

# Facilities Management Evaluation Program



## Facilities Services Department

April 15-20, 2018

Final Report



The Facilities Management Evaluation Program is a service of  
APPA: Leadership in Educational Facilities

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1643 Prince Street  
Alexandria, VA 22314-2818

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*The appraisal of the institution is made in relationship to the criteria and guidelines of APPA's Facilities Management Evaluation Program (FMEP). The evaluation report comments on the strengths of the institution and, when appropriate, offers suggestions and recommendations for improvements of performance. The report constitutes no endorsement or denial of endorsement, of the institution by APPA or by the members of the evaluation team. This document was created for the exclusive use of the institution named. All contents are confidential.*

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# Overview

This document serves as the APPA Facilities Management Evaluation Program (FMEP) report for the University of California Berkeley, Facilities Services (FS) Department. Associate Vice Chancellor Sally McGarrahan leads the Facilities Services Department. The Facilities Services Department is a division under the Vice Chancellor, Administration, Marc Fisher.

## **About the University of California Berkeley<sup>1</sup>**

One of Abraham Lincoln's lasting legacies — using land proceeds to establish new schools — gave life to our nation's educational system. On March 23, 1868, the University of California was born. And Berkeley, its first campus, is today the most distinguished public university in the history of higher education.

As the founding campus of the University of California, UC Berkeley remains a leader in education, research, and public service, ranking among the top research universities worldwide. Berkeley offers more than 270 degree programs in 170 academic departments in 14 schools and colleges, providing unmatched opportunities for students and faculty to advance knowledge and to serve California, the nation, and the world. Throughout 2018, UC Berkeley will celebrate 150 years of light — and project that light forward for another 150 years.

## *The Campus<sup>2</sup>*

The Berkeley campus of the University of California stretches from the center of the city eastward into a range of steep hills and commands a magnificent view of San Francisco and the Golden Gate. The overall area of the campus is 1,232 acres, though the main campus, with its park-like atmosphere and many academic buildings, is on the lower 178 acres. Much of the rugged upper hill area is still undeveloped.

The Berkeley campus was under the direct supervision of the president and other university-wide officers until 1952. After that time, direction of the campus became the responsibility of its chancellor.

The faculty is one of the most distinguished in America. A total of 18 Nobel laureates have been associated with the Berkeley campus, and the faculty currently includes eight Nobel Prize winners.

It was on this campus in 1930 that the late Ernest O. Lawrence, then professor of physics and the university's first Nobel Prize recipient, invented the cyclotron, first of a succession of atom-smashers. Since then, the laboratory that bears his name has maintained world

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<sup>1</sup> Berkeley150 Charter Day: A University is Born.

<sup>2</sup> Berkeley Historical Overview.

leadership in fundamental nuclear physics research, while huge and complex instruments and associated buildings have blossomed on its hilltop site.

Many other individuals and groups at Berkeley have distinguished themselves in research in various fields.

### *Campus Architecture*

The campus has had several plans to guide its physical development over its many years of existence. After two such plans, an international competition was underwritten by Mrs. Phoebe Apperson Hearst. It was won by Paris architect, Emile Bénard, who devised a monumental scheme reflecting the grand, formal scale and architectural classicism of the Beaux Arts School. This was adopted by the Regents in 1900.

John Galen Howard was chosen supervising architect to modify the Bénard plan to fit the precise needs of the campus. From 1903 to 1924, Howard designed 20 buildings that survived as the core of the campus.

The campus' two best-known landmarks, Sather Tower (popularly known as the Campanile) and Sather Gate, were designed by Howard. Modeled after the famous tower of Venice, the Campanile is 307 feet tall and visible over much of the Bay Area. It contains chimes on which regular concerts are played, an observation platform, and four large clock faces. Both monuments were gifts of Mrs. Jane K. Sather.

One feature of the physical planning for the campus is the grouping of related teaching departments and research units in clusters of buildings, mainly for the convenience of academic personnel. Thus, at the center of the campus are the libraries, humanities, and the social sciences. From the Telegraph Avenue entrance down to Oxford Street are administration and student activities, including athletics. Following clockwise around the campus map are agriculture and the life sciences, engineering and earth sciences, mathematical and physical sciences, and design, music, and the arts.

### *The Challenge of State Funding*

State support for Berkeley has plummeted in recent years, placing California's world-renowned system of public higher education at risk. Facilities that support the Berkeley campus excellence are aging and the deferred maintenance backlog increases as time goes by. With enrollment growth, additional space is needed. With changes in pedagogy and advances in technology, the campus space needs to be modernized to support a world-renowned research university. Without an infusion of additional funding, the ability to fully implement the campus capital program is uncertain.

# Introduction

We begin this introduction with important campus contextual observations. These conditions provide an essential perspective for understanding the scale of the facilities management challenges. The convergence of a number of cumulative facilities management issues in their aggregate will extend the time required to effectively address the campus physical plant needs. This includes both the adequacy of funding for the operations and maintenance of campus facilities and infrastructure, and the capital requirements for safety, facility renewal, and deferred maintenance.

The background conditions observed by the APPA review team include:

- Campus leadership changes and budgetary fluctuations over the last few years caused significant organizational instability and uncertainty, making it difficult for Facilities Services to gain traction on many operations and maintenance needs.
- As for the average age in the department, many building components have exceeded their first life-cycle stage and consequently the campus has very large deferred maintenance and capital renewal requirements with a very high facilities condition index (FCI)<sup>3</sup>. Building automation systems, age, functional obsolescence, and operating inefficiency are financial and operations liabilities.
- Campus facility and infrastructure capital needs, including seismic retrofit requirements, remain a campus priority and the magnitude of capital necessary for this is significantly hampering the campus' ability to maintain and advance academic and research program improvements and building renewal requirements. Many capital project needs contained in the campus current financial plan (six-year plan) are in either new or existing state-supportable space without an identified fund source.
- The Campus Utility Infrastructure Master Plan 2014 identified numerous immediate needs for testing and inspection, operations and maintenance activities, and capital improvements that have not been funded and addressed. Steam and condensate system repair needs were especially noticeable during our campus visit.
- In Facilities Services, staffing shortages in core service functions and budget cuts and competing needs for operating dollars have had a negative impact on the quality of day-to-day core services.
- The distance of Facilities Services shops and offices from campus introduces significant productivity penalties.

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One of the most powerful types of benchmark data that can be derived from a Facilities Condition Assessment (FCA) is the Facility Condition Index (FCI). It is a ratio used to measure the relative condition of a building portfolio. It is calculated by dividing the cost of identified deficiencies by the Current Replacement Value (CRV).

<sup>3</sup> ACCEPTED FCI GUIDELINES. Rating Scale: Good-0-5%-- Fair-6-10%-- Poor-11% >

- Skilled trades and service worker union agreements can present challenges to efficient operations.
- Twenty-first century workforce requirements for succession planning, leadership development, and cross training has triggered a number of concerns about critical positions that are overly dependent on a single individual.
- UC Berkeley and Bay Area costs and economic factors have challenging implications for recruitment and retention of a Facilities Services workforce and the overall cost of business.

## **Facilities Services Department**

Facilities Services is comprised of the following units:

- Asset Management
- Business Operations
- Cal Zero Waste Services
- Custodial Services
- Customer Service Center
- Engineering and Technical Services
- Environmental Services
- Grounds Operation
- Inspection Services
- Maintenance Operations
- People's Park

## **Facilities Services Vision and Mission**

**Vision:** *To be the leading provider of facilities services in support of a world-class, culturally diverse campus that is conducive to excellence in learning and research; provides a pleasant, safe and rewarding work environment for staff, students and faculty; and is a world leader in environmental sustainability.*

**Mission:** *To operate and maintain facilities to a world-class standard while providing exceptional customer service in support of the teaching, research, and public service mission of the University of California.*

### ***Workforce***

Currently there are 482 employees in Facilities Services. Of these employees, 386 are represented by a collective bargaining unit. Of the represented employees, 12 hold administrative positions, 6 are in technical positions, 115 are in trades, and 253 are service employees; 211 of the 252 service employees are custodians.

There are 96 nonrepresented employees. Of these, 25 are managers and senior professionals, 15 are supervisors, 42 are professional employees, and 14 are student

assistants. Professional employees include financial analysts, accountants, and facilities management specialists.

### ***Operations and Maintenance***

Facilities Services primary mission is the operation and maintenance of general educational buildings and infrastructure and associated grounds and landscape services. The core campus consists of 178 acres. FS is also responsible for the Hill Campus and for fire mitigation and weed control of the surrounding property.

Facilities Services is responsible for operating and maintaining 325 structures comprising approximately 10.8-million gross square feet of general and educational funded space. Additionally, FS provides services to nongeneral funded buildings through memorandums of understanding (MOU) arrangements.

### ***Regulatory Environment***

Facilities Services operates in a highly regulated environment. All aspects of work are affected by regulations, code, policy, or the law in some way. There are many requirements under system-wide university policy that can stipulate how some work is performed.

### ***Capital Renewal and Deferred Maintenance***

The rough estimate of costs to address the currently known capital renewal/deferred (CR/DM) maintenance obligation on the campus is at least \$1 billion. The cost for elective capital needs to modernize the campus, such as renovations to support current research and teaching methods, is unknown.

The Seismic Safety Policy was revised in May 2017 and established December 31, 2030, as the end-of-use date for UC-owned facilities that do not meet seismic standards. UC Berkeley has identified projects in the ten-year capital plan that would address seismically compromised facilities.

### ***The APPA FMEP Team***

This report reflects the observations and recommendations of a team of university facility professionals who collectively have extensive experience in managing university facility management programs, capital project programs, and in setting priorities and triaging resources among competing demands to ensure delivery of a variety of complex facilities services and building projects. The review team visited UC Berkeley from April 15 through April 20, 2018. The major focus of this report is the evaluation and assessment of the UC Berkeley Facilities Services Department. The review was commissioned through the Facilities Management Evaluation Program of APPA: Leadership in Educational Facilities.

The judgment and recommendations included in this report are based on the review team members' many years of experience combined with extensive interviews, detailed document reviews, and studied comparisons. Members of the review team were selected to



comprise higher education facility managers who are experienced in managing complex institutions comparable in size and complexity to UC Berkeley. Members of the review team include the following individuals:

Cheryl Gomez, P.E., MBA, LEED AP  
Director of Operations  
University of Virginia

Richard W. Robben, P.E., MBA, CEFP  
Executive Director, Plant Operations  
University of Michigan, Ann Arbor - Retired  
President, True North FMC

Dean Hansen, P.E., MBA, CEFP  
Director, Facility Services  
University of Texas, Austin

Jack Hug  
Assistant Vice Chancellor, Facilities Management  
University of California, San Diego - Retired  
APPA Past President, APPA Fellow

The APPA review team conducted extensive interviews, within the Facilities Services Department and with numerous principal administrators, campus partners, and staff external to FS who constitute the major campus stakeholders and client constituency.

This review would not have been possible without the full cooperation and participation of all those who were interviewed and who freely shared their comments. All participants were especially gracious with their time and contributed significantly by offering their perspective on the successes and challenges facing the UC Berkeley Facilities Services Department. The time provided to this effort afforded the review team the opportunity to gain valuable insight into the complexities of the institution. The interview discussions helped in our understanding of the overall context of departmental relationships and service delivery. This also gave the FS participants an opportunity to articulate their successes along with the current and future challenges that the organization faces. The campus partner and customer groups were of particular importance in providing key comments and perceptions of FS services through their first-hand experience with staff and service delivery processes.

Those members of the campus community who participated in the interview process are listed in the Appendix.

## **Acknowledgments**

The APPA review team wishes to thank all those who contributed to the review. Everyone was most generous with their time and their comments. We found the site visit very well organized which allowed for efficient use of the review team's time. Special thanks are extended to all members of the Facilities Services Department leadership team. Their investment of time and attention was critical to the review success and most instrumental in ensuring a thorough review.

We also thank and acknowledge the participation of so many hardworking women and men in the Facilities Management Department who provided their time and insights and who demonstrated a genuine interest in the review process.

We would like to express our special gratitude to Sally McGarrahan, associate vice chancellor, Facilities Services, for her exceptional welcoming hospitality and participation which was graciously extended to the review team the entire time we were on campus. We are grateful also to Sally for providing the self-evaluation report and the institutional and the FS Department profiles and who graciously provided efficient responses to a multitude of requirements in preparation for the review prior to our campus visit and who was most patient and efficient in accommodating our requests for additional information.

Cory Soza provided an indispensable contribution, serving as our principal contact for preparing and obtaining materials and documents in advance of our campus visit and who was our scheduler and meeting coordinator during our site visit. Cory was most patient and efficient in accommodating our requests for additional information and our need to change or add interviews to our schedule. Cory did a superb job of arranging for team members to get to the various appointment destinations on time, and she was very proficient in providing help to the team on numerous occasions.

We also thank Vice Chancellor, Administration Marc Fisher for taking valuable time from his schedule to meet with our review team and to attend our exit-briefing meeting on our last day on campus.

# Executive Summary

The APPA Facilities Management Evaluation Program (FMEP) framework was utilized to format this report. The seven criteria of the FMEP program provide a thoughtfully developed integrated and complementary framework. In performing a review of a complex area like Facilities Services, it is very important that the review team capture a strong sense of the organizational context and culture. Context and culture are heavily implicated in the organization's basic mission, its strategy, and goals, its means of getting the job done, its key measurements, and its remedial systems and practices. Accordingly, the FMEP framework consisting of the self-evaluation and the seven criteria listed below provide essential steps and afforded the review team foundational information upon which to evaluate our findings and to construct conclusions and recommendations. The seven FMEP criteria utilized to guide this review are:

- Leadership
- Facilities Strategic and Operational Planning
- Customer Focus
- Assessment and Information Analysis
- Development and Management of Human Resources
- Process Management
- Performance Results

These criteria were also used to conduct the self-assessment, which was provided to the review team in advance of the campus visit. The interview schedule prepared by FS included many campus customers, stakeholders, and campus partners who were asked to share their experience and level of satisfaction with the department.

## LEADERSHIP

An important role and responsibility for department leaders is to create a work environment that is conducive to people coming to work and doing their very best. Associate Vice Chancellor Sally McGarrahan has created a positive work environment where leaders collaborate, stay mission focused, and work together to accomplish group purpose.

The Facilities Services leadership team has earned the support of many campus administrators through their collective endeavor to become proficient in the performance of their roles and responsibilities. Sally McGarrahan spends time with customers and through her example has demonstrated the importance of customer service leadership. Other members of the leadership team have followed her example with positive results. Consequently, faculty and staff have had a tolerant acceptance of the campus facility

operations and maintenance conditions, but this understanding attitude is wearing thin in particular areas where chronic facility issues persist.

A substantial investment in people is needed in order to grow organizational capabilities and capacity to keep the organization relevant. It is recommended that FS continue to recognize the strategic importance of continuously building its organizational capacity. This requires a continuous action plan to address talent management, engagement of the existing workforce, building the next generation, and continually finding ways for the divisions within the department to work better together. The workplace and workforce recommendations described in Section 5.0: Development and Management of Human Resources are considerable.

Custodial services is a leadership challenge of major scope. A comprehensive review and restructure of custodial services is recommended. Credible custodial/housekeeping professionals that are active in the educational and institutional housekeeping profession should perform this review.. The adoption of OS1<sup>4</sup> or some other recognized team cleaning system in place of the traditional zone/area cleaning approach currently being used is recommended. Team cleaning is, on average, 20 to 40 percent more efficient than traditional zone cleaning and provides a number of additional benefits, including greater consistency, higher quality, and improved accountability.

The department organization structure is a flat organizational design and the alignment and reporting lines are clearly illustrated for the members of the leadership team. Below this level, the visual presentation of the hierarchy is not easy to follow. *The lines of the organization chart*, which map how the whole is divided into working units and how each part relates to the other, does not serve as a clear and effective communications tool.

Organizational alignment and structural changes are recommended. FS does not have an active leadership developmental program or a succession plan and has not designated a deputy or second person who would be in charge if the associate vice chancellor were absent for any lengthy period. There are also a number of specialty positions that are overly dependent on a single individual, and consequently, subject the organization to operational risk.

The structural changes recommended include:

- Establish a director of Administrative Services by consolidating several existing administrative services including HR, IT, business management, and customer service.

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<sup>4</sup> ManageMen Incorporated ([www.managemen.com](http://www.managemen.com)). This program is utilized by the University of Michigan, the University of Texas at Austin and others.

- Establish a director of Operations and Maintenance with clear responsibility for all core maintenance functions. This would include the development of a centralized work management function.
- Designate a deputy to the associate vice chancellor from among one of the two newly established director positions.
- Review the asset management customer service role and responsibility and refocus this group on traditional asset management tasks.
- Address the span of responsibility of the custodial services manager and supervisor in order to bring the large number of people supervised by them in line with industry practice.

## **FACILITIES STRATEGIC AND OPERATIONAL PLANNING**

The dominating strategic theme that surfaced is a need for a “focus strategy.” Focus in this case refers to the breadth of customers and customer needs that FS serves. Now is the time to create and implement the best strategy for the organization.

