering, and a departmental master planning effort within the McCombs School of Business is in progress.

### ***6.3 Work authorization and scheduling procedures have been established that are consistent with the identified role of each work unit and achieve an equitable distribution of resources.***

CPFM work authorization and scheduling procedures consistently and equitably distribute resources through specialized work units. Additionally, CPFM provides software tools to ensure service and project requests are available to university personnel. WORQS is accessible to all university employees to request maintenance services, event support, and renovation projects. Campus customers can also check billing histories and keep up with project status through WORQS. FAMIS is the primary tool for scheduling, tracking, and billing all Facilities Services and PMCS work. The support center for FAMIS, facilityWORQS, is used by more than 600 CPFM employees. Over 100,000 work orders are processed through FAMIS each year, with roughly half of those in support of CPFM's preventive maintenance program.

## **Facilities Services**

The department operates its maintenance and preventive maintenance program through FAMIS. The campus is divided into maintenance zones, with support and prioritizing by Facilities Maintenance and landscape zones, with support and prioritizing by Support Services. Custodial Services uses a highly standardized program in OS1 to assign, manage, and accomplish custodial work. Custodial workers use job cards to assign work in a given area, which standardizes all work to be accomplished. Custodial staffing is set by the standards of the International Sanitary Supply Association (ISSA). Additional work is needed in this area to improve planning and scheduling within the organization.

## **PMCS**

The department has a workload distribution process in which incoming projects are reviewed weekly by an established team that obtains any needed clarification on the scope of work prior to

informing the assigned work unit. Once the project is defined, the service request is distributed to the appropriate associate director for further distribution to the work units based on the scope of work and workload.

PMCS is currently developing methodologies for right-sizing workload within current project delivery work units. Construction Services shops perform their assigned projects and complex repair work in support of Facilities Services' Facilities Maintenance with assistance from open order labor contract workers.

## **UEM**

UEM is responsible for more than half a billion dollars worth of equipment. As a result, UEM has specific work authorization and scheduling procedures to ensure continuity and reliability of utility services the university community has come to expect. For instance, the power plant has daily meetings between managers and supervisors where assignments are handed out, priorities are set, and changes to overall schedules are made. A bi-weekly managers meeting with the associate director is also held and work scheduling is discussed as well as major job priorities.

UEM maintenance operations use Microsoft Project and Excel to track scheduled maintenance outages, develop action items, and maintain maintenance records of critical equipment of chillers or gas turbines.

The elevator service contractor is required to spend a designated time for preventative maintenance on each unit and respond to trouble calls through the dispatcher.

## **TRecs**

TRecs uses SysAid to monitor and track service requests and workload distribution.

### ***6.4 An effective preventive maintenance (PM) program is in place to provide regular inspection and servicing of facilities equipment to assure maximum service life, reliability, and operation.***

CPFM has a preventive maintenance program managed by the Facilities Maintenance division of Facilities Services. As part of this program, Facilities Maintenance employees inspect, test, measure, adjust, and replace building systems components on a regularly scheduled basis. Other departments within CPFM have standard practices which include PM in many cases, but these practices are not specifically documented.

## **Facilities Services**

Within Facilities Services, the Facilities Maintenance preventive maintenance program is managed through the FAMIS Preventive Maintenance module. Other divisions have preventive maintenance programs as well. In Custodial Services, equipment is signed out on a daily basis and checked for cleanliness and operational status when returned. Landscape Services maintains an effective program to maintain landscaping equipment. Landscape Services also maintains a GPS-based preventive maintenance program for every tree on campus. Finally, a daily, rotating preventive maintenance of general purpose classroom furniture is standard within Support Services. Additional training in preventive maintenance may be needed within some work groups. Approximately 70% of all Facilities Services' maintenance work is planned or scheduled.

## **PMCS**

Within PMCS, Construction shops provide preventive maintenance support on trade equipment such as saws and drill presses. The shops also ensure regular inspection and servicing of vehicles and electric carts by the university auto shop, but have no formal preventive maintenance program.

## **UEM**

Due to the high monetary value of UEM equipment, a maintenance coordinator is employed to ensure proper and timely maintenance inspections of all utilities equipment. Each piece of equipment is assigned an equipment number and entered into FAMIS. Depending on the criticality of the equipment, a report is generated monthly, quarterly, or yearly and distributed to the appropriate maintenance groups. These reports provide UEM personnel a task list of action items, and any deficiencies found are addressed in-house.

UEM also has set scheduled maintenance procedures for critical equipment. For instance, maintenance mechanics and electricians regularly check campus boilers, and these boilers are inspected and recertified every year. Plant operators use a personal digital assistant system for equipment readings. These readings help identify deviations a piece of equipment may be experiencing. Operators also use electronic and manual incident logs to document substandard conditions. These logs are available to all UEM power plant technical areas on a daily basis and action items are developed.

Infrared testing is also used as a predictive measure on electrical equipment and action is taken if equipment problems are identified. Other preventive and predictive measures that increase reliability and extend the life of critical assets include transformer and turbine oil sampling and analysis, vibration analysis, and rotation of equipment.

The preventative maintenance requirements for each elevator and escalator are part of the agreement with the service contractor.

### ***6.5 An estimating system is used that provides accurate estimates of labor and material requirements in order to plan and schedule the execution of work and to determine the causes of significant deviations between actual costs and estimated costs.***

CPFM estimating tools vary greatly across the departments.

## **Facilities Services**

The department primarily reviews divisional costs on work orders and budget performance at the quarterly Management Metric Review (MMR) presentations. At the division level, Custodial Services reviews monthly budgets, determines cost per square foot, and finds deviations from the norm. They then research why those deviations occurred. The Event and Moving Services (EMS) section of Support Services establishes cost estimates based on previous experience. These estimates take into account travel time, labor costs based on the number of employees required supporting the task, and vehicles required (fuel costs). Availability of equipment such as chairs and tables to support an event is also taken into consideration, as there may be times when some items must be rented to meet a shortfall in requirements. Similarly, the Furniture Shop unit of Support Services provides cost estimates to customers requesting furniture restoration or repair services. The supervisor or crew leader visits customers to obtain an on-site visualization of the work being requested. These on-site visits, coupled with past furniture restoration and repair experience of the employees, afford shop staff the opportunity to develop

a realistic cost estimate for the customer. Further, when similar tasks were accomplished in the past, shop staff query FAMIS to determine what was charged to the customer. This cross-check helps validate the cost estimate being prepared for the customer. As with EMS, the Furniture Shop maintains records and supporting documentation. Facilities Services could improve its estimating capabilities.

## **PMCS**

Project managers use a variety of methods for estimating project cost. While estimating methodology typically depends upon project type, some options available to project managers include the Historical Cost Database System, RS Means data, consultants, and institutional experience. The department reviews divisional costs and budget performance at Quarterly Review and Analysis (QRA) presentations.

## **UEM**

UEM has two systems in place for obtaining estimates of equipment or contracted services. Budgetary estimates for smaller projects such as elevator modifications or minor power plant projects are based on prior similar work and experience, market cost, material cost, and commodity index. For larger projects, cost estimates are provided by the selected architect or engineer and are based on past experience with similar projects of that scope and through estimates obtained from RS Means Construction Cost Data books. The elevator service contract is set up to require the contractor to provide most parts and labor for most required work to keep the unit operational.

## **TRecs**

TRecs estimates hardware and software purchases based on standard university negotiated pricing. The department estimates project time and materials based on historical data, experience, and level of complexity. All projects are funneled through the TRecs Project Management office, which has a defined project work flow that includes creating a project plan and schedule. TRecs uses Project Web Access (PWA) to manage projects, charge time, and track progress.

## **Campus Planning**

Campus Planning collaborates with consultants, coordinates with UT System, and uses historical data to estimate capital projects. Master planning, feasibility studies, and other pre-planning processes are used. There is no standard application of all of these tasks.

### ***6.6 Design guidelines that incorporate such elements as energy consumption, operating costs, environmental concerns , maintainability, sustainability, accessibility, and safety have been prepared, updated and are utilized.***

CPFM maintains and uses campus standards through its PMCS department as well as various departmental standards and guidelines. These Design & Construction Standards within PMCS are intended to assist architects, engineers, other design professionals, contractors and university staff in understanding the preferences of The University of Texas at Austin in the design, construction, maintenance, and repair of its facilities. These standards are intended as guidelines and not specifications; therefore, legal responsibility for project document preparation continues to reside with the design professional. The standards are posted on the PMCS web site.

CPFM has established an Office of Sustainability which addresses campus-wide operational activities. The office aligns its activities with the President's Sustainability Committee, which has recommended a slate of improvements in the university's sustainability posture related to construction and renovation.

A comprehensive emergency management plan, to be applied university-wide, is in development.

### **Facilities Services and PMCS**

Both departments use the standards that are available on the PMCS web site, including the recently updated mechanical-electrical-plumbing (MEP) standards. The update of architectural standards is in progress.

Annual allocation of R&R funds accomplishes prioritized ADA accessibility needs. Accessibility standards established by the State of Texas Department of Licensing and Regulation are applied to each new construction and renovation project. Each project is inspected against that standard.

Facilities Services maintains a written irrigation standard and a tree management plan and is developing a landscape management plan.

### **UEM**

UEM has developed departmental standards that facilitate maintenance and minimize energy usage and down time. UEM has guidelines that incorporate and promote safety and maintenance planning. When considering design elements for larger projects, UEM uses a best value life-cycle cost approach for its systems. For instance, selection of a large centrifugal pump includes consideration of capital costs, maintenance costs, and cost of operation over life of the pump. Some of UEM equipment and construction standards include variable frequency drives, motors, pumps, insulation, elevators, and electrical.

### **TRecs**

TRecs uses software development guidelines that set standards and include areas of focus such as security, resource efficiency, data integrity and user interface guidelines. Some are university-wide and others are specific to TRecs.

## ***6.7 The delegation of budgetary responsibilities for management of sub-units of the budget is effective in controlling expenditures.***

CPFM budgetary controls are in place at the department division level. The Facilities Services assistant director of Business Services meets with associate/assistant directors (ADs) to discuss and review budgetary needs, analyze historic data, and develop a balanced budget across the CPFM organizations. During FY 2008 through FY 2009, delegation of budget responsibilities from Business Services work units enabled a recovery from an approximately \$1 million deficit to a \$1.3 million budget surplus. The ADs and managers continue to be educated and informed about budgeting, enabling cost control. Processes have been established, such as the MMR and QRA, to provide updates and understanding of how individual projects and staff member actions can affect the financial bottom line. Project funding is closely monitored to ensure that funds are allocated efficiently and appropriately and expended within their respective funding expiration cycle, and that any unused funds are lapsed to their original sources in a timely manner.

In FY 2009-10, CPFM underwent a conversion process to ensure that the university system used for accounting, DEFINE, and the system used by CPFM, FAMIS, converged in real-time, providing project management staff with accurate project budget information.

## **Facilities Services**

The department's budget allocations are delegated downward to at least the AD level. Some ADs further delegate budget allocations to the shop level. Managers at each level are held accountable for meeting budget targets through quarterly MMR presentations. The Pickle Research Campus (PRC) reviews budget performance weekly at the management level. Support Services holds weekly budget meetings.

## **PMCS**

The primary source for monitoring project budgets is FAMIS. The recently completed DEFINE-to-FAMIS interface provides accurate project budget status to project managers. Funding source monitoring is through specialized work units that allocate and prioritize funds such as R&R and ADA funds. The Project Support team and director closely monitor project funding such as Library, Equipment Repair and Rehabilitation (LERR), which must be expended within a designated timeframe.

The QRA provides a reporting tool on allocation of funding sources, expenditures, and work unit delegation. Construction Services budgets are reviewed monthly and shop supervisors receive an operating fund report. Budget status is reported quarterly to the management team, including the director. Materials, Operating, and Equipment (MO&E) funds are monitored through the director's office. The ADs are responsible for monitoring employee training funds and overseeing employee overtime.

## **UEM**

Budgetary responsibilities at UEM reside at the managerial and AD level, and budget information is reported to the executive director for prioritizing designated projects. Once the projects are prioritized, UEM uses a best value approach for procuring equipment and executing projects. The approach consists of soliciting bids or proposals from vendors; a point system is used to grade bids with weighted criteria such as cost, experience, and past work with the university.

Additionally, ADs receive expenditure reports, project summary reports and labor reports on a monthly basis to control expenditures. Internal controls such as purchase order request forms on the procurement side are also in place to track expenditures. The Administrative Services division keeps a close look on budget funds versus actual remaining funds, with monthly reports issued to account administrators to inform them of remaining and encumbered funds. These efforts have resulted in the department not exceeding approved budgets over the last 13 years except for fuel costs that escalated due to factors outside the control of the department; however a new long term procurement process with the General Land Office (state agency) has allowed the department to control this very volatile commodity. Except for increasing labor costs MO&E budgets were flat for about 10 years which is now declined due to budget cuts. Though this has occurred the department has been able to pay back the MO&E investment in plant improvement 100%.

## **TRecs**

The department's budget is managed at the director level. Each AD is provided with an annual allocation.

## **Campus Planning**

Budgetary responsibilities are mainly handled through the director's office, with project managers overseeing project budgets.

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## **PERFORMANCE RESULTS**

## 7.0 Performance Results

The facility organization's performance can be assessed through campus appearance; employee satisfaction and motivation; effectiveness of systems operations; customer satisfaction; financial results; and, supplier/business partner results. Where feasible, it is helpful to have measurement tools in place to assess performance in these areas.

### ***7.1 The appearance of the buildings and grounds is in keeping with the surrounding community as well as the desired image of the institution.***

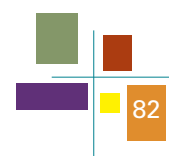
Campus Planning and Facilities Management (CPFM) is committed to the university being a first-class institution in every regard, including the appearance of the buildings and grounds that comprise the colleges and facilities located in the heart of Austin, Texas. The grounds are carefully maintained and kept free of litter and debris by both the Landscape Services team and a Recycling & Sustainability program that includes solid waste collection and disposal. The buildings are carefully designed to conform to a rigorous set of architectural standards, reflecting a classic Spanish Renaissance style with modern functionality and purpose. The guidelines for the appearance of buildings and grounds are found in the Campus Master Plan, developed with input from all areas of the campus community and managed by the Office of Campus Planning. Major projects, such as new construction of buildings, monuments, or outdoor areas, are developed with input from the Faculty Building Advisory Committee prior to breaking ground, and status updates and information sessions are held during construction. The CPFM senior associate vice president and directors take a monthly walking tour of campus and identify areas of concern which are addressed immediately by the appropriate department.

#### **Facilities Services**

The Landscape Services branch of Facilities Services follows the combined APPA and Professional Grounds Maintenance Society (PGMS) Operational Guidelines for Grounds Management. Native plants provide attractive, varied, sustainable, and low-maintenance vegetation across campus. Landscape Services maintains a complete tree inventory that includes, among other information, the type, age, and location of every tree on campus. Recent awards include the 2007 Grand Award in University and College Grounds from the Professional Grounds Maintenance Society (PGMS), the Arboricultural Project Award in 2010, and designation as a Tree Campus USA by the Arbor Day Foundation in 2008, 2009, and 2010. The urban forester was named Arborist of the Year in 2008, and the Landscape Services manager has served on the PGMS board of directors since 2006.