The challenging operations and maintenance requirements of the built physical environment, the urgent need to improve core service levels, the scale of unfunded CR/DM needs, and the highly competitive economy and high costs in the Bay Area characterize the UC Berkeley Facilities Services Department circumstances. Simultaneously, FS must build its workforce capability and capacity to stay abreast of requirements in a fast changing facility management profession. FS is struggling to keep up with the need to provide acceptable levels of service and increasing demand for services. This reality provides unmistakable guidance for deciphering the opportunities and threats, things that matter most for Facilities Services strategy development and implementation.

Facilities Services has a serious deficiency in fundamental supporting documentation for justifying its critical resource needs. A good strategy will help bring clarity to priorities and to the allocation and deployment of limited resources. A good strategy will also help identify much needed service level improvements for maintenance, custodial, and grounds. It is recommended that FS adopt APPA service levels for each of these three core services, perform a credible workload and staffing analysis, and be aggressive in performance benchmarking and productivity improvement initiatives.

A total cost of ownership (TCO) approach for facilities development has not been adopted and practiced. Adopting a long-term stewardship approach to the planning, design, and construction of campus facilities requires a collaborative approach of all parties involved in the capital processes. TCO is based on a comprehensive perspective of the total financial and operational impacts that a facility will have on the institution from cradle to grave. This comprehensive perspective of building ownership is especially important in situations where over the years, faced with rising costs and budget constraints, institutions have tended to either underfund or fail to fund the operating costs of new facilities.

The ICAMP Program is a strategic initiative of UCOP and presents an opportunity for UC Berkeley to develop the essential tools and information to uniformly address CR/DM. The review team recommends that FS carefully examine its capability and capacity to manage all aspects of the CR/DM program and to carefully consider the resource needs required to align with the operational aspects of the ICAMP program.

The process through which FS operational units participate in the development of the construction program planning and participate in project acceptance, closeout, and commissioning<sup>5</sup> is ineffective. The most successful capital project managers in educational facilities are those who have discovered the richness of the body of institutional knowledge that lies within the operations and maintenance staffs. Commissioning, in particular, serves the needs of customers and operating staff by ensuring that facilities are built systematically to comply with campus standards of quality and serviceability.

## **CUSTOMER FOCUS**

There is a growing sense of frustration and dissatisfaction with the department's service levels, most notably in the areas of custodial services and maintenance operations. Custodial services is a major source of customer dissatisfaction. With few exceptions, customers regarded the cleanliness and material condition of campus facilities as unacceptable. Deans, in general, felt that they were spending too much of their time (and resources) on facilities issues. There is concern that these conditions will impact faculty recruitment and retention. Many examples were provided where the cleanliness and/or physical condition of the facilities failed to meet even a minimum standard for academic support. FS is generally not staffed sufficiently to deliver consistent and reliable service. Vacancies, turnover, and absenteeism, including other legitimate reasons for leave, also present significant obstacles to operational success in most functional areas.

There are numerous opportunities within FS to improve performance that are not directly tied to increased resourcing. Customers were unanimously supportive of Associate Vice Chancellor Sally McGarrahan's efforts to understand the many issues associated with facilities on campus and to improve FS service levels across the board. In general, campus customers recognized that many of these issues are a result of longstanding resourcing constraints. That said, there is a need to objectively examine current FS internal practices and processes that are within FS control in order to identify significant contributors to poor performance.

A strong cooperative relationship between FS and academic units is necessary to be successful. Communication between FS and the academic units are additional opportunities for improvement. There is a perception among academic leaders that FS could be more flexible and collaborative in problem solving. It is recommended that

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<sup>5</sup> "The Building Commissioning Process", Richard Casalt P.E., APPA *Body of Knowledge*.

Associate Vice Chancellor Sally McGarrah meet with the provost and college deans to better understand their specific concerns regarding the need for greater flexibility and collaboration when solving problems and to collaboratively develop a plan to address their concerns.

There is a need to clarify the purpose, roles, and responsibilities of the asset management program. It is recommended that FS eliminate the customer service function as a primary responsibility of the asset managers. This lack of clarity frequently translates into tension. The asset manager's efforts should be refocused on true asset management tasks, such as: maintaining accuracy of asset inventory (add/change/delete logs); managing asset documentation; establishing asset preventive maintenance (PM) requirements; determining asset criticality; assessing asset conditions; and establishing campus design standards, owner's project requirements, and prioritization of CR/DM needs.

It is recommended that FS develop and administer a comprehensive annual customer survey to measure overall levels of customer satisfaction. FS does not have a systematic process in place to identify the needs and expectations of customers or a consistent and reliable customer feedback process. Unlike the work order completion survey, the annual survey seeks to measure customer satisfaction at the 10,000-foot level and primarily from higher level campus customers such as vice chancellors, deans, directors, and chairs.

It is recommended that FS adopt the *APPA Operational Guidelines for Educational Facilities: Maintenance, Grounds, and Custodial*. The guidelines provide a clear description of what varying service levels provide, which can be used to communicate the service level to customers. Service standards are not widely publicized by FS to the campus community, and there is no method in place to measure FS performance against service level standards. These processes are essential to understanding customer expectations and managing performance in support of those expectations. Defining a realistic baseline level of service that can reliably and consistently be delivered is critical to rebuilding credibility with customers and is a fundamental first step in determining the level of resources required to raise service to acceptable levels. By using APPA and/or other nationally recognized productivity guidelines and standards as a guide, FS can objectively determine what level of service can realistically be achieved, given current staffing and resourcing levels.

## **ASSESSMENT AND INFORMATION ANALYSIS**

Facilities Services has a wide variety of administrative and management information systems in use and has large amounts of data. However, more work needs to be done to convert the data into meaningful information.

The department's implementation of MAXIMO has progressed but is far from being the automation tool that it is intended. The main purpose of the computerized maintenance management system (CMMS) MAXIMO is the automation of workflows and processes.

MAXIMO is being implemented, but FS is struggling. Not all workflows are yet developed for the work management process and the materials management process. Workflow and process development defines how the system and the flow of data will be utilized to ensure standardization (data-governance). This often, overlooked phase causes many CMMS implementation failures. The purpose of workflow and process development is to ensure repeatable standards are established, understood by all users, adhered to, and periodically audited. FS management must ensure that the necessary maintenance information needs are met and established within the MAXIMO system. Successful initiatives of this magnitude are difficult to achieve, and FS leaders need to successfully overcome substantial resistance and pushback from staff members who may be more comfortable with the status quo.

It is recommended that FS be more rigorous in its participation in the UC Facilities Management Partnership for Performance (P4P) initiative, that it restarts its active enrollment in the APPA FPI, and that it take full advantage of Sightlines facilities metrics. There is a need to develop competencies in the use of operations and maintenance performance measurement. The concept of using key performance indicators (KPIs) for operations and maintenance management, for purposes of process improvement, decision support, innovation, and continuous improvement is not adequately understood nor practiced in FS. Developing meaningful KPIs that are linked to organizational objectives is a task that has to be structured. Without a good methodology to create objectives and KPIs, it is very difficult to successfully implement the organization's continuous improvement initiatives.

## **DEVELOPMENT AND MANAGEMENT OF HUMAN RESOURCES**

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The success of an organization is directly linked to the capabilities, skills, competencies, commitment, and engagement of its employees. The FS leadership team is committed to the success of their individual teams and the FS organization. The leadership team is focused on fostering a positive, organizational culture and is working hard to overcome successive years of budget cuts, revolving door leadership, and a backlog of deferred maintenance that has pushed most of the maintenance program into a reactive, stressful mode.

A focus on increasing employee involvement and engagement in decision making is recommended. Additionally, employee recognition and publicly celebrating employees and teams for idea generation, innovation and creativity, customer satisfaction, employee productivity, and quality of work are recommended. Most individuals thrive in an organization that values teamwork, presents opportunities for individuals and teams to feel that they make a difference, and effects positive impact. This also enables people to feel that they are part of the mission of their organization.

Facilities Services is in great need of a robust training and development program. As such, staff training should be a top priority. Section 5.0: Development and Management of



Human Resources provides recommendations for a *comprehensive* training program for staff and a *focused* training and development program for managers and supervisors. Managers and supervisors could benefit greatly in FS focused training and development programs which are designed to advance FS initiatives on managing poor and nonperforming employees, increasing employee engagement, empowering decision making, improving customer service, improving productivity and quality of work, growing a culture of safety, leveraging technology, and communicating effectively with employees and others.

Some managers and supervisors, particularly in custodial services, feel unsupported by HR in holding employees accountable for work performance and attendance. These managers and supervisors feel that they do not get the support, advice, and assistance they need with all employee actions. They recognize and accept that they are responsible for managing performance but feel strongly that they need more effective collaboration between FS and HR.

It is recommended that FS conduct an employee engagement and/or climate survey to establish a baseline as well as gain insights on employee well-being, satisfaction, and motivation. Creating a highly engaged workforce is directly correlated to productivity, quality, innovation, and cost savings among other positive outcomes.

Facilities Services is in the process of increasing the number of service staff employees. Formalized onboarding plans and training programs are urgently needed to assure that new employees can be successfully launched in their work and embody the culture that FS aspires to create. How new employees are introduced into an organization is critically important to gaining commitment to the organizational culture that FS desires to create and foster. While UC Berkeley has an employee orientation program, FS could benefit from developing and implementing its own FS focused orientation and onboarding program for all new employees.

A list of recommended HR KPIs is included in Section 5.0: Development and Management of Human Resources. It is essential to develop Facilities Services HR-specific trends, metrics, goals, and strategies to understand and improve the effectiveness of existing HR programs, identify and correct emerging problems, and to innovate when and where needed to assure that the organization is recruiting and retaining talent to meet current and evolving business needs. While FS HR tracks data, it is unclear the extent to which data are collected and analyzed, targets are established, and initiatives are developed to mitigate declining performance or advance FS strategic goals. It is also unclear who is responsible for developing and implementing initiatives.

## PROCESS MANAGEMENT

It is critical that a facilities organization understand its “core competencies” in administrative processes, and operational processes, and how they relate to the mission, institution environment, and strategic goals. These core competencies are defined by APPA in its publication *Body of Knowledge* as:

- Administration
- Operations and Maintenance
- Planning Design and Construction (not an FS responsibility)
- Utilities and Energy Management

There is a need for a more coordinated and integrated effort for administration processes; various services that are generally considered internal to staff in the FS organization and essential for running the business. Operations and maintenance and utilities and energy management are operational processes that create, produce, and deliver products and services to customers. Organizational structural changes that strengthen administration processes and operational processes are recommended and described in Section 1.0: Leadership.

The scale of administrative activities in FS is enormous because of the nature of its mission, organizational size, and complexity and because of the major change initiatives that are needed.

Operational processes are facing numerous conditions that are affecting its performance, and there is a need to achieve a much more robust maintenance management core program emphasis. FS needs to progress from reactive maintenance to proactive maintenance. A more rigorous focus on the use of maintenance and operations existing resources is recommended. Recommendations 6A through 6J provide details for achieving this and include:

- Establish a director Operations and Maintenance with clear responsibility for all core maintenance functions. This would include the development of a centralized work management function.
- Take full advantage of the ICAMP Program and be aggressive in management of CR/DM projects.
- Embrace the continued implementation of MAXIMO CMMS.
- Perform maintenance staffing analysis by utilizing the APPA operational guidelines for maintenances.<sup>6</sup>
- Provide technical training based on campus facility needs and staff needs assessment.

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<sup>6</sup> APPA Operational Guidelines for Educational Facilities: Maintenance, second edition.

- Consider a zone maintenance restructure concept for the long-term effective delivery of building maintenance services to diminish its productivity losses because of the off-campus shop location.

## PERFORMANCE RESULTS

The FMEP team assessed the level of service provided for grounds, building maintenance, and custodial services grounded on the APPA trilogy, *Operational Guidelines for Educational Facilities, second edition*. The levels of service determined for each of these three areas are:

- Custodial services: APPA Level 5: Unkempt Neglect, based mostly on feedback from customers including deans and facility managers who consistently expressed deep dissatisfaction with conditions of cleanliness and sanitation. The FMEP team did not inspect buildings to perform an effective assessment and recommends that FS develop this capability. For custodial services, it is likely that service levels will vary substantially across areas of the campus.
- Grounds: APPA Level 4: Moderately Low-Level.
- Building Maintenance: APPA Level 4: Reactive Management.

FS has not developed an effective means of determining performance results for its core service areas. Today, many successful campuses have established an internal capability for assessment and for furthering an understanding of a true baseline for each of these three service lines. Service level targets for each area should be identified, including an overall “average” level of service, recognizing that these likely vary by building and grounds area.

It is recommended that FS set the long-term service level target for custodial services at an APPA Level 2: Ordinary Tidiness, which is associated with and recommended for a well-developed university campus such as UC Berkeley. The APPA FPI Survey, 2016-17, with results from more than 200 institutions, reports only two institutions at a Level 5: Unkempt Neglect, while the majority of institutions are at Level 3: Casual Inattention and Level 2: Ordinary Tidiness.

It is recommended that FS set its long-term service level target for grounds at Level 3: Casual Inattention, moderate and Level 2: Ordinary Tidiness, high-level maintenance for selected areas.

It is recommended that FS set its long-term service level target for building maintenance at Level 2: Comprehensive Stewardship.

FS is struggling in its ability to operate and maintain campus buildings and infrastructure to successfully meet institutional mission requirements. In addition, numerous examples of failing facilities were provided by the dean that are daily impacting their colleges’ ability to be successful and is becoming a source of embarrassment to the deans who host alumni

and/or donor events on campus. From these observations, the review team believes there is a significant risk that the condition of facilities will soon begin to tarnish the national reputation of UC Berkeley if this situation isn't halted and reversed. FS leadership appears to be acutely aware of these issues, and is making efforts to address and correct them, but lack the necessary resources to bring about effective change. The needed resources fall into three primary categories:

1. Operational resources to increase staffing levels in each functional area to the levels necessary to support the targeted service levels is needed. Adequate staffing levels can be determined using APPA staffing guidelines or other appropriate, nationally recognized staffing standards for the work that is being performed.
2. One-time resources to support organization and/or process improvement initiatives that will allow FS to implement industry best practices in each functional area. These one-time investments will allow FS to become more efficient and effective with the operational resources they are given.
3. Capital resources to address the growing backlog of deferred maintenance are also needed. The sizeable backlog of deferred maintenance at UC Berkeley significantly increases the day-to-day operational cost in two ways. First, it results in building components that fail more frequently and require greater effort to maintain/repair, and second, it results in a higher frequency of after-hours work to respond to unplanned facilities failures.

It is recommended that FS send key members of its leadership team, as well as its emerging leaders, to training programs for higher education facilities officers such as the APPA Institute for Facilities Management and the APPA Leadership Academy. In addition, FS should continue to encourage staff to attend conferences, and equally important, become involved in associations relevant to their specific discipline such as NACUBO, AASHE, APPA, and the IDEA Campus Energy Conference. Participation in APPA Pacific Coast regional programs is also encouraged.

# Evaluation Report and Recommendations

## 1.0 LEADERSHIP

*Senior leaders in an effective facilities organization set direction and establish customer focus, clear and visible values, and high expectations in line with institutional mission, vision, and core values. Effective facilities leaders facilitate the dialogue around larger leadership issues such as total cost of ownership (TCO), sustainability, recapitalization requirements, and facilities reinvestment. Leaders inspire the people in the organization and create an environment that stimulates personal growth. They encourage involvement, development and learning, innovation, and creativity. Leaders act as both educators and change agents.*

### **1.1 Describe how leadership roles and responsibilities and the decision-making structure are defined by the facilities department and generally understood by internal and external stakeholders.**

Organizational structure clarity and ease of understanding by internal and external constituencies can serve as an effective communication tool for understanding the organization's leadership team roles and responsibilities and decision-making structure. The current leadership team structure clearly identifies where the lines are drawn for all functions except asset management; the boundary lines, lines of authority, responsibility, and decision making for the other leadership team members are well-defined. The organization chart is current and is updated as needed. The leadership team job descriptions are current and representative of roles and responsibilities of each member. There are a number of organizational structural elements that are impacting productivity and communications both internally and externally and organizational alignment and structural changes should be considered. The changes suggested for consideration are intended to strengthen the organization focus and ability to implement a *focused strategy* (Section 2.0: Facilities Strategic and Operational Planning) and for FS to be successful in carrying out its mission.

A number of critically important administrative issues do not to get resolved timely. There is a need for a more coordinated and integrated effort for administrative services. Many important change initiatives for FS have been started but too few completed with assurance of sustaining the positive changes. The success of many of the initiatives will be determined by the success in achieving workforce cultural change. The organization is in danger of the "spring-back" effect from those who prefer the status quo and are not convinced that change is necessary. The current organization structure also increases the likelihood that a number of the new initiatives recommended that FS management has identified cannot be done in an acceptable time frame.