The Recycling and Sustainability branch of Facilities Services provides solid waste pick-up at 108 locations throughout campus five days per week. The recycling program has been expanded to include aluminum cans and plastic bottles, and attractive new collection bins have been distributed throughout campus, both inside and outside of buildings. The Campus Environmental Center (CEC), a student organization sponsored by CPFM, manages the Trash to Treasure campus garage sale and sponsors the annual Sustainability Week event, among other activities that seek to reduce the amount of solid waste generated and lead to a cleaner campus.

The Central Stores unit of the Business Services division offers purchasing services to assist with the maintenance of buildings and grounds. This includes materials available for issue from the Central Stores warehouse as well as items procured from sources external to the university.



## **PMCS**

PMCS has architectural standards in place that contribute to the preservation of historic buildings and that ensure compatibility of renovations with existing buildings. PMCS also takes direction from the Faculty Building Advisory Committee regarding the appearance of the campus. PMCS attains customer satisfaction information through client liaison meetings and project surveys.

## **UEM**

The University of Texas at Austin is a large campus with many buildings, walkways, and traffic areas. For accessibility and the safety of the public, UEM gives particular attention to the lighting of the grounds and exterior building areas. Street and sidewalk lighting is provided and maintained by the Electrical Distribution division to meet specific area illumination standards as directed by the Illumination Engineering Society of North America.

### ***7.2 The condition and cleanliness of facilities are in keeping with the image and standards adopted by the institution as well as activities associated with its mission and programs.***

CPFM is dedicated to presenting the campus to the occupants and the public as a clean, well-kept environment. Through an award-winning training program, building surveys, and audits, the condition and cleanliness of the university's facilities are maintained by a dedicated team of employees. It is a major challenge to maintain the conditions and cleanliness of the buildings during these times of budget constraints.

#### **Facilities Services**

The Custodial Services division has adopted the (OS1) Team Cleaning program, a Certified Green program, to ensure that all facilities are cleaned to the same standard. Custodial staff have surveyed each building, room by room, hallway by hallway, and completed a detailed analysis of the cleaning requirements for each building division employees clean. Team cleaning system methodology is applied to each building. Information gathered is used to determine how many cleaning supplies and how much time is needed to provide a consistent cleaning process. Custodial Services schedules cleaning audits of campus buildings throughout the year to verify that cleaning standards are being met. If deficiencies are found, staff members are retrained in the necessary areas. The division has expanded training to provide continual training for the employees who serve as members of the team cleaning system. Individual building cleaning schedules are available for customers on the Facilities Services web site.

Custodial Services has won several awards during the past several years. A list of these awards can be found on the Facilities Services awards web site.

## **UEM**

Due to complex maintenance and operational functions of the utility infrastructure, UEM employs a safety and training coordinator to monitor work activities, train personnel, and coordinate activities with the university Environmental Health and Safety department (EHS). Coordination with EHS ensures compliance with state and federal regulations regarding hazardous materials such as asbestos insulation and lead paint.

Cleanliness of the grounds and waterways is extremely important, so the department has instituted and adheres to protocols to protect against release of environmentally dangerous substances and pollutants. Programs such as Spill Prevention Controls and Countermeasures

(SPCC), which implements design standards and procedures to prevent the release of oils into the environment, are enforced in the everyday operations of the plant through automated monitoring and visual inspection of holding vessels and piping.

### ***7.3 Building systems and infrastructure are maintained and operated at a level of reliability that contributes to the successful implementation of the institution's mission and programs.***

The university is home to countless academic, research, and community programs and events. A primary focus of CPFM is to provide reliable services such as power, lighting, heating and cooling, information technologies, and construction and maintenance support to ensure that these programs and events run smoothly and efficiently. To maintain a world-class academic and research institution, the facilities must be reliable and responsive and provide an environment that does not interfere with the activities of the campus customers. A major concern facing CPFM is the maintenance of a rapidly aging infrastructure with recent reductions in budgets and manpower.

#### **Facilities Services**

Facilities Maintenance recently reassigned its preventive maintenance staff to four zone shops that provide service to the main campus in order to better respond to maintenance requirements across campus. Both the Facilities Maintenance and PRC divisions use metrics to work with management and staff on areas that can be improved. A predictive maintenance program has been created to identify, assess, and correct facility issues before they become large maintenance items. Through the use of predictive measures such as thermography and instrument re-calibration, many possible maintenance problems are found and corrected before they become equipment failures, saving the organization time and money.

#### **UEM**

The mission UEM is to be "a first-class organization efficiently providing the highest quality and reliable utility services to the university with a commitment toward stewardship of resources." The department exists to provide the energy and utility needs of the campus with a minimum of interruptions and at a greater reliability than could be provided by the local public utility. Plant reliability has been calculated at 99.9998% over the last four decades, with only three campus-wide outages in the last 35 years. Individual building outages vary from year to year; there were four partial building outages in 2010, one in 2009, and five in 2008. The causes of these partial outages vary greatly, from rodents contacting lines, or contractors errantly disconnecting power to a building.

The combined heat and power system is designed for reliability and flexibility with redundancy in equipment, controls, and distribution systems. Utilities are distributed to campus buildings through over six miles of tunnels, with looped systems that can be configured to maintain service to buildings during scheduled or unscheduled outages. The campus electrical system is a ring-bus configuration, with two or more electrical feeds to each distribution bus and to each building. The campus is also connected to the local utility through four large 50 MVA transformers to provide standby power to the buildings in the event of an upset in the power plant.

The elevator and escalator system operation is critical to the building use so that prolonged or frequent outages cannot be tolerated. These performance indices are reviewed on a daily basis to determine if the operation is acceptable.

## **TRecs**

TRecs' goal is to provide University Operations service units with information technology that enables the units to better serve the campus. TRecs maintains technology infrastructure for network, disk, security and backup and requests funds annually to support the operations of these systems. The request is typically not fully funded but is sufficient to maintain all infrastructure areas to ensure they can be maintained and operated with reliability to support the needs of all areas. TRecs also supports and maintains several data systems such as FAMIS and WORQS. (See section 4.3.)

### ***7.4 Funding resources are effectively used and are adequate to support a level of facilities maintenance that prevents the deferral of major maintenance and repairs.***

CPFM uses a Renovation and Renewal (R&R) project prioritization model to assign the order in which capital projects to repair or replace buildings occur. Through the use of auditing programs, prioritization, and pre-planning, CPFM departments are able to plan critical maintenance actions and prevent major disruptions to the campus. These actions must be prioritized to capture the most value from the available funds given to the departments. Monitoring of work orders, inventories, and leveling maintenance costs help departments like Facilities Services and UEM plan and execute maintenance evolutions on a priority basis and keep the essential services to the campus intact. PMCS manages project planning, coordination and performance.

The Renovation and Renewal Project Prioritization and Selection Focus Group was formed in 2009, and charged with finding the most effective and efficient project prioritization and selection program that relies on the combination of statistical and observed (internal and external) data that will maximize the effectiveness of capital investments by:

- extending the useful life of all buildings,
- preventing premature replacement, and
- promoting orderly, planned capital projects to address facility renovation and renewal needs.

The campus, divided into five areas, is assessed on a five-year cycle, with a different area scrutinized each year. The five-year assessment is supplemented with zone audits, where work orders and projects in buildings are examined to more accurately assess the condition of the buildings. A third-party agency, Vanderweil Facility Assessment (VFA), is contracted to perform auditing and data assessment and to provide reports and recommendations to the university. The reports include information on the building age, maintenance records, occupancy, usage of space (for example, laboratory or office), and energy usage. This data is used in prioritizing projects assigned to PMCS, which receives \$12 million to \$14 million per year to perform these projects. Funding available to accomplish the projects does not match the recommendations of the R&R program, which results in deferring maintenance.

## **Facilities Services**

The Facilities Services group manages the R&R Program. The Facilities Maintenance division of Facilities Services uses the information provided by the facilities assessment to prioritize and initiate maintenance projects that need to be done across the campus, working in partnership with PMCS, which manages the actual projects. Facilities Maintenance recently reassigned its preventive maintenance staff to four zone shops that provide service to the main campus in order to better respond to maintenance requirements across campus. The PRC division manages maintenance projects that need to be done on that campus. Metrics are used to work with

management and staff on areas that can be improved. The Central Stores unit of the Business Services division maintains an adequate level of inventory to support much of the routine maintenance on campus. Central Stores works in conjunction with Facilities Services and PMCS to ensure that the items inventoried meet university standards and that obsolete items are eliminated.

## **PMCS**

PMCS executes projects through bidding, contracting, and in-house labor construction services. Construction Services, Project Management, Project Support, and Bidding and Contracting are the divisions within PMCS that handle the variety of projects assigned. Major projects are scheduled to minimize impact to students and researchers (typically in summer, between semesters or during spring break). Standard operating procedures for associated processes and design and construction standards are publicly available on the PMCS web site.

## **UEM**

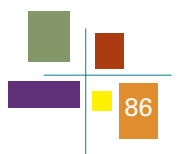
To keep the combined heat and power plant operating at peak efficiency and reliability, a robust maintenance program is in place to address both predictive and reactive maintenance needs. Due to the size and complexity of the equipment used in the generation of power, steam, chilled water, and other auxiliary services, the parts and services required to maintain the equipment are extremely costly. Maintenance evolutions are planned years in advance to anticipate the costs of the parts and services required. UEM purchases long lead and high cost items over several budget cycles to avoid large expenditures immediately prior to the maintenance. Funding for these parts and services is allocated and leveled over a ten-year horizon for all major equipment in the power plant and chilling stations, including combustion and steam turbine parts, boiler inspections and parts, chiller inspection and maintenance, and chemical treatment. Annually, UEM evaluates proposed projects to increase operability, reliability, and efficiency and allocates funding based on several factors such as affordability, payback, life-cycle benefits, etc.

### ***7.5 Staff is highly motivated and productive, taking pride in the accomplishment of their duties.***

To maintain and operate the complex facilities of a large institution like the university, staff must be well-trained and professional. The most valuable resource in CPFM, the staff members are motivated and productive and are recognized for their accomplishments, professionalism, and ambition in several ways. Excellence is rewarded with money, time off, certificates of appreciation, and other means through a variety of award programs. Training is available to employees to further their careers and enhance their value to the departments in which they work. Surveys and focus groups are used to gauge employee needs and concerns and to recognize areas that can be improved to increase employee satisfaction. Due to severe budget reduction mandates and uncertainty of the future, overall morale and security is suffering. It is not apparent how this is affecting productivity at this time.

Among other honors, CPFM employees have received the University Operations SLICE (service, leadership, innovation, creativity, and excellence) Award. The SLICE Awards Program recognizes outstanding employees for the ways they embody the values of University Operations, and the President's Awards for Outstanding Staff and Supervisors recognizes staff excellence at the university level.

Additional information on efforts to train employees can be found in Section 5.2, and additional information on measuring of employee satisfaction can be found in Section 5.9.



## **Facilities Services and PMCS**

Facilities Services and PMCS have two programs that acknowledge outstanding performance by employees within their organizations. The SITES program is a peer-to-peer award program for both individuals and teams that exemplify departmental values (service, integrity, teamwork, excellence, stewardship). The On the Spot program recognizes exceptional workplace efforts and is given to the employee by a management staff member (supervisor or above). The SITES and On the Spot recognition programs received the APPA "Effective and Innovative Practices" award in 2009.

Facilities Services completed an Employee Climate Survey in 2010, and posted the results on the department web site. Results are being used by the management team to identify areas of improvement. PMCS completed a Survey of Organizational Excellence in 2009, and discussed results of that survey with all employees in an open forum. All employees were subsequently invited to participate in focus groups that addressed the highest ranking topics from the survey: fair pay, internal information, team effectiveness, fairness, and goals.

Facilities Services and PMCS employees may also participate in the Leader Development Program, which helps participants prepare for supervisory roles, and the Executive Leadership Program, which helps supervisors and managers prepare for higher-level positions at the university.

## **UEM**

With a staff of fewer than 180 people, UEM operates and maintains utility production and distribution services for the entire main campus, including power, heating, cooling, water, and compressed air. The staff is both highly skilled and specialized, and performs tasks quickly and professionally to minimize interruptions of these services. Major equipment evolutions, such as turbine generator overhauls and chiller maintenance outages, are not contracted out to service providers but are instead performed by the maintenance staff. Performance of these complex maintenance actions by highly skilled UEM technicians saves the department hundreds of thousands of dollars a year and is a source of pride for the maintenance groups.

In-house advancement is highly valued, and department personnel are encouraged to pursue training and education to forward their advancement opportunities. UEM has instituted a training program for employees that is intended to establish competence in their current positions as well as allow a means to learn other positions, even cross-train to other disciplines, for future advancement opportunities. Training modules include both general industry knowledge and site specific training, tailored to existing combined heat and power plant systems and equipment. Completion of the personal training program is included in personnel evaluations, and graduates receive a certificate of completion and recognition by supervisors, managers, and executives within the department. Participation by eligible employees has been 96% since inception of the program in September 2005, with over 9,000 hours of training completed.

## **TRecs**

TRecs does not have any special departmental recognition programs but proudly recognizes its winners of university awards such as SLICE on the department's home web page. TRecs has not surveyed internal staff to gauge their satisfaction but does keep metrics on productivity.

## ***7.6 Customer satisfaction measures ensure that the levels of service are consistent with customer needs and requirements and within the facilities departments' capability.***

CPFM departments strive to provide the best service to the campus in a timely and thorough manner. Some departments have direct interface with customers, like Facilities Services, PMCS, and TRecs, and therefore use surveys and feedback to assess customer satisfaction and needs. Conversely, UEM operates behind the scenes and works hard to remain "invisible" to the campus community. All efforts are made in carrying out project and maintenance tasks to avoid any disruption of campus activities. When disruptions are unavoidable, pre-planning and coordination with the affected parties is done to inform customers of the purpose and intent of the activities and identify the impacts to customers' operations.

During large scale projects, the academic schedule is considered in the project schedules, and all noisy construction activities are timed to take place outside of normal class hours when possible and stopped completely during final exams. Large campus and community activities such as football games, Explore UT, marathons, and such are also considered in scheduling and are accommodated. More information about customer satisfaction can be found in 3.0 Customer Focus.

### **Facilities Services**

Facilities Services recently implemented a customer survey and will be developing customized surveys for divisions to use in gaining customer feedback.

The Central Stores unit of Business Services surveys its customers on a routine basis to ensure the products stocked for issue meet the needs and requirements for completing Facilities Services and PMCS work. Central Stores reviews inventory to identify obsolete items or items no longer being used as well as to add new products that would make completion of work more efficient. The unit does not maintain all items needed but works to ensure frequently used items are stocked and available.

Business Services administers contracts for uniforms, pagers, and cell phones for Facilities Services and PMCS. Staff meets with the vendors on a regular basis to ensure contract requirements are being met. Business Services also facilitates joint discussions with the vendors and department customers to ensure the vendor is aware of any challenges with the service that need to be corrected.