### *Recommendation 1A*

*As a general rule, we recommend the elimination of gaps and overlaps; the flattest possible organization structure that allows the organization to successfully carry out its mission works best. Facilities Services leadership structure is a flat organization with appropriate numbers of layers and spans of responsibility for the leadership team members. However, the review team found that the associate vice chancellor has ten direct reports. Under circumstances where a facilities organization was operating in a proactive mode this span of responsibility would not be that unusual. The APPA review team characterizes FS as an extremely reactive operations and maintenance organization. The current organization does not have a designated deputy to the associate vice chancellor and in event of her long-term absence, the organization is subject to operational risk. There are a number of other examples where key positions in FS are totally dependent on a single individual. This suggests a need to develop others for key roles and responsibilities.*

*A restructuring and consolidation of the leadership team functions is recommended. This change would include two director positions, a director of Operations and Maintenance and a director of Administrative Services. One of these two directors would be designated as the deputy to the associate vice chancellor. Both directors would report to the associate vice chancellor.*

*The director of Operations and Maintenance would have responsibility for all core maintenance and operations services including maintenance operations, engineering and technical services, asset management, and project inspection services and include a new FS work management function which is described in Section 6.0: Process Management. The development of a work management group can further the progress of several FS strategic goals and consolidate several functions reporting to the associate vice chancellor.*

*The director of Administrative Services would have responsibility for HR, business management, IT, and customer services. These functional units share many interdependencies and collectively these services represent "life-line" support services to the organization. This recommended integrated approach also has other benefits for the organization. It will reduce the number of direct reports to the associate vice chancellor, provide an opportunity for administrative staff to grow and develop competencies, and allow for cross training and backup in a number of the administrative services functions.*

*This realignment would in essence concentrate the management of the organizations building operations and maintenance processes (external products/services, process, and delivery to campus customers) under one director and would concentrate administrative processes and support services to the*

*Facilities Services internal customers under another director. Both directors would report to the associate vice chancellor of Facilities Services. Custodial, grounds, and environmental services would continue its current alignment.*

*In other parts of the organization some custodial supervisory spans of responsibility are larger than recommended practices. As a “rule of thumb” for custodial services there is one supervisor per 20 custodians FTE, one lead per ten custodians FTE. In other words, a supervisor with 20 custodians FTE would also have two lead positions. Two of the custodial supervisor’s span of responsibility exceeds these practices. One supervisor has 37 FTEs with four lead positions included. Another supervisor has 31 FTEs with two lead positions.*

*Additionally, the custodial services manager has 16 direct reports with a mix of custodial managers, custodial supervisors, custodial specialists, and custodial assistant classifications. This organizational alignment is very atypical across the higher education facilities management profession.*

*Because of its importance and its chronic and high frequency of customer complaints and employee relations challenges, it is recommended that custodial services undergo a comprehensive organizational review and restructure by a credible custodial/housekeeping professional that is active and current in the college and university custodial profession.*

*Two of the leadership team functional units “inspection services” and “asset management” have names that do not communicate clearly (intuitively) the unit’s role and responsibilities and are confusing to campus customers. These functions, roles, and responsibilities were also initially confusing to the review team members. Inspection services can be clarified by simply adding the word “project” or “capital project” to its name. The asset management function and its prescribed role and responsibility are particularly problematic both within FS and on campus. This asset management challenge is addressed in Section 3.0: Customer Focus and Section 6.0: Process Management of this report.*

## **1.2 Describe how the leadership system includes mechanisms for the leaders to conduct self-examination, receive feedback, and make improvements.**

The term “leadership system” refers to how leadership is exercised, formally and informally, throughout the organization; it is the basis for and the way key decisions are made, communicated, and carried out. It includes structures and mechanisms for decision making, two-way communication, selection and development of leaders and managers, and reinforcement of values, ethical behavior, directions, and performance expectations.<sup>7</sup>

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<sup>7</sup> The term 'Leadership System' was first introduced in the Baldrige Glossary in 1996. It was deleted in 1999. It was reintroduced in 2002.

The FS leadership team enjoys the support of the campus administration. Associate Vice Chancellor Sally McGarrahan has created a work environment where leaders collaborate, work together to accomplish the group purpose, and stay mission focused. FS has a strong leadership team who are proficient in the performance of their roles and responsibilities.

***Recommendation 1B***

***“Feedback is the breakfast of champions.” Only by completing the loop from outward action to understanding the impact of that action can anyone hope to understand his or her effect: what works, what doesn’t, and what needs to improve.***

***Even though the associate vice chancellor and leadership team members receive annual evaluations from their immediate supervisor, they do not have a mechanism to conduct self-examination and to receive personal feedback for making self-improvement for developing their respective personal proficiency. It is recommended that all directors and members of the FS management team conduct annual 360-degree type leadership performance evaluations to supplement the current annual performance evaluation in order to provide a mechanism for feedback from colleagues and co-workers.***

**1.3 Describe how the organization aligns its missions, vision, and value statements with those of the institution.**

The Facilities Services vision and mission statements are aligned with the vice chancellor, Administration, and the university. Vision and mission statements are the raw materials, which leaders use to help set direction, to structure and align the organization, and to inspire and motivate people to achieve common purpose. These statements serve as guide-rails and accountability along the long road to success.

***FS Vision***

***“To be the leading provider of physical plant operations in support of a world-class, culturally diverse campus that is conducive to excellence in learning and research; provide a pleasant, safe, and rewarding work environment for staff, students, faculty; and is a world leader in environmental sustainability.”***

***FS Mission***

***“To operate and maintain facilities to a world-class standard while providing exceptional customer service in support of the teaching, research, and public service mission of the University of California.”***

The review team did not see the Facilities Services core principles and values. Although the self-evaluation referred to the Berkeley Principles of Community, an employee handbook, a Facilities Services Code of Conduct, and Berkeley’s Operating Principles.



### *Recommendation 1C*

*Mission, vision, and values are the raw materials with which leaders use to help set direction, to structure and align the organization, and to inspire and motivate people to achieve group purpose. That is why every organization needs a mission, vision, and values statement. These statements serve as guides and accountabilities along the long road to success.*

*When it comes to core values, we find that many organizations most generally need to review and to document existing organizational values. Many organizations focus on values like honesty, integrity, and respect for the individual. Of course these are important; and they are the foundation for other values, but what really separates the winners from the losers is when core values express what leaders want it to be like to work inside the organization. Facilities Services' core values should represent the deeply held beliefs of the organization and the desired day-to-day behaviors of all employees. This could also include visible behaviors, such things as: compassion and caring, coming to work on time, an honest day's work for an honest day's pay, challenging the status quo, promoting from within, rewards for performers, and being customer focused. These examples represent meaningful organizational core values that some of the Facilities Services leadership team articulated during our review. Many of these are tangible things that people can get their arms around, and they are essential to consistently deliver value to customers and improve organizational performance.*

*There is a need to develop and communicate these statements for achieving a shared understanding beyond the leadership team levels of the organization. It is recommended that the mission, vision, and value statements be displayed at various worksites, break areas, and on the department's website. The display of mission and vision statements will serve as an additional reminder to the workforce and will reinforce the organization's purpose and direction. Displaying the mission, vision, and value statements doesn't just add voice to these documents; it endorses them as Facilities Services' policy and guiding principles. A word of caution for all those in leadership positions: empty value statements create cynical and dispirited employees, alienate customers, and undermine managerial and leadership credibility.*

- 1.4 Describe how effective the senior leadership of the department has been in establishing and sustaining internal and external communications plans that (a) educate the campus community on the facilities department's role in institution success, (b) promote customer and stakeholder feedback, and (c) reinforce the role of front-line staff in creating a positive public impression of the quality of organization services.**

The review team findings for this criterion support the self-evaluation response that in spite of FS leaders giving this a high priority, the department has struggled for a variety of reasons, some internal and some external. Without a doubt, the frequent changes in the Real Estate Division leadership, in Facilities Services, and the loss of key staff have contributed to the difficulty to communicate both internal and external.

***Recommendation 1D***

*The review team understands the difficulty in gaining traction on communications while in the midst of major leadership changes. And we applaud the work that has been done to establish internal and external communications. Yet, there remains work to be done in communicating top to bottom within the FS organization and communicating with campus customers and stakeholders on numerous services and policy. Communication will continue to be every leader's number one challenge. For example, a number of the recommendations contained in Section 3.0: Customer Focus, Section 5.0: Development and Management of Human Resources, and recommendations in Section 6.0: Process Management represent a critical part of the communication and relationship challenge. These sections of the report highlight additional opportunities for internal and external communication improvement.*

*It is recommended that FS leadership consider an internal communications audit of FS staff as a part of an employee engagement survey recommended for consideration in Section 5.0: Development and Management of Human Resources. Questions such as this could be included:*

- *My organization's leaders share information about the organization.*
- *My organization asks what I think.*
- *As it plans for the future, my organization asks for my ideas.*
- *I get important information I need to do my work.*
- *I know what my organization as a whole is trying to do.*
- *I know how well my organization is doing financially.*

**1.5 Describe how representatives of the facility department engage with key communities, both on and off campus (e.g., town and gown, agencies having jurisdiction) and contribute to the enhancement of their various communities—both personal and professional.**

Facilities Services is appropriately engaged with key external communities such as the city of Berkeley, regulatory agencies, and local utility providers. FS relationships have resulted in a number of positive and productive relationships. The campus town and gown relationships are very important, and clearly FS is engaged and doing its part.

On campus FS has worked hard to develop internal partnerships and strong working relationships with other campus service departments and various campus groups to hear their concerns and to communicate about services.

**1.6 Describe the leadership development and succession plans presently in place to ensure continuity of leadership.**

FS has a number of staff members who are eligible for retirement, and the department has already experienced the loss of valuable institutional memory in several instances. Additionally, the competitive economic conditions in the Bay Area increase the risk of key staff turnover.

Facilities Services does not have an identified leadership development plan.

*Recommendation 1E*

*FS leaders should consider action within institutional policy to mitigate the risk of vacancies in critical positions. Success in this area requires having the right people, in the right place, at the right time. In accordance with institutional policy, FS is encouraged to continue its practice to develop a workforce plan that will identify the critical positions and advance an approach for identifying and developing the right individuals into those key positions. A practical approach is recommended that allows for a total assessment of the most critical position needs of the organization and the development of a plan of action to address the needs. Also, a leadership development program specific to the facilities management profession for those in supervisory, management, and leadership positions should be pursued. Section 5.0: Development and Management of Human Resources contains additional recommendations on leadership development programs for consideration.*

**1.7 Describe how the leadership of the facilities department emphasizes the importance of, and how it engages in excellence.**

The Facilities Services leadership team is keenly aware that their example sets the tone for the department and works hard to communicate expectations. “Leadership by example” is said by FS leaders to be a primary philosophy to emphasize the importance of excellence.

*Recommendation 1F*

*FS leaders are encouraged to continue to recognize excellence through increased employee recognition programs such as an FS Award for Excellence to visibly recognize and acknowledge those who regularly deliver excellent work.*

*The term “maintenance excellence” has been around for a long time, and it means different things to different people. Universal agreement on a definition is not*

*important, but what is important is that FS staff knows what it means to them and that others working in the same facility and the same organization have a consistent definition. Even more important than a consistent definition is a common vision of what things will look like when you arrive at maintenance excellence.*

*Additionally, FS is encouraged to continue to recognize excellence and to continue to develop its standards of performance and service levels described in Section 6.0: Process Management. There is also an opportunity to incorporate excellence into the department's core values addressed in criterion 1.3 above. The foundation for this can be expressed through several observed practices including:*

- the APPA FMEP program,*
- emphasis on accountability and ownership,*
- feedback to staff to acknowledge strengths and opportunities for improvement,*
- using the word "excellence" in performance management and development programs.*
- the pay and promotion link to excellence, and*
- FM recognition of excellent performance.*

**1.8 Describe how the leadership of the facilities department promotes and ensures ethical behavior in all interactions.**

The review team observed no indication or concerns about ethical behavior within the Facilities Services Department.

***Recommendation 1G***

*FS leaders are encouraged to nurture ethical practices in all parts of the organization. When considering factors that directly influence the organization's success, leadership practices such as visibly performing ethical behavior and demonstrating the organization's professed principles and values impact the performance of every individual and establish department staff and stakeholder perceptions.*

*Criterion 1.3 above calls attention to organizational values. An important part of the leader's role and responsibility is to create a work environment that is conducive to people coming to work and doing their very best. Employee commitment to core values infuses the creation and delivery of services and guides internal and external relationships. A tenacious adherence on the part of the leadership team to the spirit and letter of organizational values is recommended.*

## 2.0 FACILITIES STRATEGIC AND OPERATIONAL PLANNING

*Strategic and operational planning consists of the overall 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 successful facilities organization anticipates many factors in its strategic planning efforts: changing customer expectations, business and partnering opportunities, technological developments, institutional master plans, programmatic needs, evolving regulatory requirements, building organizational capacity, and societal expectations, among other criteria.*

### **2.1 Describe the strategic plan that was developed for the facilities organization that includes the goals and objectives of the department.**

The FS strategic plan was last updated in 2012. The plan contains nine goals and 114 objectives. Although many of the goals of the 2012 plan may be still relevant to today's context, there is a need for FS leaders to develop a more intense and focused strategy on the things that matter most to today's institutional context. The 2012 strategic plan with its long list of goals and objectives is a common strategic mistake that is known as getting stuck in the middle. This happens when an organization tries to be all things to all constituencies and customers. The campus facility operations and maintenance requirements for improving core service levels, coupled to the CR/DM, and seismic retrofit circumstances of UC Berkeley's institutional context, provide unmistakable guidance for deciphering the things that matter most for FS strategy development.

#### ***Recommendation 2A***

*Strategy creation is about doing the right things. Strategy implementation is about doing these things right. Both sides of the equation must be aligned and managed well and for FS, a good strategy matched with outstanding implementation is its best assurance for success. Now is the time for FS leaders to create and implement the best strategy for the organization. Many of the right people are now in place to effectively begin this important process. The associate vice chancellor, the strong FS leadership team, and a new vice chancellor, Administration, and other new key campus administrators, lend stability and positive prospects for continuity in leadership and administration for the campus. This group of capable professionals seems eager to align and collaborate to achieve a deliberate plan of action that can produce positive results. Clearly, resource constraints present limitations and a good strategy development will consider what is realistic to achieve and will take this constraint into account. A good strategy will help bring clarity to priorities and to the allocation and deployment of these limited resources. A good strategy will also help identify much needed service levels (quality) for maintenance, custodial, and grounds. The levels of service for each of these "core services" are determined in large part by the resources available: financial, human, and physical resources. Determination of staffing levels, for example for*

*maintenance, custodial, and grounds, is derived mostly from a clear understanding of the quality of service that is possible with the resources provided, and the efficiency and effectiveness of the use of this resource. The review team believes that FS would benefit greatly by establishing APPA service levels for these three core services based on resource availability and a more clear determination of specific customer needs. Also, as conditions permit, higher service levels should be targeted for continuous improvement of these services for efficiency and effectiveness goals, as well as for restoring services and service frequencies that were sacrificed because of budget cuts.*

*The dominating strategic theme that surfaced during our review is a need for a “focus strategy.” Focus in this case refers to the customers and how FS delivers value in meeting customer needs.*

*A good strategy of course would include more than simply identifying service levels, but the improvement of services levels for custodial, grounds, and building maintenance is a “customer focus” strategy that should be a major consideration. FS could benefit from simplifying its strategy by taking an “outside-in” look at the organization and clearly identifying strategic factors. Strategic factors are discovered by seeing yourself as your customers and employees see you and then asking how they evaluate performance and what do they look for from FS? This will lead to a richer customer focus as well as require a more intense emphasis on other critical stakeholders in the customer service equation such as employees and campus business partners.*

It is our understanding that the FS leadership team collaboratively reviewed the 2012 strategic plan in the year 2015 and identified what goals they felt were still appropriate. The goals identified as a result of this were to:

- improve communication,
- stabilize the budget,
- improve maintenance,
- clarify recharge versus maintenance and operations,
- develop actionable data, and
- implement MAXIMO.

All of these essentially are customer focused objectives.

#### ***Recommendation 2B***

*FS would benefit from adopting a practical, coherent, and sustainable strategic process for strategy development and strategy execution. Rather than developing a laundry list of “to-do” things, it is recommended that FS focus on identifying truly strategic initiatives – the things that matter most for successfully*

*achieving the FS distinct mission. This mission clearly emphasizes a customer focused purpose in the design and delivery of operations and maintenance services.*

- 2.2 Describe the process used to develop the strategic plan, and how participation from internal and external stakeholders was sought out, the process used to gain approval of the plan by the administration, and how it was communicated to internal and external stakeholders.**

Facilities Services does not currently have an identified process for strategy development and strategy implementation. See criterion 2.1 above.

- 2.3 Describe the processes defined to ensure that strategic goals and key performance measures are understood by all, and the extent to which those goals and measures are periodically reviewed.**

The self-evaluation report stated that the FS leadership team reviews the departmental goals annually for relevance and that the goals are communicated to the individual unit managers along with KPIs. However, the review team did not see any evidence that this process is in place and that KPIs were developed for each objective and used to measure objective outcomes.