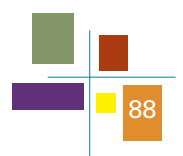
Facilities Services associate and assistant directors (ADs), managers, and supervisors meet with internal and external customers regularly to determine if needs are being met or improvements are necessary.

### **PMCS**

PMCS sends customer satisfaction surveys to clients after capital projects are completed to determine project success. Survey results are tracked to identify areas for improvement in the project delivery process. The Construction Services division uses a similar survey process for its small projects.

### **UEM**

Though UEM has not used formal customer satisfaction surveys, the position UEM considers in regards to customer satisfaction is simple: interruption of services to the campus is



unacceptable. It is a matter of pride for the department to be invisible to the campus, providing services in the background with a minimum of interference to the academic and research operations of the university, but one of the most visible units in regard to energy conservation. Any incidents, such as loss of power, water, or other services provided by UEM, are dealt with and resolved immediately and completely. Most building outages are addressed in hours or less.

Operations staff man the power plant and chilling stations at all times and provide the first response to upsets or unusual conditions. All members of the maintenance and distribution groups provided mobile phones are considered on call and are expected to respond to such incidents at any time, day or night.

### **TRecs**

TRecs validates customer satisfaction by providing surveys assessing the quality of the service that was provided. TRecs provides metrics on a monthly basis for University Operations on the top 10 web page view hits each month and compares that data to the previous month.

## ***7.7 Managers and supervisors stay in touch with the needs of higher education.***

All of the departments in the CPFM organization are dedicated to maintaining The University of Texas at Austin as a world-class institution. As such, there is considerable effort to interact with peer institutions, faculty, students, and professional organizations for information and sharing. Through conferences, seminars, and workshops, department leaders can network with peers and professionals and learn best practices to improve the operations in their own area. By working with faculty and students, department members help support the academic and research goals of the university and increase the recognition of the organization to the campus at large.

The senior associate vice president for CPFM meets one-on-one with the vice president for University Operations on a regular basis and with CPFM directors on a weekly basis to exchange information regarding the needs of higher education and to coordinate portfolio responses to these needs. Periodic meetings are held with customers and stakeholders to update them on capital projects and to obtain feedback on services provided and needs to be met.

Customers and stakeholders were surveyed in 2010 to get their input on service priorities and levels of satisfaction with services provided. Results were shared with management and focus has been placed on service improvements in response to survey results.

### **Facilities Services**

Facilities Services ensures that its managers and supervisors stay in touch with the needs of higher education in a variety of ways. The directors and ADs for Facilities Services and PMCS meet each week to exchange information regarding the needs of the university. The director meets with each AD twice a month on an individual basis, with all ADs once a week as a group, and with all managers and ADs once a month to update management on current university information and to establish departmental priorities.

All assistant managers, managers and ADs are scheduled to receive certification with the APPA Facilities Institute, and supervisors are scheduled to attend one of the APPA Facilities Institute sessions. Facilities Services management routinely attend CAPPA and TAPPa conferences. The director of Facilities Services serves as a member of the CAPPa board of directors and on the Program Committee. Facilities Services completes the APPA Facilities Performance Indicators (FPI) annual survey, which provides comparisons to universities throughout the United States and Canada.

The student environmental organization, Campus Environmental Center (CEC), is sponsored by CPFM and the staff liaison to CEC operates within the Facilities Services Recycling and Sustainability unit. The liaison and CEC are actively involved in supporting the university's sustainability education and awareness programs by arranging projects for students who are enrolled in the Jackson School of Geosciences Sustainability Signature courses. Through this process, students can work on sustainability-related projects such as mapping of recycling and solid waste collection locations. During its fall Sustainability Week, and in collaboration with the Office of Sustainability, the CEC helps bring together campus experts in sustainability to share information with the campus community about sustainability research, innovations, academic programs, and other activities.

## **PMCS**

PMCS holds periodic College Liaison Program meetings with all colleges to discuss current projects, future goals of the college, and satisfaction with service levels they receive. Meetings include the PMCS director, associate directors, managers, and project managers supporting those colleges. PMCS revises the department's strategic plan every two years to remain aligned with the needs of the colleges.

## **UEM**

The department has developed many relationships and dialogs with a diverse group of academic departments at the university. Energy and sustainability are important topics in many fields, including engineering, geosciences, journalism, architecture, communications, business, and policy. Dozens of plant tours have been given to students, faculty, professional associations, officials from other campuses, international visitors, environmental and sustainability groups, and many others.

UEM has employed several university engineering students as interns in a variety of capacities. Mechanical engineering and electrical engineering students are hired to assist department engineers with projects, drawings, and system design and implementation, and the interns gain valuable hands-on experience that proves to be valuable in their future careers.

Each semester, the department sponsors a Mechanical Engineering Senior Design Project for the Cockrell School of Engineering. The Senior Design Project is a required course for senior mechanical engineering students, where they work with a company representative or project manager to design and analyze a product or system for real-world use. The department's plant engineering team works with these student teams over the course of a long semester to analyze, design, and implement equipment and systems that help improve the operability and efficiency of the combined heat and power plant. Previous projects include a boiler superheater drain recovery system, a heat exchanger fouling analysis tool, and a study analyzing the campus chilled water differential temperature.

The department is currently assisting in developing curricula with professors in the Mechanical Engineering department for courses in energy technology, policy, and thermal fluid systems. The plant engineering team is providing system data and project histories to students, and will be guest lecturing and speaking to the students about the combined heat and power plant. System tours and on-site interviews of engineers, operators, and technicians will give students a much deeper understanding of the course materials and will ultimately produce more knowledgeable and prepared graduates, benefiting the university's image and society in general.

## **TRecs**

The director of TRecs serves on two campus governance committees, Administrative IT Leadership and the Architecture Infrastructure Committee, to discuss and help guide the direction of information technology on campus.

The Information Management (IM) division keeps the Texas Higher Education Coordinating Board updated with space data tracking information. IM also networks with other institutions by attending annual conferences with the Society of College and University Planners, the Association of Texas College and University Facilities Professionals, and Pervasive. These events are premier forums for researchers to present their latest results in all areas related to architecture, design, implementation, and application computing.

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## OTHER CONSIDERATIONS



## **8.0 Other Considerations (Sustainability or Natural Resources Management & Conservation)**

The organization values and evaluates the environmental impact of all its activities; incorporates green building and design methods; optimizes the efficiencies of its operations and services; and promotes natural resource conservation through outreach programs, while minimizing its wastes and environmental footprint.

### ***8.1 Sustainability goals exist, and are documented, communicated, understood by all and periodically reviewed***

The University of Texas at Austin has adopted a Campus Sustainability Policy to integrate sustainability in academic programs, operations, campus planning, administration and outreach.

The policy defines sustainability as “societal efforts that meet the needs of present users without compromising the ability of future generations to meet their own needs. Sustainability presumes the planet’s resources are finite, and should be used conservatively, wisely and equitably. Decisions and investments aimed to promote sustainability will simultaneously advance economic vitality, ecological integrity and social welfare.”

The policy outlines six major principles: Academics, Operations, Administration, Planning, Outreach, and Implementation. Elements of each principle area can be found in practice in various divisions of University Operations and Campus Planning and Facilities Management (CPFM).

Several of the major organizations within CPFM have web pages on their web sites dedicated to that department’s particular sustainability efforts. The Office of Sustainability provides support as appropriate to all other operational and academic units in communicating, interpreting and implementing the campus sustainability policy.

### ***8.2 Sustainability goals and initiatives are valued and incorporated in day to day operations and long term planning.***

#### ***8.2.1 The organization actively promotes the sustainable use of water resources through water conservation initiatives.***

##### **Water Recovery Program**

Utilities and Energy Management (UEM) actively promotes the responsible use of water resources and has had an active water recovery program in place since the 1980s. At present, the university uses more than 800 million gallons of water per year and has recovered more than 1.3 billion gallons since the program’s inception. The program recovers water that has been used for cooling laboratory equipment, swimming pool drain water, groundwater, and air conditioning condensation, and uses it to offset evaporation in cooling towers. No recycled water is used for drinking or any other domestic purpose.

### **Reclaimed Water Project**

UEM is investigating the use of highly treated wastewater (reclaimed water) from the City of Austin to make up evaporative losses in campus cooling towers. This will allow the university to replace consumption of millions of gallons of drinking water per year with non-potable water, helping to lessen the burden on the city's infrastructure.

### **Chilled Water Conservation**

In 1997, UEM initiated a program to minimize water loss to the chilled water system through preventive maintenance activities, by proactively replacing corroded carbon steel pipe nipples with stainless steel and replacing older packing gland-style pumps—literally designed to leak—with newer sealed mechanical pumps. In addition, many more block valves were added to the system, resulting in shorter pipe segments and less water loss due to maintenance activities. By 2002, the water makeup rate had been reduced to 45 gallons per minute (gpm) and by 2010, to 38 gpm. With ongoing pump replacement, the goal is to achieve a continuous makeup rate of 25 gpm or less.

### **Smart Sprinklers**

Facilities Services is conserving water by upgrading irrigation systems on the main campus. A solid state weather station will communicate with the sprinkler controllers. The department is upgrading 85 existing controllers to wireless so they can communicate with the new control program. Digital flow sensing devices will measure water consumption, and if enough rain falls the sprinklers will not turn on.

### **Demand-side Conservation**

In 2008, Facilities Services initiated demand-side water conservation projects to replace older, 3.5 gallons per flush (GPF) and 5.0 GPF toilets with 1.6 GPF toilets in educational and general buildings. In addition, high flow urinals, lavatory fixtures, and shower heads were replaced with modern low flow hardware. In all, nearly 6,000 water fixtures were replaced with more efficient units on the main campus and at the J. J. Pickle Research Campus (PRC). Cumulative savings for replacements on the main campus are projected to be more than 48.3 million gallons per year at a cost savings of \$487,000 and a payback of only 1.5 years. The project was completed in February 2009.

## **8.2.2 The organization actively promotes the reduction, reuse and recycling of materials and equipment on campus**

Facilities Services is actively involved in recycling and reuse. The Recycling and Sustainability branch focuses on practices that support sustainability and the environment. The branch consists of five units, four of which are directly engaged in supporting the university's recycling and sustainability programs: Recycling and Solid Waste, Surplus Property, Furniture Shop, and the Campus Environmental Center (CEC). Each of these units performs functions that support the "triple bottom line" of having a positive influence on society, improving the environment, and demonstrating financial performance. CPFM has also begun hosting an annual Sustainability Fair which allows for interface between CPFM employees and sustainability-focused companies.

## **Recycling and Solid Waste**

The Recycling and Solid Waste unit services 108 locations for the purpose of collecting paper and cardboard. During FY 2009-10, the university recycled more than 1,165 tons of paper and cardboard. This equates to a savings of 19,810 trees; 8,157,030 gallons of water; 440,810 gallons of oil; 4,777,689 KWH of electricity; or 103,710 cubic yards of landfill space.

To improve efficiencies and campus appearance, Facilities Services has embarked on an initiative to replace outdated paper and cardboard collection receptacles with multi-bin, durable, and aesthetically pleasing recycling stations. These stations have bins for plastics, aluminum, paper, and waste. The department has also purchased two low maintenance solar trash compactors, co-located with plastic, aluminum, and paper collection bins.

There is interest in establishing a collection and recycling program for discarded glass. Facilities Services has investigated options, but due to the lack of available glass recyclers coupled with the logistics issues of transporting glass to a viable recycler, the department has placed this initiative on hold until it becomes more feasible.

## **Surplus Property**

A key component of the recycling concept and practice is to reuse materials before recycling them whenever possible. The Surplus Property unit focuses on commodity reuse rather than recycling. The unit, located on PRC, is responsible for collecting, redistributing, and disposing of university property no longer in use. This property includes vehicles, computer equipment and components, furniture, equipment, and any other item deemed unneeded by departments across the university.

Since September 2009, Surplus Property collected more than 3,662 tons of materials from the university. Forty-five percent (1,650 tons) was sold during auctions periodically conducted on-site. All computer equipment is transferred to the Texas Correctional Industries (TCI) as mandated by the state. Further, an additional 61 tons of material have been returned to university customers having a need for specific items such as desks, couches, and credenzas. Last year Surplus Property instituted program in which the Surplus crews collect useable wooden pallets throughout campus. These pallets are reused to support Surplus Property's operational requirements. All excess pallets are sold at the auctions. To date, more than 28 tons of wood have been diverted from the landfill, and an equivalent of 476 trees have been saved.

## **Furniture Restoration**

Working in tandem with the Surplus Property is the Furniture Shop, where some of the items reclaimed by university customers are sent for repair or restoration. Highly skilled employees take virtually unusable furniture and restore it to like-new condition at a substantial cost savings to the customer. This practice saves customers from the need to purchase new furniture and allows for diversion of unwanted items from the landfill. The Furniture Shop also has teams of skilled workers who travel on-site to repair classroom furniture, including desks, chairs, and theatre seating—another example of repair versus replace. During FY 2009-10, the Furniture Shop diverted an average of 5,000 pounds per month from the landfill through its furniture repair and restoration processes.

## **Campus Environmental Center (CEC)**

CEC hires student staff to manage a variety of student-focused sustainability projects. Sponsored by CPFM, the organization represents the dual interest of the student body and University Operations in support of a more sustainable campus. CEC is integral to promoting the recycling efforts of Facilities Services and also works closely with the Office of Sustainability to implement a variety of campus sustainability projects such as the annual Sustainability Week in October. More information about CEC is available in Section 8.3.

### ***8.2.3 The organization actively supports and promotes alternative transportation within operations***

Several initiatives that support or promote fuel conservation are in place throughout the campus, and CPFM departments and their employees participate in these initiatives to varying extents.

#### **Vehicle Fleet Replacement**

All CPFM divisions are in the process of down-sizing their fossil fuel powered vehicle fleet, and various divisions are exploring or using alternative methods of fuel savings.

Facilities Services has been moving away from gasoline powered vehicles to electric vehicles. To date, Facilities Services has purchased 18 electric carts. Of these, six will replace gasoline powered vehicles. The six gasoline powered vehicles will be transferred to Surplus Property to be sold. The remaining 12 electric carts will be used in lieu of purchasing gasoline powered vehicles. Facilities Services has also replaced an aging high fuel consuming vehicle with a Hybrid Electric Vehicle that will provide fuel economy and reduced emissions. Further, the department has identified 25 old, inefficient vehicles to replace with 10 electric carts and 12 new Flex Fuel (E85) vehicles that are more fuel efficient and environmentally friendly. Facilities Services will continue to identify additional gasoline powered vehicles for replacement with electric powered vehicles or carts.

#### **Mass Transit**

The university shuttle system, managed by Parking and Transportation Services, is the largest college shuttle system in the country, consisting of 14 routes and a ridership of more than 7.5 million passengers annually. The system provides an easy and cost effective means for students, faculty, staff, and visitors to access the campus. Students, faculty, and staff may ride the shuttles at no charge with valid university identification. Many CPFM employees use the shuttles to get to work, travel to the J. J. Pickle Research Campus (PRC), or go from the Facilities Complex to main campus.