*Recommendation 2C*

*This practice should be incorporated within a more formal strategy development and strategy implementation process. The operation and maintenance context in which FS finds itself now and for the foreseeable years ahead will require many difficult decisions regarding limited resource allocation. FS management choices and priorities for resource allocation in order to carry out its primary mission (operations and maintenance and the CR/DM program, both of which are severely underfunded and likely will continue to be underfunded) will continue to be very challenging. Both of these program responsibilities require a clear and concise strategy and intensely focused strategy. FS cannot continue to try to be all things to all people on campus and must do a better job in strategically identifying the things that it can do and the things that it cannot do. Strategy for FS is as much about things that it will not do as it is about things that it will do.*

- 2.4 Describe how the institution's and the facilities' master plans incorporate and reflect principles of sustainability, TCO, and overall facilities renewal.**

The UC Berkeley Campus Master Plan is not the responsibility of Facilities Services but rather is a responsibility of Capital Strategies. FS does actively participate in the process by providing staff input to capital project committees and has an active role in reviewing

campus design standards, design and construction specifications, and plan reviews, and provides capital project construction inspection. The campus is preparing to update the long-range development plan (LRDP), but capital plans continue to reflect the campus' ongoing strategy to maintain and advance land use and development principles in a fiscally challenging economic environment.

***Recommendation 2D***

***The review team did not find that a TCO concept has been adopted and practiced. Adopting a long-term stewardship approach to the planning, design, and construction of campus facilities requires a collaborative approach of all parties involved in the capital processes. It is based on a comprehensive perspective of the total financial and operational impacts that a facility will have on the institution from cradle to grave. This comprehensive perspective of building ownership is especially important in situations where over the years, faced with rising costs and budget constraints, institutions have tended to either underfund or fail to fund the operating costs of new facilities.***

Facilities Services has a lead role in the management of the CR/DM program and has accepted responsibility and accountability for managing the ICAMP. The UC system, through the ICAMP is being proactive in taking steps to address the backlog of deferred maintenance. The resulting facility condition assessment (FCA) program methodology is designed to collect a uniform UC system-wide asset inventory and capture the condition of inspected assets. The intended outcome of the ICAMP is to incorporate a facility life cycle management planning approach into UC's subsequent capital financial plan.

***Recommendation 2E***

***We strongly recommend that FS hire a third party that specializes in FCAs. A comprehensive and consistent methodology approach to the FCA is critical for success of this initiative. The review team also recommends that FS carefully examine its capability and capacity to manage all aspects of the CR/DM program and to carefully consider the resource needs and competencies required to align with the operational aspects of the ICAMP program.***

***The FCA will capture a comprehensive capital asset inventory, identify deficiencies with the assets, associate costs for replacement or repair, assign risk or prioritization scores to the assets, and deliver a credible deferred maintenance (DM) backlog estimate and capital renewal forecast.***

***Typically, many of the high priority DM projects which can be considered maintenance and repair projects can be expedited and managed most effectively by FS because of knowledge of existing building conditions, its construction inspection capabilities, customer relationships, and the ability to effectively coordinate shutdowns and schedules to avoid and/or minimize disruption to***



*campus academic and research programs. These facility investment needs generally fall into the categories of individual building system renewals, including roofs, mechanical equipment replacements, building automation systems, and other building components. It is recommended that FS request the necessary resources to increase its organizational capabilities and capacity to implement this role and responsibility effectively.*

*Facilities Services and the campus would benefit substantially by developing the capability and capacity in the organization for understanding and developing of a credible methodology to determine in advance what a new facility and what a major renovated facility will cost to operate and maintain for the projects life expectancy. This is an appropriate role and responsibility for the revised tasking of the asset management group.*

**2.5 Describe the current strategies and processes defined to ensure continuity of functions in the event of staff turnover, contractor failure, or other unanticipated disruptions.**

Facilities Services currently does not have a Continuity of Operations Plan (COOP).

*Recommendation 2F*

*As mentioned in Section 1.0: Leadership, FS has a number of critical positions that are totally dependent on a single person. FS should conduct a review of positions considered "critical" to the operations and maintenance function and develop a plan to ensure continuity of operations for these critical functions.*

**2.6 Describe the emergency response plans that are currently in place, and how they are communicated to facility employees and the campus community as required.**

FS is an emergency support function under the campus-wide emergency response plan and participates in campus trainings for disaster preparedness and maintains an updated DOC.

*Recommendation 2G*

*Communication during utility interruptions needs to be improved according to customer interviews. Roles and responsibilities for all who are involved should be defined including utility staff, customer service in FS, and contractors and customers. One goal of this effort should be to free the utilities maintenance staff resolving the issue from complex communication responsibilities. FS leaders should meet with its various primary customers to get feedback on its effectiveness of communications during campus outages. These discussions should include a clearer understanding of the customer's needs and expectations during outages. Campus customers who participated in this review were not happy about communications and response during past outages. Surprises associated with emergency power not being available for research areas seemed*

*to be particularly problematic. Customer knowledge of which circuits in their research space are on emergency power is inadequate, and FS may want to consider specifying this issue for special communication attention with research departments. An assessment of risk of research materials would benefit all parties.*

**2.7 Describe the process and timing for a regular, periodic review of the facilities strategic plan.**

As mentioned above in criterion 2.1, there is a need for FS to develop a formal process for strategy development and strategy implementation.

**2.8 Describe the process used to develop the capital plan, addressing needs for renovation, major repairs, and/or upgrades.**

Facilities Services is responsible for creating the list of projects for inclusion in the CR/DM program, for managing the funding of the program, and for acting as informed client for the execution of those projects by Capital Projects. There is a multiyear list of projects for that program which has been incorporated into the campus' capital plan.

The Capital Renewal Program is the campus' major annual investment program to address deficiencies in campus facilities, especially building systems that are at the end of their life cycle. The program prioritizes projects that address life safety, accessibility, infrastructure performance, resource efficiency, and renewal of critical building systems (e.g., electrical, plumbing, HVAC).

The Capital Renewal Program's mission is to develop a long-term, multiyear plan for an ongoing, strategic reinvestment in the campus facilities.

<sup>8</sup>The Capital Financial Plan (CFP) presents the campus' capital plan for the next decade. The CFP focuses on the current fiscal year (2017-18) and the next five fiscal years (2018-19 to 2022-23) and represents projects in the near-term planning horizon. These six years are named the current term. Projects fall into two main categories: support for the main academic mission and non-instructional support services, such as student residences, dining services, recreational space, and parking, etc. The capital investment program combines a strong focus on reinvestment for safety, modernization, and program improvements with selective new construction. The Berkeley CFP represents an approximately \$1.7 billion need over the current term of which approximately \$1 billion has a funding plan.

Berkeley's 2017-27 CFP is based on the objectives, policies, and guidelines identified in the 2020 LRDP, which in turn, are based on the principles of excellence articulated in the

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<sup>8</sup> University of California Capital Financial Plan 2017-27 p-21.

Strategic Academic Plan (2003). The campus is preparing to update the LRDP but capital plans continue to reflect the campus' ongoing strategy to maintain and advance land use and development principles in a fiscally challenging economic environment.

Addressing safety through remediation of seismic risk continues to be a priority, along with investment in facility renewal and taking care of deferred maintenance.

*Recommendation 2H*

*The UC ICAMP provides an opportunity for FS to advance the campus FCAs in a comprehensive and consistent manner, and FS should take full advantage of this initiative. Consideration should be given to bringing in an outside firm that specializes in conducting facility condition audits for university facilities and infrastructure.*

- 2.9 Describe the processes utilized to ensure a budget is developed with input from multiple levels of staff utilizing historic expenditures, needs analyses, and with effective allocation of available resources to support the organization's goals and objectives, while seeking new and innovative measures to leverage resources.**

The FS budget development is based on historical expenditures and incorporates a "bottom-up" staff, supervisor, and manager participation. This staff engagement allows the identification of individual unit needs from those who have functional expertise and knowledge of the campus conditions. The FS business manager reviews the budget with the appropriate associate director for incorporation into the overall department budget. The final budget submittal is developed by the associate vice chancellor and the business manager. Monthly and quarterly reports are prepared by the business manager and shared with the appropriate unit associate directors and managers.

*Recommendation 2I*

*In times of budget constraints and reductions, the review team members have found it helpful to employ a zero-based budget process. The FS budget process should become a strong advocate for improving FS core services. This can be accomplished by carefully articulating the service levels that can be achieved and the financial resources required to sustain services. A critical discussion should take place about budget resources and the university administration's "tolerance for risk" of the core service levels. To a large extent, this tolerance will determine budget allocations and impact directly the quality of services that FS will be able to offer. FS can do a better job of understanding the true cost of its core services.*

- 2.10 Describe the process used to ensure that the capital planning process aligns itself with the campus master plan and the institution's strategic plan, in terms of preferences and current and future priorities/initiatives.**

Although FS does not manage the capital planning process, it does manage the CR/DM program. Program oversight is provided by the Capital Renewal Committee (CRC), which is comprised of administrators and faculty who guide program priorities. The CRC approves an annual program of projects and initiatives and is advisory to the campus Capital Projects Committee.

The campus structure of roles and responsibility for the capital planning process ensures that projects are in alignment with the institution's strategic and master plan.

Once the CRC provides initial approval, the annual plan is referred to the Capital Projects Committee for final approval, usually in June of each year.

**2.11 Describe the process used to ensure that representatives from operational units participate in the development of construction program planning and are active participants in the acceptance of completed projects and documents.**

The process which FS currently utilizes for the operational units to participate in the development of the construction program planning and to be active participants in project acceptance, closeout, and commissioning was described to the review team as only partially effective and has resulted in some significant gaps in communication between FS and Capital project management.

*Recommendation 2J*

*Although FS is in the process of implementing a centralized permit office to help provide more rigor and input in the plan review process and to better manage the intake and storage of documents, much more needs to be done. The most successful project managers in educational facilities are those who have discovered the richness of the body of institutional knowledge that lies within the operations and maintenance and utilities staffs. Institutions achieving the highest levels of success are those that have developed enabling procedures and processes that tap into operating staffs as resources for reviewing plans, developing standards, and commissioning buildings.*

*Commissioning, in particular, has served the needs of users and operating staff by ensuring that facilities are built systematically to comply with campus standards of quality and serviceability. The days of working the bugs out of new facilities for the first four seasons of operation are disappearing on those campuses where operation and maintenance staff work side-by-side with project managers.*

**2.12 Describe how leadership is building and expanding organizational capacity and capabilities.**

Expanding organizational capacity and capabilities is always challenging in a declining budget environment. FS has focused on maintaining capacity in critical service areas and in effectively utilizing existing resources. This FMEP process offers a unique opportunity to build and expand organizational capacity and capabilities.

*Recommendation 2K*

*It is recommended that FS continue to recognize the strategic importance of continuously building organizational capacity. This requires a continuous action plan to address talent management, engagement of the existing workforce, building the next generation, and continually finding ways for the divisions within the department to work better together. It is a stewardship responsibility to keep the organization relevant. Many of the recommendations offered in Section 5.0: Development and Management of Human Resources apply to this criterion as well.*

**2.13 Describe the practice used to ensure the workplace environment optimizes staff performance.**

The FS leadership team and department managers and supervisors have taken many steps to address the workplace environment to support staff performance; yet, there is much more that needs to be done. There are large parts of the organization whose members do not agree with management's characterization of a work environment that optimizes staff performance. Among the items most frequently mentioned during the interview process were training, having materials and equipment to do their job, the off-campus location, inadequate facilities that they work out of on campus such as custodial closets and grounds shop, communications, and performance management.

*Recommendation 2L*

*In the self-evaluation, FS has provided an impressive description of the numerous practices that it has in place to create a work environment that optimizes staff performance. The review team members know from experience that creating a work environment that is conducive to everyone coming to work and giving their best is difficult to achieve. It is recommended that FS develop a routine that provides regular and frequent feedback targeted to capture the mid-manager, supervisory, and front-line staff perspective, not just the FS leadership team perspective, on how well these practices are working.*

*FS leaders have much more to do to ensure that the workplace environment optimizes staff performance and should start with an assessment of outcomes from each of the initiatives that is reported to have already been done. Many of the findings and recommendations contained in this report are integrated and complementary to the workplace environment and its role in optimizing employee performance.*

## 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. To be successful, a facility department ensures that its customers have an understanding of standards, tasks, roles, and frequencies of services, etc.*

### 3.1 Describe the process you use to identify your customers.

It was clearly evident that FS views all students, faculty, staff, and visitors as customers, and that they understand their role in supporting the university's mission of teaching, research, and public service. Evidence was shown supporting the identification of key customers by school and awareness of the primary customer points of contact within each school. However, beyond the academic units, there are various administrative and auxiliary units who are also customers of FS, and it was not evident that these customers were as clearly identified (or engaged) as the academic units.

#### *Recommendation 3A*

*It is recommended that the department go through an organizational profile exercise for the entire campus to identify all customers who receive FS services, to include the types of services they receive, their primary points of contact (key leadership, building manager, etc.), and other related information. Having a current list of customers is vital to continuous improvement efforts and will help elevate the importance of customer service throughout FS.*

### 3.2 Describe how you identify the needs and expectations of both your internal and external customers and how you measure your success in meeting those expectations.

#### *Internal*

The review team's discussions with FS managers, supervisors, and leads indicated a high degree of trust and support for Associate Vice Chancellor Sally McGarrahan and her senior leadership team. In general, lower level leaders feel empowered and supported by senior leadership and feel that their input is welcomed and valued. FS leadership appears to routinely engage with subordinate leaders and staff to hear and resolve issues without fear of retribution. Additionally, the relationship between FS and the various labor unions that represent FS employees also appears to be respectful, without excessive animus or confrontation. With specific regard to training and safety, however, several comments throughout the week indicated that a greater focus by FS leadership is needed in these two areas.

Finally, there was no evidence that FS conducts any type of employee engagement survey to assess employee well-being and to identify potential areas of employee dissatisfaction. A formalized, periodic survey would allow FS leadership to identify trends and systemic issues affecting employee satisfaction and engagement. It also would allow FS staff to anonymously express how they feel about their jobs when they might not be comfortable doing so in a face-to-face meeting.

### *External*

The discussions that the review team had with primary customers revealed a growing sense of frustration and dissatisfaction with the service levels of FS, most notably in the areas of custodial services and maintenance operations. Several deans also noted that “inadequate facilities” was being cited by potential faculty as a reason for declining offers of employment. One dean noted, in particular, that he was “astounded on a daily basis by the absolute squalor that we expect the faculty and students to operate on this campus.” Deans, in general, felt that they were spending too much of their time (and resources) on facilities issues. Many examples were provided where the cleanliness and/or physical condition of the facilities failed to meet even a minimum standard for academic support, resulting in frequent and significant disruptions to the academic mission of the colleges and schools.

While there was acknowledgment from most interviewees that inadequate resourcing was the most significant barrier to FS ability to deliver acceptable service, ineffective management was also seen to be an issue. Lack of supervision, lack of training, lack of quality control, lack of accountability, and lack of efficient and/or effective processes were all identified as contributors to poor performance.

Communication between FS and the academic units also appears to have opportunities for improvement. Customer representatives also have the perception that “being the squeaky wheel pays off,” meaning that FS management attention seems to gravitate more toward those who complain the loudest.

A strong cooperative relationship between FS and academic units is necessary to be successful. However, some deans feel that FS could be more receptive to new ideas and/or new approaches to solving problems, although it was conceded that this wasn’t purely a one-sided issue and that “both sides could use some refreshers in cooperative problem solving.”

Service level standards don’t appear to be widely publicized by FS to the campus community. Without publicized service level standards, it is very difficult to manage customer expectations or hold staff accountable. That said, for service level standards that do get publicized, it is very important that they reasonably reflect the level of service that can be supported. It was noted by several customers that the custodial tasks and frequencies chart seems to be a closely guarded secret, and they are frustrated that FS is

reluctant to share it. However, for those customers who were finally able to obtain a copy of it, they noted that it was “a work of comedy” and didn’t reflect reality. Other customers noted that service level changes are generally not discussed with facility managers prior to implementation.

Other than anecdotal feedback (complaints, hallway conversations, meetings, etc.), there doesn’t appear to be any systematic process in place to identify the needs and/or expectations of customers and to obtain customer feedback. Additionally, there doesn’t appear to be any method in place to measure FS performance against service level standards. Both of these processes are essential to understanding customer expectations and managing performance in support of those expectations. FS has engaged with Sightlines, which will result in an annual campus-wide customer satisfaction survey. In addition, they are planning to re-implement an automated customer survey in MAXIMO to obtain more timely and tactical customer feedback, both of which will be extremely useful, but they currently lack these important data points. In addition, from a performance management perspective, while it appears that FS has a number of metrics and/or KPIs that are used to track operational performance, it was unclear to the review team from the metric descriptions whether a specified performance level was being targeted and measured for many of the metrics. Without performance goals in place and identified, it’s difficult to know from the metric whether the performance is meeting expectations or not.

Finally, it is worth noting that customers were unanimously supportive of Associate Vice Chancellor Sally McGarrahan’s efforts to understand the many issues associated with facilities on campus and to improve FS service levels across the board. In general, campus customers recognized that many of these issues are a result of longstanding resourcing constraints, staff turnover, and other factors that are beyond Sally’s immediate control.

***Recommendation 3B***

***Meet with subordinate FS leaders, particularly the trades managers and leads, to better understand their specific concerns with regard to safety and training. Collaboratively develop a plan to address their concerns.***

***Recommendation 3C***

***Develop and administer a comprehensive annual employee survey to measure levels of employee engagement and employee satisfaction. The survey should be professionally designed to understand and draw out employee perceptions about the following key focus areas: Department and workgroup leadership, strategic direction, adequacy of tools and/or equipment and processes, safety, internal communication, pay and benefits, department and workgroup cohesion, organizational climate, employee development, job satisfaction, and level of employee engagement. Appropriate demographic information must be captured as well to ensure that the results can be meaningfully analyzed and interpreted. At a minimum, the following demographic information should be captured: age***



*(range), sex, highest education level, annual salary (range), years of service with department, race and ethnic identification, organizational or functional subunit (as appropriate), whether in a supervisory role, whether planning to be working for the department in one year, and whether eligible for retirement within next two years. Employees are generally willing to participate in these surveys if they believe the results will be used by leaders to effect meaningful change. Therefore, it is imperative that FS leaders act on the survey results and communicate their ongoing efforts to the staff on a regular basis so they don't lose credibility.*

#### *Recommendation 3D*

*Objectively examine current FS internal practices and process controls to identify significant contributors to poor performance that are within FS control. A detailed examination of FS operations was beyond the scope of this review, but in general, the review team felt that there are a number of opportunities within FS to improve performance that are not directly tied to increased resourcing. In particular, better work control and scheduling for maintenance; increased focus on preventive maintenance (reallocation of resources to PMs); minimization of travel time between campus and shops/warehouse; deliberate planning/prioritization of cleaning tasks that will or will not be performed under short-staff situations and more effective quality control checks on those tasks that are performed; more effective supervision of staff with respect to productivity and accountability; ensuring day-porters and special cleaning teams have access to cleaning supplies and equipment during the day; establishment and enforcement of consistent work intake and prioritization processes; improvements to onboarding process for new employees with respect to getting badges, keys, ID numbers, etc.; streamlining of process/approvals for ordering of parts; increased availability of most needed parts in warehouse; and increased focus on fully implementing MAXIMO, particularly the time-saving, productivity enhancing features.*

#### *Recommendation 3E*

*Examine the current roles and responsibilities of the asset management program and make necessary adjustments to clarify the program's purpose and refocus its efforts on true asset management tasks. There was a considerable amount of confusion from customers regarding the customer service aspect of asset managers. In addition, when the review team asked the asset managers to describe their role and/or function, each provided a different answer, indicating that, even internally, they don't understand what their purpose is. None of the asset managers were fully aware of the roles and responsibilities that Associate Director Susan Fish, Asset Management, had listed on a document provided to the review team, which indicates further that there is a general lack of understanding. Furthermore, when the review team asked the asset managers how their role was different from that of the college and school facility*

*managers, they were unable to articulate a clear and meaningful difference. FS should consider eliminating the customer service role from asset managers and refocus their efforts on true asset management tasks, such as: maintaining accuracy of asset inventory (add/change/delete logs); managing asset documentation; establishing asset PM requirements; determining asset criticality; assessing asset condition; establishing campus design standards, owner's project requirements, etc.; and prioritizing capital renewal spending, among others.*

**Recommendation 3F**

*Clarify the roles and responsibilities of the Customer Service Center, asset managers, and trades managers and leads with regard to customer service and communicate such to campus customers. There was a significant amount of confusion (both internally and externally) regarding these roles and their respective duties and responsibilities.*

**Recommendation 3G**

*Meet with the provost and college deans to better understand their specific concerns regarding the need for greater FS flexibility and collaboration when solving problems. Collaboratively develop a plan to address their concerns.*

**Recommendation 3H**

*Using APPA and/or other nationally recognized productivity standards as a guide, objectively determine what level of service can realistically be achieved given current staffing and resourcing levels in each functional area. Work with the vice chancellor, Administration, and a representative customer group to specifically identify and prioritize what work will and will not get done. Publish the results and hold work unit leaders accountable for performance. FS currently lacks credibility with its customers. Establishing a realistic baseline level of service (and living up to it) is critical to rebuilding credibility with customers, and it is a necessary first step in determining the level of resources required in order to increase services to acceptable levels.*

**Recommendation 3I**

*Consider implementing OS1 or some other recognized team cleaning system in place of the traditional zone/area cleaning approach currently in practice. Team cleaning is, on average, 20 to 40 percent more efficient than traditional zone cleaning and provides a number of additional benefits, including greater consistency, higher quality, and improved accountability.*

**Recommendation 3J**

*Develop a rigorous and consistent customer service survey process associated with work order completion that measures levels of customer satisfaction.*

*MAXIMO is capable of sending an email with an embedded link to a brief, online survey. Answers are ranked on a scale of one to five, with one being failing and five being excellent, with a chance for specific comments at the end. The survey for work orders could include five simple questions such as these examples: (1) Did we respond to your maintenance needs in a timely manner? (2) Were we polite and courteous when responding to your request? (3) Did we understand your needs? (4) Did the completed maintenance meet your expectations of quality? (5) Did you receive good directions and accurate information in response to your request?*

#### *Recommendation 3K*

*Develop and administer (via APPA, Sightlines, or some other means) a comprehensive annual customer survey to measure overall levels of customer satisfaction. Unlike the work order completion survey recommended in 3J above, which seeks to measure customer satisfaction at the ground level and primarily from customers who initiate the work, the annual survey seeks to measure customer satisfaction at the 10,00-foot level and primarily from higher level campus customers such as vice chancellors, deans, directors, and chairs. The survey should be designed to capture the customers' overall perceptions about the quality of service provided by FS in each functional area. Quality of service is generally defined as how well the department meets customer expectations in terms of timeliness, quality of work, cost, and communication. The survey should also capture the relative importance of each functional area to your customers, which is extremely helpful when making decisions regarding the allocation of limited resources. In addition to the quality of service assessment, the survey should also capture a general assessment of building condition and cleanliness (appearance, lighting, general repair of interior spaces and furnishings, cleanliness of spaces and restrooms, availability of restroom supplies, etc.), building comfort (temperature, air quality, odors, noises, water quality, etc.), and condition of landscaping and grounds. Appropriate demographic information should be captured with this survey as well to ensure that the results can be meaningfully analyzed and interpreted. At a minimum, the survey should capture the following demographic information: type of department (administrative, academic, auxiliary, etc.), number of years on campus, leadership level (executive, senior management, middle management, admin support, etc.), primary building(s) managed and/or occupied, and site (if applicable).*

#### *Recommendation 3L*

*Develop key performance metrics to measure the customer survey responses for each divisional unit providing service on a work order and for projects. Also, develop metrics to measure work order turnaround time, backlog (including aging), number of completed work orders by FS, including preventative*

*maintenance. All these results should be regularly shared with managers and integrated into the performance evaluation process whenever possible.*

**3.3 Describe the process you use to establish the type of organizational structure and levels of service most likely required to meet customers' needs and expectations and describe the communication processes you use to share those service levels and structure.**

Overall, the department is structured and organized for their functional tasking, but it is generally not staffed sufficiently to deliver consistent and reliable service. As a result, the organization struggles to keep up with even the basic levels of service needed to meet customer expectations, and customers have largely come to expect or accept poor service levels as “normal,” with many expressing doubt regarding whether the issues in FS can ever be effectively addressed.

The review team felt that the creation of a dedicated preventive maintenance (PM) crew within engineering and technical services was a necessary (and bold) move in the face of chronically understaffed trades shops that were becoming increasingly reactive. The only way to transition from a reactive organization to a more proactive organization is by ensuring that PM orders are prioritized and accomplished ahead of reactive work orders. Given the difficulty in getting the trades shops to prioritize PM orders on their own, establishing a dedicated PM crew was viewed as a positive move for the department. As staffing levels increase, however, FS ought to reexamine the need for a dedicated PM shop and make efforts to establish a more proactive culture within the individual trades shops.

Finally, while there appears to be a good number of MOUs in place between FS and various customers for billable work, the MOUs (with few exceptions) don't appear to document the level of service that FS will provide—only the number of labor hours (FTEs) that FS will provide. In and of itself, this wouldn't necessarily be a cause for concern, as long as FS had published service level standards that could be easily referenced by customers to understand the level of service that FS normally provides; but as it stands, there doesn't appear to be any documented service level standards in place for FS. As a general rule, FS should have standard service levels established and published for each service area, which will serve as the “default” level of service. MOUs can then be established to provide the “standard” level of service to the customer, with any exceptions being documented specifically in the agreement.

***Recommendation 3M***

***Adopt recommendations 3E and 3F above.***

***Recommendation 3N***

***As staffing and resourcing levels begin to rise, focus new resources primarily on preventive maintenance efforts to increase the total percentage of work orders that are preventive versus reactive in nature.***

*Within the trades shops, develop and implement best practice work scheduling to increase the percentage of work orders that are scheduled.*

*The Maximo software has significant capability for the prioritization, planning, and scheduling of work orders. The current methods in use can be improved upon to maximize the use of the limited worker resources available to FS. It is especially important to maximize the use as new trades staff members become available and to not allow these assets to fall into current practice. To move a change process along it is important to map out new procedures, plan a roll-out effort for the skilled staff, and maximize use of MAXIMO. The addition of a work planner to the skilled trades group to drive the above process is recommended.*

***Recommendation 3O***

*Adopt recommendation 3H above.*

*Develop service level standards for each functional area and publish these to the entire campus community. Improve communication to the schools and departments on any change in service standards, service delivery, and/or organizational structure. Continue to refine and clarify what services are provided to the school for free and which ones are available to purchase for a fee.*

*It is recommended that FM consider the adoption of the APPA Operational Guidelines for Educational Facilities: Maintenance, Grounds, Custodial. These guidelines provide a clear description of what varying service levels provide, which can be used to communicate your service level to customers.*

**3.4 Describe the process that enables customers to obtain services and monitor progress or status. Describe the processes available to customers that encourage them to provide feedback on results and/or perceptions of quality and value.**

Services from the department are most often obtained by submitting a service request via email or phone to the Customer Service Center, who enters work requests into MAXIMO. The Customer Service Center routes the request to the responsible area (trades shops, custodial, grounds, etc.). The responsible area supervisor then assigns the work order to the appropriate staff for execution. Customers currently do not have access to MAXIMO to check the status of their work orders. As a result, they must contact the Customer Service Center, a regional asset manager, or a trades manager for information. There is currently no automated system for customers to check status or provide feedback on their work orders.

***Recommendation 3P***

*Adopt recommendation 3J above.*

*Implementing a periodic and random customer survey process for work orders is an excellent way of gauging customer satisfaction levels and learning about service delivery problems that you may not otherwise hear about. It is also a good vehicle for hearing positive feedback about service delivery and/or about the technicians performing the work. Subpar service or complaints present an opportunity to improve the organization, while compliments need to be shared with the entire FS staff. It is recommended that FS explore the available tools for customer work order surveys already built into MAXIMO.*

**Recommendation 3Q**

*Provide customer access to MAXIMO to allow them to electronically submit work orders, obtain status updates, and run reports without having to rely on FS staff to provide the information.*

**3.5 Describe how customer feedback is used to affect continuous improvement and innovation.**

FS is missing a major opportunity to improve customer service by not having a practical and active process for capturing and acting on customer feedback. APPA provides tools to member institutions for annual customer surveys, and Sightlines includes an annual customer survey as part of its ROPA+ service. It is important to provide the customer with regular opportunities to inform facilities management about the good, the bad, and the ugly related to the services provided to them.

**Recommendation 3R**

*Adopt recommendation 3K above.*

*Implementing a periodic customer survey is an excellent way of gauging customer satisfaction and learning about systemic service delivery problems that you may not otherwise hear about. Subpar service or systemic complaints present an opportunity to improve the organization. It is recommended that FS explore the available tools for customer surveys provided by APPA or take advantage of the annual survey included with Sightlines.*

**3.6 Describe the practice used to evaluate the extent to which both the leadership of the organization and its front-line staff meet customer needs and expectations.**

FS generally takes an informal approach to evaluating the extent to which the leadership and front-line staff are meeting customer needs and expectations. Despite the lack of formal approach, however, department leadership appears to have a good awareness of its weaknesses and what it needs to do to continue to improve. There were few available KPIs that help to measure and demonstrate success and improvement.

*Recommendation 3S*  
*Adopt recommendations 3H, 3J, and 3L above.*

## 4.0 ASSESSMENT AND INFORMATION ANALYSIS

*Assessment and information analysis describes how your organization uses information and analyses to evaluate and drive performance improvements. Of interest are the types of tools used and how the tools are used to measure and enhance organizational performance.*

### **4.1 Describe the processes that are used to identify and collect key performance indicators/benchmarking for your most critical areas. Describe the key performance measures determined to be critical to your organization.**

Facilities Services has a wide variety of management systems available for its use and operates in a data rich environment. Some of the more notable systems are listed below:

- MAXIMO CMMS: Implementation is underway. There have been troubles with implementation, but progress is being made. The department expects to use most modules of this program to manage and track maintenance activities.
- Electric and water meters are in place and condensate metering is being installed. These devices allow for greater delineation of where energy is being used and provide valuable insights for energy conservation efforts.
- The energy dashboard, available to the entire community, tracks energy usage in real time and again gives insights into energy conservation opportunities.
- The Capital Renewal Program provides a planning process that tracks deferred maintenance needs, prioritizes projects, makes the case for funding needs, and matches projects to available funding.
- ICAMP, although not yet providing data, will ultimately provide asset life expectancy and renewal cost information for the campus. This will be a valuable source of information for the capital planning process.
- SPAN Legacy CMMS reporting system is now retired but still contains data. It was used as the work order management system prior to MAXIMO.
- Legacy Financial System tracks funds accounts, expenses and balances, and provides excellent detailed reporting.
- HR trends are tracked through various systems. Areas that are tracked include attendance, training, hiring and recruiting, and disciplinary activities.
- Sightlines benchmarking program is in its first year of study. The results of the effort are expected to provide benchmark data that will become important performance metrics. How Facilities Services compares with the group of peer institutions which Sightlines tracks will be a principal method for performance reporting.
- An energy management system (EMS) is utilized to monitor building equipment and systems for efficient operations.



- Campus fire and life safety systems for regulatory compliance maintenance are closely tracked using the MAXIMO system.
- Multiple other programs are in place for administration and tracking of operational and sustainability programs

These are excellent examples of sources of raw data collection. However, raw data is not very useful in itself. Data is the lowest common element collected, and data must be refined to be beneficial. Data refinement is the process by which data become more important to the organization. The data refinement process includes data, information, knowledge, and wisdom.

Information comes into existence when the data is organized and labeled so that it becomes useful. Once information is collected and then becomes consistent, organized, and verified, it is transformed into knowledge. Knowledge helps individuals understand what is important and what must be known about a particular subject.

The next step in the refinement process is wisdom, which comes from understanding the knowledge and then making judgments concerning it. Wisdom is information- and knowledge-based management and leads to better decision making.

FS is in the early stages of collecting and organizing data into useful information. Gaps exist in the data collection. Not all workflows are yet developed or implemented, and more work is needed to implement the data organization, verification, and KPI management processes. KPIs are being developed but are not yet being used in day-to-day management.

***Recommendation 4A***

***Continue implementation of MAXIMO. Continue collection of data from other key sources. Develop workflow plans for key processes that are followed by FS shops and departments. Establish the KPIs that reflect compliance with work processes and strategic goals. Remember that KPIs must be understood by those who are using them.***

***Failure to provide adequate system training leads to data gaps, misinformation, and ultimately a chorus of “we have a nonuser-friendly system.” This refrain is always an indication of a potential training issue. Remember training must go beyond the classroom and take place on the shop floor and included in the field coaching and mentoring. Make sure that users see the benefit of capturing and reporting correct information. If you can’t tell them, chances are that you are not going to get what you need. AND, never use information as a hammer or you will receive misinformation.***

**4.2 Describe the process that is used to incorporate the results of key performance metrics into a systematic evaluation that supports improvement of key processes, decision**

**making and innovation, and achieving continuous improvement within the facilities departments. Include discussions on ROI calculations.**

As mentioned above, little information exists in a format that can be used effectively.

Our interviews suggested that most management staff members are struggling with the budget, the new system implementation, and a large breakdown and reactive maintenance effort. The review team did not find meaningful efforts to understand the data being collected.

One area of potential interest, however, is the creation of the asset managers and the collaboration with the existing shop managers that has started over the past year to collaboratively review data to help their decisions regarding equipment replacement versus repair. This is a novel approach to an issue in need of further development.

***Recommendation 4B***

***FS has not yet performed the fundamental work to align all the activities needed to determine the KPIs that are the best indicators of desired FS Department performance.***

***KPI development should be better focused and linked to the FS strategic objective. There is a good deal of foundational work on process development that needs to occur.***

**4.3 Describe the process that is used to ensure that performance measures being used are current and valid and how these align with those of peer institutions.**

Facilities Services is still in a developmental stage for identifying KPIs and benchmarking. Currently there is no consistent process of alignment with peer institutions. The UC Facilities Management P4P group has participated in the APPA FPI Survey for the past several years but UC Berkeley FS has not participated. The inaugural year of engagement with Sightlines will provide some necessary data and one platform for comparison of performance indicators and will provide an avenue for more detailed benchmarking. The FS leadership team acknowledges that there is much room for improvement and utilization of metrics.

***Recommendation 4C***

***Continue the use of Sightlines and seek out best practices among peers. In-depth benchmarking can reveal work processes that are effective and sustainable. It is recommended that FS continue its participation in the UC Facilities Management P4P and that it restart its participation in the APPA FPI Survey.***

*APPA FPIs are increasingly becoming more utilized by institutions as other third-party benchmarking efforts increase in cost.*

- 4.4 Describe the procedures used to communicate the results of the performance indicators and benchmarking to key campus decision makers and other interested stakeholders (internal and external) for the purpose of education, budgeting, and engagement. Describe the process used to validate the effectiveness of that communication process.**

Facilities Services has described the budget development procedure as follows:

- Facilities Service leadership meets with the vice chancellor, Administration, and Divisional Finance Lead (DFL) to review year-to-date results versus the forecast and the budget.
- A review of financial operations is performed from February to May during the budget season. Recharge rate analysis and submission of a proposed rate to the Budget Office occurs.
- Division and department level budgets are created and presented to the vice chancellor, Administration, and the DFL for review and submission to the Budget Office for final approval.

The review team confirms that financial reporting is well defined and information freely available within the associate vice chancellor's organization. Other procedures for communicating results include metrics and performance information that are not yet well developed; what is available is not readily shared among concerned stakeholders.

***Recommendation 4D***

*FS is currently rolling out the customer service portal of the MAXIMO CMMS. The review team fully supports this effort and considers transparency vital to stakeholder relationships. The same transparency should exist in other services provided by FS. We encourage FS to expand the availability of information with its stakeholders as appropriate to their needs.*

- 4.5 Describe the process used to ensure that hardware and software systems are effective, user-friendly, secure, reliable, and up to date. Include a description of the business continuity plan describing actions to be taken in the event of an emergency or other out-of-normal event.**

The Facilities Services Information Systems and Technology group is responsible for supporting both the software needs of FS and of Capital Planning and Construction. The CAP1 system is supported for CPC and MAXIMO for FS. It also supports integrations with BFS (PeopleSoft), HCM, directories, and purchasing. Planning is underway for integrations with the Tririga space management software and the ICAMP project. Software is kept current with new releases and patches as needed. The group maintains a local data center for the MAXIMO development environment, applications development, and EMS systems.

This center has limited battery backup and with the exception of EMS systems, does not support mission-critical operations. Systems are maintained per campus policy to meet or exceed minimum security standards.

Test and production of MAXIMO environments are located in the campus data center on both collocated facilities-owned hardware and information services and technology managed virtual machines. Database services, management, and support for major systems are provided by campus IST.

The FS Information Systems and Technology group also support the FS and CPC plan room, mapping, and geographic information system (GIS) activities. During the interview process it was reported that obstacles exist that hinder this operation. These were identified as:

- There is limited financial support, preventing progress on all projects as needed.
- There is a lack of clear priorities on where to focus limited resources.
- A lack of clear communication paths and areas of authority and/or responsibility. Example areas had to do with work order management and change management activities.

Business continuity plans exist for archiving, backup, data recovery, and ongoing operations. Although plans do not exist for replacement of hardware, the department is well equipped and supports department needs.

## 5.0 DEVELOPMENT AND MANAGEMENT OF HUMAN RESOURCES

*An organization's success depends increasingly on the knowledge, skills, innovation, creativity, and motivation of its employees and partners. The following criteria address the ways in which the facilities organization ensures a continuous learning environment and a positive and progressive workplace.*

### **5.1 Describe the process used by the department to identify and develop position responsibilities, determine competencies required, and develop job descriptions to ensure these all align with work unit and department roles and responsibilities, and that they are well understood by all members of the staff.**

For nonrepresented staff, the Berkeley Job Builder provides an excellent framework that includes defined job families and categories mapped to job standards and responsibilities that include required and preferred education, licenses, certifications, and experience. The associated Career Compass program provides an excellent framework for defining job responsibilities and goals, providing career growth pathways, and enabling constructive feedback on performance linked to responsibilities.

#### *Recommendation 5A*

*It is unclear if the Berkeley Job Builder and associated Career Compass program identify competencies required for each position. The inclusion of competencies for FS positions such as "accountable for results, teamwork, balanced decision making, develops self and others, communicates effectively, builds partnerships, creativity and innovation, critical thinking, and facilitates change" is recommended as these provide the underlying structure and foundation for individual, team, and organizational success.*

*FS indicated that the new job families and standards are for nonrepresented staff and that represented staff are subject to collective bargaining, which uses the Represented Job Description template for vacancies and reclassifications. Roughly 80 percent of the FS workforce is represented. As such, efforts to align the Represented Job Description with the Berkeley Job Builder and Career Compass program to the extent feasible would benefit FS by supporting team building and collaboration while minimizing real or perceived equity gaps between management and front-line workers.*

### **5.2 Describe employee recognition programs and practices and how they are used to encourage, recognize, and reward improved performance.**

The Berkeley Staff Appreciation and Recognition (STAR) awards are clearly aligned with the Berkeley operating principles that focus on institutional values. While the Berkeley STAR awards occur only twice a year, the FS recognition awards (noncash: certificates,

plaques, gift cards, etc., up to a value of \$75) provide immediate recognition throughout the year.

**5.3 Describe your process for setting individual goals and how they promote innovation in the department.**

Berkeley has a progressive merit-based compensation plan for nonrepresented employees that align performance outcomes with responsibilities and organizational strategic objectives. Compensation for represented employees, which constitutes roughly 80 percent of the FS workforce, is based on the collective bargaining agreement.

*Recommendation 5B*

*When administered well, a merit-based compensation plan is an excellent mechanism for financially recognizing and advancing high achievers in an organization as it rewards them for outcomes associated with creativity, innovation, teamwork, process improvement, strategic thinking, leadership (including and especially those that are independent of positional authority), and excellence.*

*It is unclear if analyses of the trends and impact of the merit-based compensation plan are being conducted. An important area for review is that of merit increases broken down by protected and unprotected classes so that potential biases can be discovered and eliminated. Calibration across work units and teams is also recommended to assure that managers are consistent in their assessments. Finally, reviewing the merit increases to assure that they are aligned with advancing FS strategic initiatives will provide positive reinforcement of FS goals.*

*Recommendation 5C*

*Most individuals thrive in an organization that values teamwork, presents opportunities for individuals and teams to feel that they make a difference and effect positive impact, and enables people to feel that they are part of the mission of their organization. As such, a focus on increasing employee involvement and engagement in decision making, as well as recognizing and publicly celebrating and recognizing employees and teams for innovation, is recommended, as these will yield positive benefits in idea generation, innovation and creativity, customer satisfaction, employee productivity, and quality of work.*

**5.4 Describe how the facilities department fosters an organizational culture that rewards cooperation, communication, and skill sharing across work units.**

The FS leadership team is committed to the success of their individual teams and the FS organization. The leadership team is focused on fostering a positive organizational culture and is working hard to overcome successive years of budget cuts, revolving door leadership, and a backlog of deferred maintenance that has pushed most of the maintenance program into a reactive, stressful mode. The FS leadership team recognizes the importance of employee training and is planning to add a training coordinator.

*Recommendation 5D*

*FS is to be commended for its decision to hire a training coordinator, as effective training programs are critically important to creating a desired culture, ensuring that its staff is well-trained and prepared to effectively, and advancing the mission of FS in its service to UC Berkeley. FS is in great need of a robust training and development program. As such, FS is encouraged to make training a top priority, including assuring that it is adequately staffing its training and development needs, which likely requires more than one training coordinator.*

*Recommendation 5E*

*At the manager and front-line supervisor level, there is less evidence that collaboration, skill sharing, resource sharing, and communication occur outside their respective teams and units, and in at least one area, managers acknowledged that they infrequently engage with peer managers in their same line of work. While this is likely the result of the prior years of revolving door leadership and budget cuts from which FS is working to recover, this silo approach to managing work is very resource intensive, precludes the sharing of resources across units, increases stress in managers, supervisors, and employees, and leads ultimately to resource hoarding, poor productivity and work quality, a lack of pride, increased costs, and poor customer service. This is an area that needs significant intervention, possibly including obtaining expert advice outside FS in developing a comprehensive, multifaceted approach for addressing this issue for the entire FS organization.*

*Recommendation 5F*

*How new employees are introduced into an organization is critically important to gaining commitment to the organizational culture that FS desires to create and foster. While Berkeley has an employee orientation program, FS could benefit from developing and implementing its own FS focused orientation and onboarding program for all new FS employees. This orientation should include comprehensive one to two day in-person sessions and training modules in which new employees learn about the FS organization, its mission and core values, and its key initiatives. It should include modules on topics that are common across a facilities organization such as safety, security, building access, sustainability, customer service, respectful workplace, work expectations, and the FS Code of Conduct.*

*Recommendation 5G*

*A 30-minute “associate vice chancellor welcome session” is highly recommended as this presents an excellent opportunity for the associate vice chancellor to meet and be introduced to new employees, and share with them the mission, values, and key initiatives of FS, thereby signaling the importance of these by the leader of the organization. It is recommended that any of the associate vice chancellor’s leadership team who have new employees hired in their areas be included in this session, further strengthening the message and commitment from the top. This welcome session could be expanded to include newly promoted employees as well so that new and advancing leaders can hear or continue to hear this messaging. The session could be scheduled to occur once or twice a month, thereby optimizing the time of the associate vice chancellor and her leadership team.*

*Recommendation 5H*

*In order to build a culture in which working across units is rewarded and valued, training is needed that focuses on team approaches to providing services, sharing resources, solving problems, and supporting each other and other units. In addition, placing a greater emphasis on rewarding teams for performance, rewarding multi-trade or service efforts, and celebrating team-based successes over individual success would begin to shift the organization toward a resource sharing organization. Focus should be on rewarding proactive actions over reactive response, innovative problem solving, exceptional customer service, and initiatives that advance effectiveness, efficiency, and excellence.*

**5.5 Describe how work performance and attendance expectations are reviewed and the process used to communicate such information to employees.**

All new employees are provided a copy of the FS Code of Conduct, which they sign affirming that they have read and understood it.

*Recommendation 5I*

*Some managers and supervisors in custodial services feel unsupported by HR in holding employees accountable for work performance and attendance. Most seem to understand the process of progressive discipline, but their real or perceived lack of support when pursuing discipline makes them highly unmotivated to take action. Some of this is possibly a result of earlier management issues within the unit. While this may be a perceived lack of support as opposed to real, the outcome is the same: supervisors and managers feel frustrated as a result of trying to take action, and employees are not being held accountable. Failure to hold poor or nonperforming employees accountable leads to low morale for co-workers and teams, work unit stress, poor work*



*productivity and quality, increased costs, and poor customer service, which are evident within some FS units.*

*While compliance with legal requirements is nonnegotiable, it appears that the campus may be unduly risk-adverse, erring on the side of caution and nonaction. Managers and supervisors feel strongly that they need more effective collaboration with Facilities Services HR to provide advice, support them in handling predeterminations, help them in determining the type and level of discipline, take their input regarding disciplinary documents, and actively support them in general with all employee actions.*

*This real or perceived need for more support of managers and supervisors by FS HR needs to be addressed.*

***Recommendation 5J***

*Managers and supervisors could benefit greatly from FS focused training and development programs that enable them to become more successful in their roles and which are designed to advance FS initiatives on managing poor and nonperforming employees, increasing employee engagement, empowering decision making, improving customer service, improving productivity and quality of work, growing a culture of safety, leveraging technology, and communicating effectively with employees and others.*

*Specific to work expectations, the development of training modules that include case studies illustrating common problems and how to manage problems such as tardiness, absenteeism, sleeping on the job, disrespectful workplace, and poor quality work would be useful.*

**5.6 Describe how career development needs are assessed, provided, and monitored.**

FS leadership understands the need for workforce development, which includes assessing individual and team strengths and weaknesses to determine how to leverage strengths and mitigate weaknesses so individuals and teams can be successful. FS leadership also understands the need for employees to have a clear understanding of career growth opportunities.

***Recommendation 5K***

*The success of an organization is directly linked to the capabilities, skills, competencies, commitment, and engagement of its employees. As such, investment in developing a comprehensive training program for FS that includes (1) training on core initiatives across the organization, (2) focused technical training for specific work units geared toward their unit and work product, and*

*(3) individualized growth and development plans for each employee is one of the most important initiatives to which FS can commit.*

*Facilities Services is in the process of increasing the number of service staff employees. While increased staffing is needed, especially in the custodial area, a formalized training program and onboarding plan are urgently needed to assure that these new employees can be successfully launched in their work and be inspired to value and embody the culture that FS aspires to create.*

*In 2018, U.S. News & World Report ranked UC Berkeley as #1 in top public schools. By FS committing to a program of education, training, and development for its employees and making this a priority and focus, it aligns and integrates FS employees' work with the mission of the institution, thereby making them feel like an integral part of the success of the university.*

**5.7 Describe the processes used by the organization, both at the institutional and departmental level, to promote organizational diversity both in its workforce and leadership.**

UC Berkeley conducts surveys and analyzes trends to understand and track progress in these areas; FS is included in the UC Berkeley Strategic Plan for Equity, Inclusion, and Diversity. FS has established a goal of having an inclusive and diverse workforce. The FS leadership team itself is more diverse than that which is seen at many other facilities management organizations in higher education.

**5.8 Describe how the organization utilizes both formal and informal assessment methods and measures to determine employee well-being, employee satisfaction, and motivation.**

FS indicated that it uses meetings with employees to assess, provide, and obtain feedback.

*Recommendation 5L*

*Creating a highly engaged workforce is directly correlated to productivity, quality, innovation, and cost savings among other positive outcomes. As such, FS should consider performing an employee climate survey to establish a baseline as well as gain insights on employee well-being, satisfaction, and motivation. When conducting the survey, FS leadership needs to be prepared to take action on areas of concern, as this will signal to employees that their input is valued and that it can and does lead to positive change in the work environment and climate. In addition, FS should plan to periodically resurvey employees to determine which initiatives have been successful, gain insight into emerging issues before they become problems, and adjust initiatives as needed to assure that progress is being made toward advancing employee engagement, well-being, morale, and satisfaction.*

**5.9 Describe the approaches used to ensure the effectiveness of recruitment programs to provide well-qualified staff and to retain high performers.**

Recruiting and retaining a well-qualified, highly engaged, and motivated staff is essential to high productivity, work quality, customer service, job satisfaction and pride, innovation and creativity, continuous process improvement, and low turnover.

*Recommendation 5M*

*It is essential to develop FS HR specific trends, metrics, goals, and strategies to understand and improve the effectiveness of existing programs, identify and correct emerging problems, and to innovate when and where needed to assure that the organization is recruiting and retaining talent to meet current and evolving business needs. While FS HR tracks data, it is unclear the extent to which data are collected and analyzed, targets are established, and initiatives are developed to mitigate declining performance or advance FS strategic goals. It is also unclear who is responsible for developing and implementing initiatives. Some of the HR related KPIs that are important for FS decision making include, but are not limited to:*

- 1. Time to Hire*
- 2. Results of Outreach and Strategic Recruitment Efforts*
- 3. Demographics*
- 4. Turnover, Absenteeism*
- 5. Productivity, Overtime*
- 6. Safety Records (OSHA)*
- 7. Training and Development Programs and Records*
- 8. Years of Service*
- 9. Climate Survey*
- 10. Performance (Nonrepresented): Demographic Trends of Evaluation Rankings and Merit Pay*
- 11. Performance (Represented): Demographic Trends of Evaluation Rankings*
- 12. Disciplines and Rewards*
- 13. Promotions: Trends*

*The importance of this recommendation cannot be overemphasized. As an example, understanding how long it takes to post, recruit, and hire new staff by specific job family and category can highlight what is slow in the process so that specific action can be taken that is targeted to eliminating bottlenecks. As another example, knowing that certification programs for custodial workers are offered in the Bay Area (City College of San Francisco), would suggest that outreach to these types of programs or graduates of these programs may yield more qualified and motivated applicants than simply posting openings. As a*

*final example of the importance of this recommendation, tracking OSHA recordable injuries, near misses, first aid cases, and lost work days, and setting specific FS short- and long-term goals with associated initiatives to improve performance would lead to decreased injuries, lost work days, and costs while signaling the importance of safety in the workplace.*

**5.10 Describe the processes used to determine appropriate staffing levels, based on identified and approved operational performance standard(s).**

How new employees are introduced into an organization is critically important to gaining commitment to the organizational culture that FS desires to create and foster. While Berkeley has an employee orientation program, FS could benefit from developing and implementing its own FS focused orientation and onboarding program for all new FS employees.

*Recommendation 5N*

*FS should develop an employee orientation program to include comprehensive one to two day in-person sessions and training modules in which new employees learn about the FS organization, its mission and core values, and its key initiatives. It should include modules on topics that are common across a facilities organization such as safety, security, building access, sustainability, customer service, respectful workplace, work expectations, and the FS Code of Conduct.*

**5.11 Describe the processes used to determine appropriate staffing levels, based on identified and approved operational performance standard(s).**

Aligning financial resources with staffing is important to managing budgets and achieving operational performance standards. While the cost per square foot at the institution may be efficient, the effectiveness of service delivery as measured by reliability of infrastructure and systems, condition of facilities and grounds, and overall support of the mission of the university is an equally if not more important measure of success. As such, organization excellence measured in terms of both efficiency and effectiveness should be the overarching goal of a facilities management organization.