#### **Car Pools and Car Sharing**

The university car pool program, also managed by Parking and Transportation Services, strongly supports efforts to reduce traffic congestion and curb vehicle pollution in the Austin area. Car pool members receive numerous incentives to share the commute with a fellow coworker or student. Zipcar, a car-sharing program launched in January 2011, allows students, faculty, and staff to rent vehicles on-demand hourly or daily, reducing the need to bring a car to campus.

Zipcar aims to help university administrators maximize the use of limited on-campus parking, reduce campus congestion, and decrease their carbon footprint.

### **Bicycle Sharing and Facilities**

The CEC Orange Bike Project provides students with more sustainable choices for transportation. Through the project, students are able to check out a bike just as if they were checking out a library book and keep the bike for the entire semester. They can also obtain training in bicycle safety.

As additional encouragement of bicycle use, the university makes facilities available across campus to bicycle commuters who want to shower after their commute to campus.

### **Flexible Work Arrangements**

Flexible work arrangements such as telecommuting, compressed work weeks, and flexible working hours (flextime) may increase employee job satisfaction and retention. The Technology Resources (TREC)s department offers telecommuting to its employees, but participation in this program is otherwise very limited at this time.

## ***8.2.3 The organization actively monitors and seeks to reduce carbon emissions.***

### **Greenhouse Gas Inventory**

In 2008, CPM contracted with Good Company, a research and consulting firm, to perform a greenhouse gas inventory for both the Main Campus and PRC. Good Company gave several presentations about the inventory to the university community; these have been consolidated into a single presentation that gives an overview of the context for measuring carbon footprints, inventory findings, and topics for future study.

### **Monitoring and Reporting Emissions**

UEM monitors power plant emissions and reductions and provides a report to the Environmental Protection Agency on all regulated emissions each year. Records are available back to 1996.

Energy production on campus is fueled with natural gas, a fossil fuel which emits CO<sub>2</sub> when burned. Measuring and understanding the amount of CO<sub>2</sub> emitted directly or indirectly by a process has become a standard metric for comparing the sustainability and efficiency of energy saving projects. Knowing the rate at which CO<sub>2</sub> is emitted for each energy stream on campus, combined with the metered data on how much energy a campus building is using, allows UEM to evaluate a building's carbon footprint and provides for more informed decisions on how to reduce the overall carbon emissions on campus.

## ***8.2.5 The organization actively monitors and seeks to reduce hazardous waste and energy consumption from campus research activities.***

The university Office of Environmental Health and Safety (EHS), a department within the University Operations portfolio, manages a robust and well established hazardous waste management

program with an emphasis on waste minimization. In the 2009 calendar year, the university's volume of hazardous (RCRA) waste was reduced by 12.1% from the previous year.

In collaboration with EHS and with support from the vice president of Research and vice president of University Operations, the Office of Sustainability launched a pilot Green Laboratory Initiative (GLI) during the spring 2011 semester with 10 labs. The GLI voluntary program is designed to assist principal investigators in developing sustainable practices in their laboratory. The goal is to identify strategies that continue to support research while consuming less financial and natural resources, with particular focus on energy savings.

***8.2.6 The organization has adopted green procurement practices and standards that address the environmental consequences of a product at all stages of its lifecycle; considering the costs of securing raw materials, manufacturing, transporting, storing, handling, using and disposing of the product.***

Although the CPFM organization has not adopted specific green procurement practices and standards, it has adopted a best value procurement practice that focuses on the optimum combination of economy and quality to achieve the objectives of the end user and the university. To establish this best value, decisions are made on some pre-purchase evaluation criteria pertaining to specific purchases. Some or all of these criteria may be considered: price, quality, service after the sale, reputation of the vendor, delivery time, cost for training or installation, and trade-in or surplus value.

The list can include as many specific criteria for a purchase as needed and can include criteria related to sustainability. Individual divisions within CPFM are allowed to define and drive their own green procurement and incorporate it into their purchasing needs.

***8.2.7 The organization seeks to design, build and operate buildings with a triple bottom-line mindset.***

CPFM seeks to design, build and operate buildings with a triple bottom-line mindset—that is, the organization pays attention not only to financial results but also to social and environmental outcomes.

**Capital Construction and Renovation**

As of 2008, all new capital construction is required to achieve U.S. Green Building Council LEED Silver certification. The university has several projects either completed or underway for which LEED certification is being sought. The university has also registered the Main Campus as a LEED Master Block, which is intended to reduce the LEED documentation burden for all LEED projects on campus.

In an effort to reduce duplication of effort and focus third-party design and engineering firms working on campus, CPFM collaborated with the UT System Office of Facilities Planning and Construction to create the Sustainable Facilities Committee (SFC). The SFC developed a vision statement to be applied to all construction on campus, both capital and renovation:

“UT Austin maintains a campus environment that exemplifies sustainable practices in planning, design, construction and operations by enhancing the lifecycle cost of ownership, environmental stewardship and human well-being.”

The SFC seeks to bring a sustainability element to the traditional approaches of building at the university and to focus on total cost of ownership over a long time-frame (100 years typical), but without locking into a particular standard for defining “green.” The SFC vision and approach are being integrated into campus standards.

Project Management & Construction Services (PMCS) is integrating renovation practices with the LEED-Commercial Interiors approach. The university has one LEED-CI Gold project, an approximately \$2 million major renovation of the Hearst Student Media building. Staff is currently working on integrating LEED concepts into campus standards for major renovation.

### **Building Operation**

As a result of demand-side energy management and conservation efforts in education and general buildings started in October 2007 and completed in January 2009, the Facilities Services department:

- replaced or repaired 420 steam traps and radiator valves in buildings for projected annual savings of 23,480 MMBTU of steam energy and 5.8 million pounds of CO<sub>2</sub>,
- retrofitted more than 183 lighting fixtures and installed 2,300 occupancy sensors for projected annual savings of 28 million kWh/year of electricity and 24 million pounds of CO<sub>2</sub>, and
- repaired or installed 5,941 plumbing fixtures for projected annual savings of 60 million gallons of water and 246,000 pounds of CO<sub>2</sub>.

Significant opportunities exist in the building operations area to reduce energy usage in buildings.

### ***8.2.8 The organization seeks to monitor energy consumption, efficiency and provide campus awareness***

#### **Plant Efficiency**

The University of Texas at Austin has experienced steady growth through the past decade, both in infrastructure and energy demands. Main campus’ needs for electricity, chilled water, and heating are met through the on-campus Hal C. Weaver Power Plant. Despite the growing energy demands, the plant has maintained declining yearly fuel usage due to persistent efficiency gains that have saved the university millions of dollars in fuel costs and prevented the release of hundreds of thousands of tons of CO<sub>2</sub>. In 2010 plant efficiency improvements resulted in the total campus annual fuel usage being equal to 1977 levels while the campus added 9 million square feet over the same time period.

#### **Energy Monitoring**

UEM has an automated system for campus energy monitoring at the building level. Energy variables such electricity kWh, chilled water ton-hours, steam pounds, and domestic water gallons are monitored by a complex PLC (programmable logic controller) network built around campus buildings. Energy meter data is transferred over to a central computer which collects data and calculates rates for the different type of energies. An energy bill is then sent to the

campus customer once meter data validation has been performed. Implementation of this automated process has given UEM the ability to speed up the billing process through a more up-to-date data collection and analysis system and it provides customers with greater awareness of their consumption and costs.

### **Campus Awareness**

One purpose of the CPFM Office of Sustainability is to promote the many existing sustainability efforts on campus, including the energy conservation efforts of the UEM, the demand-side energy conservation efforts of Facilities Services (Section 8.2.7), and the LEED certified renovations done by PMCS. This is accomplished through media outreach, the office web site, special events, and collaboration with various academic, student, and operational groups on campus, including building/office "Green Teams."