*Recommendation 5O*

*FS should establish APPA service level targets for maintenance, custodial, and grounds and align staffing levels to achieve these targets. Because FS is recovering from a period of revolving door leadership and budget deficits, they may want to consider establishing incremental targets toward their desired APPA service levels to enable interim opportunities for measuring and celebrating success.*

*Recommendation 5P*

*FS may want to engage industry expert consultants, conduct benchmarking studies, and use resources such as the APPA custodial, grounds, and maintenance trilogy, Operational Guidelines for Educational Facilities: Maintenance, Grounds, Custodial, to gain a better understanding of the relationship of effort hours needed to achieve effective service delivery.*

*Recommendation 5Q*

*FS should focus on productive hours per square foot (or acre) as opposed to FTEs per square foot to assure that the appropriate staffing levels are available to achieve desired APPA service level targets.*

**5.12 Describe how the department manages and organizes its workforce to accomplish its advertised mission and objectives.**

Clarity of organizational structure is critical to avoiding gaps and overlaps in service, assuring that customers and employees alike have a clear understanding of lines of responsibility, enabling innovation and decision making and fostering communication and collaboration.

*Recommendation 5R*

*Facilities Services may want to reexamine its current organization structure and realign some functions. As noted in other sections of this report, some confusion currently exists within the customer base and within the FS organization concerning which area of the FS organization is responsible for planning, decision making, and execution of work. Some services typically provided by a facilities management organization seem to be filled by building managers working for the schools and administrative units as opposed to FS. In addition, some customers rely on who they know in FS to get work done as opposed to using established work management processes. Even some FS managers acknowledged that they get work done based on who they know within the FS organization and knowing where resources are kept.*

**5.13 Describe how the department identifies needs for improvement and measures progress in the areas of regulatory requirements, health, safety, emergency preparedness, and security. Describe the process used to train employees in these categories and how effectiveness of those training programs is ascertained.**

Securing university campuses from attacks by lone killers and radical groups intent on causing harm is becoming increasingly urgent. Universities are assuming increasing leadership in addressing climate change and providing environmental stewardship. Assuring the health, wellness, and safety of employees and students is bringing greater focus on work-life balance, well-being, and workplace safety.

*Recommendation 5S*

*FS should complete an energy and utilities master plan for its facilities and grounds that establishes short- and long-term goals for energy and water use to assure that it is on track to meet carbon, energy, water, and materials goals set by UCOP and its own institution. The master plan should identify tactics for achieving those goals and establish metrics for measuring success. In addition to responding to environmental regulatory requirements, the master plan would support long-term planning for infrastructure reliability and resilience.*

*Recommendation 5T*

*In addition to tracking and reporting on OSHA required data, FS should set its own long-term goal to make its institution “the safety university in the country” to include its own specific targets for recordable, lost work days, restricted work days, and similar metrics. In addition, FS needs expertise that can assess and address safety training needs of its staff and safety issues of its facilities and systems. For example, documentation of confined spaces and permit-required confined spaces, arc-flash labeling of electrical equipment in buildings and plants, examination of fall protection for roofs, development of lockout/tagout procedures for all equipment, review of job-specific personnel protection equipment, completion of job hazard analyses, and similar issues.*

*Recommendation 5U*

*FS’s commitment to participating in the Berkeley-wide training program on sexual harassment prevention and including it as part of the merit pay evaluation is strongly supported. Building on this concept to reward represented staff is recommended. Their training of all employees on violence prevention and response is also strongly supported.*

## 6.0 PROCESS MANAGEMENT

*Effective process management addresses how the facilities organization manages key product and service design, delivery processes, and continuous improvement. Process management includes various systems or “core competencies,” such as work management, performance standards, estimating systems, planning, design, and construction of new or renovated facilities, space management, event management, and other key processes that affect facilities functions.*

**6.1 It is critical that a facilities organization understand its core competencies and how they relate to the mission, environment, and strategic goals in areas of:**

- **Administration**
- **Operations and maintenance**
- **Planning design and construction**
- **Utilities and energy management**

**Describe how the core competencies described in criterion 6.1 contribute to the delivery of customer value, organization success, and stewardship in your organization.**

### **Administration**

In Section 1.0: Leadership, there is a recommendation to restructure the organization by forming a director, Administrative Services, with responsibility to consolidate HR, IT, business management, and customer services. A number of important administrative issues do not get resolved timely. There is a need for a more coordinated and integrated effort for administrative services. This recommendation is intended to strengthen these critical internal support services for FS staff.

### **Operations and Maintenance**

There are two distinctly severe conditions that exist at UC Berkeley that impact the performance of the Facilities Services Department. These conditions are not readily correctable by FS and greatly impact the day-to-day service delivery of the department.

The first of these conditions is the magnitude of the CR/DM needs estimated between \$600 million to \$1 billion. The consequences are continual failure of building components and equipment that are well beyond their useful life expectancy, and teaching and research program space that is functionally obsolete and inadequate. The frequency of equipment and building system breakdowns and failures divert limited resources that could be used for proactive maintenance. There has been much discussion on this issue; ICAMP is being viewed as a possible long-term solution but the reality is that the funding required to address this need effectively is not available.

The second issue is the location of the FS shops and the distance from the university campus. This imposes a significant inefficiency in the execution of work. The travel time and vehicle expense is a substantial impact on the operating budget before any wrench

time actually begins. The decision to locate the maintenance workforce so far from the campus may have been made out of necessity at the time, but has saddled FS with a built in loss of productivity that is likely overlooked in most comparative analyses.

The utilization of the MAXIMO CMMS work management system provides the framework for creating metrics and tracking improvements, but as has been noted previously in Section 4: Assessment and Information Analysis, it is still in its early stages of implementation. The flow of work requests from cradle to grave needs to be formalized and evaluated to determine the potential for efficiency improvements. Workflow diagrams were provided with the FMEP documentation, but there does not seem to be uniformity in its implementation. How FS chooses to utilize MAXIMO and its available features in the long run will ultimately drive changes to the workflow process.

Related to MAXIMO implementation is the development of work order flow process maps. How work orders are managed, what data needs to be collected, and how performance is reported are all part of work management. Work management is disjointed in FS with some areas following procedures that other areas are not. There exists an informal “underground” system for requesting work. Consistency and repeatability of results is the cornerstone of operational excellence and planning and scheduling is the foundation. This is what work management can bring to the table.

### ***Maintenance Shops***

All skilled craft and trades managers lamented over lack of staff as a reason for limited proactive maintenance activity and large corrective repair backlogs in central shops. The large deferred maintenance backlogs and age of systems also contributes to the work order backlog. Shortage of staff is universally mentioned as the reason for this discrepancy. Taking control of the workflow process is critical in an environment of resource scarcity. Planning and scheduling of work, better material flow, and work order support is needed. Based on the interviews and shop performance we would rate the shops performance as an APPA Level 4: Reactive Maintenance.

Some shop workers viewed MAXIMO as a liability and some as an asset. There is little convincing evidence that the trades maintenance staff is fully embracing the rollout and use of MAXIMO.

The review team received mixed reports from staff about how well the material store and supply system is working, suggesting that the process needs inspection for improvement. Maintenance technician productivity and wrench time is more impacted by this process than most others. Just-in-time delivery, inventory levels, ordering processes, kitting of preventive maintenance, and corrective repair work are all factors that improve efficiency. This is always a good area for continuous improvement activity.



### *Custodial Services*

Faculty, staff, and students see custodial service as severely lacking in performance and quality. The level of service provided and the attention to detail are in need of significant improvement. The current level of staffing does not appear to be in line with the scope of tasks and frequencies targeted for delivery.

The custodial group works in an area assignment. This traditional approach to service delivery given budgetary constraints, various reasons for leave, and absent employees, and high overtime costs requires a different approach. FS does not have accurate workload assignment information but the “generalized” comparisons of square footage cleaned per cleaning assignment would rate the custodial services performance as an APPA Level 5: Unkempt Neglect. Section 1.0: Leadership recommends a focused review of custodial services by an experienced and qualified professional third party.

### *Grounds and Environmental Services*

Grounds appearance is variable, with some areas showing a lack of attention while other areas clearly are showcase quality. Based on the interviews and walking inspections, we would rate the grounds maintenance service level as APPA Level 4: Moderately Low-Level with some areas maintained at a Level 3: Moderate Level.

The zero-waste program is a leader in environmental management and an excellent institutional example of a model sustainability program for the Berkeley campus and the University of California.

### *Engineering and Technical Services*

Most of the preventive maintenance activities that are being performed by FS are done by the PM and fire and life safety shops and by outside vendors. The PM shop is geared only to the climate or HVAC equipment preventive maintenance. The EMS system is being used to manage environmental conditions in buildings.

It is noted that PM is being performed as part of the Engineering and Energy Division. The PM shop size suggests that a good degree of PM is occurring. Additionally, the fire and life safety shop is performing regulatory testing of systems. The combination of these two activities is very promising. Some issues still exist; however, it is reported that central shops do not perform PM tasks, and that follow-up work orders originating from PM inspections and forwarded to the shops are seldom completed. As a rule of thumb, a minimum 40 percent of work hours should be PM related; 40 to 45 percent should result from PM referral and be planned repairs. No more than 10 percent should be called in from customers and less than 10 percent should be breakdown repair. Based on interviews and the size of the PM and fire and life safety shops, we would estimate that FS totals would be 20 to 30 percent of hours that are PM related and less than 10 percent that are PM referred. The remainder is customer and breakdown related.

## **Planning Design and Construction**

Facilities Services provides critical and essential services in taking a leadership role in the capital program for creating the list of projects for inclusion in the CR/DM program, for managing the funding of the program, and for acting as an informed client for execution of these projects by Capital Projects.

## **Utilities and Energy Management**

Energy conservation measures are identified and implemented as funding is available. Currently LED lighting retrofits are underway.

The department has recently cancelled the operating agreement for the central co-generation plant, and FS has resumed operation of the facility. This action has resulted in significant savings to the utility budget.

The deferred maintenance has also had a large impact in utilities. Underground services are in deteriorating condition. Steam, condensate, utility tunnels, storm and sanitary sewers, and domestic water are reported to be in need of near constant repair. FS also operates an electric grid, distributing power to buildings from main public utility substations.

### *Recommendation 6A*

*The development of meaningful metrics is needed to measure progress. The use of and success of FS business processes should be examined in the context of the published APPA FPI standards to ensure that an actual comparison of performance against peer institutions is possible.*

*The MAXIMO CMMS has a great deal of capability that goes far beyond simple work order management. Augmenting the CMMS to track all types of work by creating functional coding to be used in analysis is invaluable. Additionally, areas of inventory management, equipment history, reactive versus proactive maintenance, tool management, etc., are valuable data sets that should be developed into information and subsequently knowledge of the FS operation.*

### *Recommendation 6B*

*Based on employee interviews and response of FS in the APPA criteria, the review team believes that FS may not fully understand or communicate what its core competencies are. This is not to say that they don't exist, but rather that no formal evaluation has been performed to assess this area and its importance. A strategic planning process can alleviate this need when a SWOT analysis is performed as part of the process on the entire FS organization. It is also recommended that FS develop core processes, metrics and KPIs as outlined in the recommendations within Section 4.0: Assessment and Information Analysis.*

*Recommendation 6C*

*Restructuring the operations and maintenance organization as described in Section 1.0: Leadership, including the development of a work management group, can further the progress of several goals of the FS Department and consolidate several functions reporting to the associate vice chancellor. Work management would be responsible for the workflow process for all working shops. Intake and generation of work orders, maintenance of asset data, issuing of performance reports, management of work order processes, and the creation of a master schedule would be the responsibility of work management. In effect work management is a “traffic cop” operation. It is recommended that the asset manager group, the call center, PM ticket generation and tracking, work order generation, and the classification and/or prioritizing of all work order functions be consolidated into this group. Other considerations could be the addition of a planning function for multi-shop jobs.*

*Recommendation 6D*

*An approach for technical training is recommended that is needs-based and designed to address the skills actually needed by workers in the execution of their daily duties. Apprenticeship programs often exceed in scope those skills needed in building maintenance. In this approach, a needs assessment is developed based on a template that is derived in committee, with the union and supervision participating to develop the skill set needed. Each current worker can then be judged against the template, and a list of needs for each worker can be developed. A prioritized training program can then be developed using internal and external training resources to provide the training in a cost-efficient manner. These types of training programs are cost-effective. It is recommended that FS explore using of this kind of program for both technical and supervisor training.*

*Recommendation 6E*

*Consider a long-term plan to move the CR/DM construction program to the associate vice chancellor of FS. This will provide better control of the deferred maintenance program by having personnel familiar with the complexities of these construction projects in charge and better keeps the priority focus in place while not competing for resources with large, new capital developments.*

*Recommendation 6F*

*Consider labor contracts to streamline contract support in short-staff situations. Having local vendors supply skilled labor to work under FS direct supervision can make for quicker and more cost-effective outcomes. This would be easier to implement than the current plans to develop and implement agreements with local skilled trades unions.*

**Recommendation 6G**

*The purchasing process is described as too cumbersome; though there have been mixed reports on this item. It is suggested that the FS Department use material supply as a candidate process for continuous improvement program techniques. The effort can also provide a good training ground that staff can then bring to other areas of the operation for process improvement.*

**Recommendation 6H**

*The asset manager role needs to be more precisely defined in order to eliminate the confusion among both customers and FS staff as to asset manager's role, responsibility, and authority.*

**Recommendation 6I**

*Continue advocating for adequate budget and staff to support defined and/or acceptable service levels. It is important to develop a scope of services guide that is in alignment with the FS commitment to service levels, tasks and frequencies, staffing levels, and budget availability. This document should be posted on the website so that it can be referenced by the campus community. The scope of services document should be reviewed and updated as necessary during each budget cycle. It is important to clearly communicate any changes in service levels to campus administrators and customers.*

**Recommendation: 6J**

*The long view operations and maintenance solution for the UC Berkeley campus should be considered. It is recommended that a zone maintenance concept be considered. Many of the leading research campuses utilize the zone maintenance concept to improve services by being closer to the customer through locating maintenance shops consisting of multi-craft personnel in campus buildings within campus zones or areas. There are many versions of this approach and there are plenty of examples available from peer institutions if Facilities Services wants to pursue this concept.*

**6.2 Describe the processes used to establish measurements for process inputs and outputs required to achieve efficiency and effectiveness.**

This criterion is addressed in Section 4.0: Assessment and Information Analysis.

**6.3 Describe how stakeholders are involved in the development and implementation of core processes.**

Facilities Services staff members are key stakeholders in the development and implementation of core processes. Once those core processes are developed, input from

faculty and campus staff may be needed to provide buy-in or to offer guidance that may impact the campus as a whole.

*Recommendation 6K*

*FS relationships with campus customers will improve with discussion and engagement of the customer affected in any major core process changes.*

**6.4 Describe the protocol established to evaluate processes established to determine opportunities for improving efficiency and effectiveness and value to the success of the organization.**

Facilities Services does not have an established protocol to effectively evaluate processes for effectiveness and efficiency improvement.

*Recommendation 6L*

*A formal mechanism for use in evaluating core processes is recommended. This section of the report and Section 4.0: Assessment and Information Analysis identify a number of opportunities, particularly in work management, maintenance stores, and purchasing, that are candidates for process improvement.*

## 7.0 PERFORMANCE RESULTS

*The performance of a facilities organization can be assessed in a number of ways: campus appearance, customer satisfaction, employee satisfaction, effectiveness of systems operations, financial results, and supplier/business partner results. Having measurement tools in place to assess such performance is critical in an environment of continuous improvement.*

### **7.1 Describe processes in place to ensure that the appearance of the buildings and grounds is in keeping with the surrounding community as well as the desired image of the institution.**

The FMEP team assessed the level of care for grounds at APPA Level 4: Moderate Low-Level of Maintenance based on observations. While well-developed public areas such as some of the glades, the gateway, and the area around the Campanile were quite beautiful and clearly reflected a higher level of maintenance, other locations with less visibility or development ranked lower, thereby yielding the overall average assessment. Observations for the latter included the prevalence of weeds in some of the planted beds, uncontrolled invasive plants such as ivy in areas, noticeable litter in places, overgrown shrubs obstructing building signage, cracks in sidewalks and parking areas, and mulch staging piles with construction cones.

The external appearance of buildings varied from poor to excellent, likely correlated to the age of the buildings as well as the limited resources available to the institution to invest in renewal of facilities.

#### ***Recommendation 7A***

*The landscape maintenance schedule for zoned areas of grounds is currently based on a weekly cycle, which is the typical minimum frequency needed to achieve an APPA Level 3: Moderate Low Level rating. The fact that the grounds team has been able to achieve a higher level of service in some areas of campus balanced by lower levels in other areas suggests that the unit has either informally or formally established distinct service level targets for the different areas of grounds. If informal, it is recommended that these distinct service level targets be converted into formal, approved ones and documented in the GIS maps. Doing this will formalize and support the goal of assuring that the allocation and use of resources are aligned with targeted performance. It will also support the current initiative of implementing a formal quality inspection, control, and assurance program that can enable a metrics-driven approach for assessing progress toward achieving the service level targets. Finally, the development of a map that displays service level targets for different areas of grounds will provide an excellent resource for training and guiding staff in their work as well as yield an excellent communication tool to use with customers.*

*Recommendation 7B*

*Facilities Services should consider setting the long-term minimum average service level target for its grounds at an APPA Level 2: High Level of Maintenance, which is associated with and recommended for a well-developed university campus such as Berkeley, ranked by U.S. News & World Report in 2018 as the #1 top public school. While this entails the need for more resources, which are currently constrained at Berkeley, this should become a long-term goal for the institution as it recovers from its current budget deficits.*

*Recommendation 7C*

*While the reported morale of the unit is high and its absenteeism rate is low, this unit, similar to all other units, would benefit from the development of a comprehensive onboarding process for new landscape employees, including student and wage employees, to assure that they are effectively and successfully deployed. The onboarding process should include technical training, identification and elimination of barriers to productivity, orientation to work areas and customers, and related unit-specific requirements. This unit-specific onboarding process is in addition to the recommended FS orientation program described in Section 5.0: Development and Management of Human Resources of this report.*

*Recommendation 7D*

*While the unit has effectively achieved higher levels of service in some areas than the average overall assessment for grounds, this has been accomplished with limited resources, which over time may place stress on the unit or individuals within the unit. The team approach to grounds maintenance likely contributes to the reported high morale of this unit as it typically enables strong collaboration and collegiality within a unit, increases overall productivity and quality of work, and advances team-based pride. However, as recommended in other areas of this report, an employee climate survey should be conducted as it will identify strengths and problems as well as point out emerging issues that need to be addressed before they become a problem.*

*Recommendation 7E*

*Facilities Services should develop a deferred maintenance and landscape renewal plan for its grounds. This should be accomplished in concert with an update of the Berkeley landscape master plan, which dates to 2004. This will enable FS to formally document the deferred maintenance and renewal need for grounds, identify the type and amount of resources required to address the need, communicate the need in order to better compete for funding, and prioritize the allocation and use of scarce resources to manage this program.*

**7.2 Describe how the organization determines that 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.**

The FMEP team assessed custodial services at APPA Level 5: Unkempt Neglect based on feedback from customers including deans and facilities managers who consistently expressed deep dissatisfaction with the condition of the facilities. Concerns included the very poor hygienic conditions of bathrooms, the lack of soap and paper products in bathrooms, dingy and sticky floors, general buildup of dirt and debris, overflowing trash containers, lack of containers (wastebaskets), and bad odors in the buildings. It was not uncommon to hear customers question if these problems were the result of inadequate staffing, poor management (custodial staff not being held accountable as one cited example), or a combination of the two. Chronic absenteeism, and other legitimate reasons for leave is a major problem in the custodial area, with some work groups reporting it to be as high as 25 to 30 percent. This may be symptomatic of deeper problems of poor morale, stress, employee unhappiness, safety incidences, and similar issues.

Facilities Services is in the process of developing and implementing a quality inspection, control, and assurance program that will be based on APPA custodial service levels and the ISSA family of clean standards. FS requires its custodial managers and supervisors to conduct rounds with its customers and recently began requiring custodial supervisors to perform daily quality assurance inspections. FS is hiring a training coordinator.

***Recommendation 7F***

***The plan to hire a training coordinator for the custodial area is strongly supported. Because training is critically important to its goal, FS may want to consider using outside expertise, at least initially, to help launch a new training program. Technical training is needed across the board: managers and supervisors need training on APPA service levels as well as the ISSA family of clean standards and best practices and how to apply these consistently. In addition, staff needs extensive and comprehensive technical training on how to accomplish their work.***

***Recommendation 7G***

***Facilities Services may want to consider implementing the OS1 program that has been used successfully by several institutions. This program employs a comprehensive, team-based approach to cleaning that includes in-depth training of managers and staff with prescriptive approaches to cleaning and use of materials and equipment.***

***Recommendation 7H***

***FS should consider setting the long-term minimum average service level target for its custodial services at an APPA Level 2: Ordinary Tidiness, which is***



*associated with and recommended for a well-developed university campus such as Berkeley, ranked by U.S. News & World Report in 2018 as the #1 top public schools.*

*Recommendation 7I*

*The FS plan to implement a formal quality inspection, control, and assurance program is supported as it can provide a metrics-driven approach for assessing progress toward achieving the service level goal. For the quality assurance/quality control initiative, FS should considering using OS1 (or similar) methods, or alternatively, assess and implement best practices for the quality assurance/quality control programs that have been used by other institutions.*

*Recommendation 7J*

*Facilities Services should develop a comprehensive onboarding process for new custodial employees specific to this group that assures that employees are effectively and successfully deployed. The onboarding process should include technical training, identification and elimination of barriers to productivity (access to buildings and custodial closets as well as availability of supplies were cited as problems), orientation to their work areas and customers, and related unit-specific requirements. This unit-specific onboarding process is in addition to the recommended FS orientation program described in Section 5.0: Development and Management of Human Resources of this report.*

*Recommendation 7K*

*It is unclear if the FS custodial unit develops and implements project work, which is distinct and separate from standard care. Project work includes annual stripping and waxing of floors and stairs, annual or semiannual deep cleaning of bathrooms, depending on intensity of use, freshening of front entrances to buildings, window cleaning, deep cleaning of carpets and upholstery, and similar work. Adding this program or strengthening the existing program is recommended.*

*Recommendation 7L*

*The custodial area is in need of increased HR support. Please refer to recommendations in Section 5.0: Development and Management of Human Resources.*

- 7.3 Describe how the department assesses that building systems, infrastructure systems, and utility systems are maintained and operated at a level of reliability and efficiency that contributes to the successful implementation of the institution's mission and programs.**

The review team assessed maintenance operations at APPA Level 4: Reactive. FS is struggling in its ability to operate and maintain campus buildings and infrastructure to successfully meet institutional mission requirements. In addition, numerous examples of failing facilities were provided by the deans that are daily impacting their colleges' ability to be successful. Furthermore, the declining condition of facilities is also beginning to be noticed by prominent alumni and donors and is becoming a source of embarrassment to the deans who host alumni and/or donor events on campus. From these observations, the review team believes there is a significant risk that the condition of facilities will soon begin to tarnish the national reputation of UC Berkeley if it isn't halted and reversed.

Facilities Services leadership appears to be acutely aware of these issues and is making efforts to address and correct them, but the department lacks the necessary resources to bring about effective change. The needed resources fall into three primary categories:

1. Operational resources are necessary to increase staffing levels in each functional area to the levels necessary to support the targeted service levels. Adequate staffing levels can be determined by using APPA staffing guidelines or other appropriate, nationally recognized staffing standards for the work that is being performed.
2. One-time resources to support organization and/or process improvement initiatives that will allow FS to implement industry best practices in each functional area is also needed. These one-time investments will allow FS to become more efficient and effective with the operational resources they are given. On average, fully implemented best practice organizations are about 20 percent more efficient than national staffing standards.
3. Also needed are capital resources to address the growing backlog of deferred maintenance. The sizeable backlog of deferred maintenance at UC Berkeley significantly increases the day-to-day operational cost in two ways. First, it results in building components that fail more frequently and require greater effort to maintain and/or repair; and second, it results in a higher frequency of after-hours work to respond to unplanned facilities failures.

***Recommendation 7M***

***Work with the vice chancellor, Administration, to educate and inform the appropriate campus leadership on the level of risk the campus is assuming with the current condition of its facilities. Well-functioning and maintained facilities are an enabler of the campus educational and research mission. By the same token, poorly functioning and maintained facilities are seriously detrimental to this same mission. The review team feels that UC Berkeley is at a critical juncture, where the condition of its facilities and infrastructure will shortly lead to catastrophic mission failures if not immediately addressed. Deliberate planning to develop immediate, mid- and long-term strategies for addressing this risk is critical.***

- 7.4 Describe the processes established to ensure that funding resources are effectively used and are adequate to support a level of facilities maintenance that prevents the deferral of major maintenance and repairs.**

This criterion is addressed in the response to criterion 7.3 above.

- 7.5 Describe the tools used to assess whether the staff is highly motivated and productive, taking pride in the accomplishment of their duties.**

Facilities Services leadership is clearly committed to fostering a collaborative, engaged staff as demonstrated by the FS recognition program, initiated in 2017, which enables any employee to nominate a colleague for exceptional work and the emphasis that leadership places on ongoing, continuous feedback and interaction among staff, managers, and leadership.

*Recommendation 7N*

*An employee climate survey needs to be conducted to gauge the extent to which employees are engaged, feel committed to their organization, and take pride in their organization and the accomplishments of their work and that of their colleagues. The initial survey will establish a baseline for the FS organization from which to measure progress or change and will provide insights into areas that are highly engaged, and conversely, those areas that suffer from poor morale. Action plans should be developed and implemented for those areas that need addressing. Follow-up employee climate surveys should be conducted every one to two years to measure the success of those action plans as well as to spot and address emerging issues before they become a concern.*

- 7.6 Describe the processes used to ensure that the levels of service are consistent with customer needs and requirements and within the facilities department's capability.**

Although FS currently does not have a comprehensive process for establishing service levels, setting targets, identifying and implementing initiatives, and measuring progress, customers and employees alike seem hopeful and encouraged by the direction in which they currently see the organization moving.

*Recommendation 7O*

*FS should evaluate current service levels for grounds, custodial, and maintenance to establish a baseline for each of these service lines for each building and grounds area. Customer input in this evaluation process is recommended.*

*Facilities Services should set service level targets for each area, including an overall "average" level of service, recognizing that these will likely vary by*

*building and grounds area. For example, a building slated for capital renewal or demolition would have a different maintenance service level set for it than a clinical or major research facility. As another example, the most public facing areas of the campus would warrant a higher level of service for grounds care than an infrequently used space.*

*Once service level targets have been established, FS should develop initiatives to achieve the targets, assess resources needed to achieve goals, and align these to assure success.*

*Finally, FS should implement a robust program for measuring and tracking progress and celebrating success.*

*Refer also to recommendations 3H, 3J, and 3L.*

#### *Recommendation 7P*

*Key to meeting service level targets and being the solutions provider for customers is the requirement that the facilities organization be able to provide the technical knowledge, skills, and abilities (KSAs), expertise, and experience demanded of the work. As such, it is recommended that FS become familiar with industry guidelines for these and examine the extent to which they have gaps and overlaps in their workforce. In addition to working with Sightlines and EAB, FS may want to use a resource such as the APPA custodial, grounds, and maintenance trilogy, Operational Guidelines for Educational Facilities: Maintenance, Grounds, Custodial, to support their work on this recommendation.*

#### *Recommendation 7Q*

*FS leadership is clearly committed to fully implementing MAXIMO and leveraging its technology and should continue to devote resources to this initiative and even accelerate its deployment.*

*Facilities Services should consider establishing a work management unit whose primary function is to fully implement MAXIMO modules for asset management, planning and scheduling work, managing workflows, PM preparation and kitting, managing inventory and procurement, process improvement, and other capabilities. The application of 5S Lean principles in all work areas and within all work units is an example of a major process improvement initiative that could be guided by this unit and applied consistently across FS.*

*The work management unit could also be tasked with using Tableau or other visualization tools with the MAXIMO data to support trending and analytics of*

*key performance indicators set by the organization such as PM completion rates, cost per square foot for custodial and maintenance work, productive hours per square foot for custodial and maintenance, cost and/or productive hours per acre for grounds or landscape features, frequency of reactive work by building or asset, frequency and type of work for category high priority work orders, customer-oriented service requests by building or area, and similar performance indicators.*

*The work management unit could also be tasked with leading the effort to assure that initiatives are identified to advance progress on KPIs, establish associated metrics, and review results to assess progress. This focus would assure that data are being used to drive decision making, track progress, and review effectiveness of initiatives.*

*If the recommendation to establish a work management unit is implemented, care is needed in its deployment, as most work management units at other universities tend to house many of the responsibilities that currently reside in two or more existing FS units.*

**7.7 Describe how managers and supervisors are encouraged and enabled to stay in touch with the needs of higher education and how they relate to their own institution.**

The perspective and access to information that are enabled through professional networks, associations, conferences, and training programs are vitally important to assuring that an organization and individuals within it remain innovative, creative, adaptive, and knowledgeable about their industry, emerging trends, best practices, and new ideas and opportunities. FS is to be commended for encouraging managers to attend conferences and training programs. The department's membership in Sightlines and the Educational Advisory Board (EAB) provides access to excellent resources while participation in P4P provides opportunities for system-wide collaboration, experience sharing, and networking.

*Recommendation 7R*

*While EAB membership can be expensive, it does provide valuable information and insights into emerging trends in higher education. As such, FS should ensure that it is leveraging its investment in this membership to the maximum extent possible to include participating in projects, receiving and actively using daily electronic briefings when applicable, attending forum meetings, meeting with EAB executives, and, assuming this is included in the cost of their membership, having EAB complete a project specific to Berkeley. Similarly, the Sightlines membership can provide access to information about the cost of operations and maintenance and utilities at other institutions, which should be actively leveraged when presenting the case for greater investment in these areas at Berkeley.*

*Recommendation 7S*

*Because connecting with other professionals in the industry is critically important to staying relevant and gaining perspective beyond one's own institution, FS should consider sending key members of its leadership team, as well as its emerging leaders, to training programs for higher education facilities officers such as the APPA Institute for Facilities Management and the APPA Leadership Academy. In addition, FS should continue to encourage staff to attend conferences, and equally important, become involved in associations relevant to their specific profession such as NACUBO, AASHE, APPA, and the IDEA Campus Energy Conference.*

# Conclusion

Facilities Services has faced a number of changes over the last several years that continue to impact its effectiveness. Funding has been a major challenge. As a result, the campus has reduced the funding for operations and maintenance while also reducing investment in deferred maintenance. This has left the campus and FS in an unsustainable position as facilities are declining rapidly while there are fewer resources with which to respond.

At the same time, the campus' intensity of use has increased significantly. The campus is heavily used at all hours every day. FS is struggling to keep up with the need to provide acceptable levels of service and increasing demand for services.

The campus has had significant turnover in leadership, including many changes within the FS reporting structure, in the last three years and even more within FS leadership in the last nine years. This has created instability and continually changing direction and priorities which have made it difficult to maintain consistent operations. The instability of campus leadership has had a significant impact on the department's ability to plan and manage work and deploy its scarce resources. Additionally, the Bay Area has seen massive growth, which creates competition and price increases for services and cost of materials. This directly affects FS' ability to be cost-effective and to compete for staff.

The FMEP process is one of the highest levels of self-assessment that a facilities management organization can accept. Not every facilities organization is willing to open its entire organization for scrutiny by outside peers and internal and external stakeholders. This bold step reflects an open and honest organization that is genuinely interested in improving and being recognized among the best. This evaluation program is a major step to help Facilities Services identify its organization's strengths and its opportunities for improvement against the most important features of organizational performance. By reflecting and acting on this assessment, FS will be better positioned to accomplish its mission, improve its results, and become more aligned in support of faculty, staff, and student outcomes. Organizations across the Nation use the APPA FMEP framework to improve and get sustainable results.

The building blocks of the FMEP are the seven criteria and their evaluation factors. It is a "systems perspective" that enables managing all the parts of your organization as a unified whole to achieve your mission. It means ensuring that your plans, processes, measures, and actions are consistent. And it means ensuring that the individual parts of your organization's leadership system work together in a unified and mutually beneficial manner.

Because of the work to complete the self-evaluation, organizational and institutional profiles, and the interview process for the site evaluation, FS participants were required to

think and focus on the circumstances and context of the campus and Facilities Services: the work environment and how work gets done and on the realities of the current situation. This work helps to understand how well FS is achieving its distinct mission for the UC Berkeley campus and helps in accepting the opportunities for improvement.

As the founding campus of the University of California, UC Berkeley remains a leader in education, research, and public service, ranking among the top research universities worldwide.

As such, it seems to be constantly in a state of growth and change and contains all of the complex elements requiring the application of a professional facilities management practices. Because of the institutional focus on achieving and sustaining its mission, the requirements and demands for high-quality campus facilities and facilities services are rigorous and persistent. The review team found a facilities organization that has been positively and profoundly influenced by the leadership of Associate Vice Chancellor Sally McGarrahan and her leadership team. Working together, this team has demonstrated an ability to achieve a positive work environment and is working toward becoming a more proactive facilities organization. Facilities Services staff members know how difficult it is to achieve and to sustain high levels of service in the midst of diminishing resources and changing and uncertain times. Nevertheless, department leaders have accepted the ongoing challenge to build the organization's capability and capacity. Consequently, Facilities Services has earned strong support from Vice Chancellor, Administration, Marc Fisher and a number of other campus administrators, faculty, and staff.

As Facilities Services continues to chart its own right pathway in this dynamic environment, the rewards will be substantial. But, the requirements for this success include a number of critical determinates of success that are true for all educational facility professionals today. These include:

- 1 Competence. As facility management professionals, we simply must know what we are doing, and we must keep getting better at what we do. We must achieve and sustain authentic competence.
- 2 Alliance Building. In other words, we have to take the competencies that we have and build alliances with others who have competencies and resources and form relationships and partnerships that are mutually beneficial.
- 3 Integrity. Character counts and the values, actions, and promises kept must be in alignment for each member of the Facilities Services leadership team.

The APPA review team: Cheryl Gomez, Rich Robben, Dean Hansen, and Jack Hug congratulate Associate