### **8.3 Student Engagement**

The Campus Environmental Center (CEC) hires student staff to manage the Trash to Treasure campus garage sale and carry out a variety of student-focused sustainability projects. Sponsored by CPFM, the organization represents the dual interest of the student body and University Operations in support of a more sustainable campus. CEC is integral to promoting the recycling efforts of Facilities Services and also works closely with the Office of Sustainability to implement a variety of campus sustainability projects such as the annual Sustainability Week in the fall.

Logistically, CPFM is uniquely positioned to support the CEC in reducing the university's environmental impact and promoting environmental stewardship within the student body. The Trash to Treasure program diverts more than 40 tons of useable household goods from the landfill each year back into the hands of students on campus. CEC also manages the Orange Bike Project, a bike loan and education program with a small repair and distribution shop, and a new community garden.

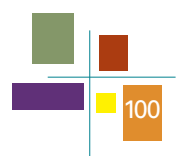
### **8.4 The organization seeks opportunities for high profile sustainability projects**

#### **Solar Installations**

CPFM has recently received two grants for solar photo-voltaic (PV) projects from the State Energy Conservation Office (SECO). Both projects are managed by CPFM personnel.

The first grant is for a nearly \$2 million installation at PRC of two separate arrays of solar panels. One array will be installed over a newly constructed carport. This system will be able to produce 27,000 kilowatt-hours of renewable energy per year. The second will be a ground mounted array of solar panels that will be able to produce 406,200 kilowatt-hours of renewable energy per year. The projects are scheduled to be completed at the end of summer 2011.

The second grant is approximately \$125,000 for an installation on the top level of the Manor Parking Garage on the Main Campus. The SECO grant is being matched at greater than 1:1 by the university Parking and Transportation Services division. The project is still in the early design stages. The installation will be visible from Interstate 35 and the UT Club dining area in the east side of the football stadium. Funding is currently being sought for another solar thermal installation on top of the new College of Natural Sciences Norman Hackerman Building.



While these solar installations will provide a fraction of the total campus energy needs, both will be highly visible projects and raise the profile of the university's interest in renewable energy generation technologies.

### Campus and Community Outreach

The Office of Sustainability has a communication plan that includes signature events and project promotion at least twice a semester. The office highlights sustainability activities with relevance to both operations and academics/research.

An example of a highly-visible activity initiated by the office is the collaboration among the Athletic Department, Facilities Services Recycling and Sustainability unit, and CEC to pilot "tailgate" recycling. Athletics has actively recycled inside the football stadium for almost ten years, but only recently collaborated with CPFM staff to pilot recycling in the tailgating areas around the stadium. Even though the pilot program only engaged about 25% of the total area used for tailgating, it was highly visible to a new audience. After five of seven home games, repeat tailgaters were anticipating the recycling crews. The pilot program used volunteers in order to minimize extra duties falling on existing staff managing trash collection and disposal. The program is expected to expand next season.

## ***8.5 Assessment methods and tools are in place to measure return-on-investment and viability of sustainability efforts and programs.***

### ***8.5.1 The organization analyzes financial viability of sustainability projects***

#### **Power Plant Improvements**

UEM uses financial methods and techniques for plant growth and energy efficiency projects. The department analyzes projected savings for major plant improvements and has developed financial analysis and forecasts to demonstrate total utility plant performance. Yearly avoided costs resulting from efficiency improvements are tabulated against debt service to arrive at cumulative avoided cost.

#### **Energy Efficiency Savings and CO<sub>2</sub> Emissions**

UEM has also analyzed estimated CO<sub>2</sub> emissions avoidance represented in dollars. Past performance and forecasts show total cumulative avoided CO<sub>2</sub> costs through year 2038 at an estimated \$81 million savings. For this projection, UEM used a cost per ton of CO<sub>2</sub> of \$25.

The department has also performed an analysis of campus growth and compared fuel use with and without energy efficiency projects. As mentioned previously, efficiency projects have a direct impact on CO<sub>2</sub> emissions. In 2010 alone, the total gas consumption would have been 5.78 million MMBTU without efficiency projects which brought actual gas consumption down to 4.14 million MMBTU. A total gas savings of 1.64 million MMBTU translates into 90 thousand tons of CO<sub>2</sub> avoided for last year alone.

### ***8.5.2 Non-financial assessments methods and tools***

The university is in the early stages of developing non-financial assessment methods and tools to evaluate the return on investment and viability of sustainability efforts. Clearly some operational efforts, not just sustainability related, have value beyond simple fiscal calculations, such as enhancement of the institution's reputation or

meeting customer and student expectations. Many sustainability efforts such as plastic recycling still rely heavily on this intrinsic value.

Currently, the President's Sustainability Steering Committee (PSSC) is the expected origin of assessment of viability for sustainability efforts that are campus-wide in scope and affect both operational and academic missions. The PSSC reviews any fiscal data available, but will not rely solely on financial returns. See Section 8.6 for more details about the PSSC.

As initiatives like the STARS tool are refined and used by an increasing number of peer institutions, the PSSC and other operational and academic units are expected to use STARS as both a benchmarking and internal assessment tool. Use of STARS already has resulted in the university receiving a Silver rating in January 2011.

## ***8.6 The organization collaborates with academics in support of university sustainability signature courses.***

### **Curricula Development**

Prior to 2010, staff of CPFM was periodically asked to collaborate with individual academics on scoping research projects for students. At the request of a professor teaching a freshman Signature course in the fall of 2010, CPFM engaged in a division wide collaboration of potential research projects ranging in expected difficulty, time commitment, skill sets and value to CPFM. This listing of projects was very helpful to the requesting professor and has been used by the Office of Sustainability through subsequent semesters.

### **Research Support**

The Office of Sustainability is spear-heading a new pilot program called the Green Labs Initiative (Section 8.2.5), targeting faculty who are principal investigators or who manage lab environments with high energy and resource demands.

The grant funded solar photo-voltaic installation on a parking garage on the Main Campus (Section 8.4) is a collaboration with an engineering professor who intends to use several bays of the installation to enable students to test various solar technologies in real world application, including several types of solar medium not yet tested outside of the university lab.

### **President's Sustainability Steering Committee (PSSC)**

Initially formed in 2007 and re-chartered in 2009, the PSSC is co-chaired by the vice president of University Operations and the dean of the School of Architecture. Membership is about 50% faculty, 15% students, and 35% operational staff, including auxiliary units such as Athletics. Each of the two sub-Committees, Academics and Operations, has a similar proportion of representation. All members of the PSSC collaborate in pursuit of improving university sustainability.

## ***8.7 Sustainability goals and initiatives operate at a level that is commensurate or superior to programs at like universities across the country.***

The university acknowledges that sustainability goals and initiatives were not a priority as recently as 2005, with the notable exceptions of deep commitment to energy efficiency upgrades in the central power plant initiated in the mid 1990s.

The university has participated in the Sustainable Endowments Institute's (SEI) Green Report Card since 2004. Initially, student volunteers completed the survey, and the university received a C- grade. In 2010, the survey was completed by a group of staff as an institutionally supported project, and the university received a score of B+. While the SEI survey has drawbacks in being used as a means to compare universities' sustainability goals and initiatives, it is commonly used as such. The Office of Sustainability believes continued participation is valuable and is working with other institutions on improving the survey method.

The emerging tool for measuring and comparing sustainability in higher education is the AASHE STARS system. The university was the only Texas research institution to participate in the STARS pilot program and is a charter member of the STARS 1.0 effort. Receiving a Silver rating in January 2011 demonstrated that the campus is operating at a level commensurate with peer institutions in the university's pursuit of sustainability.







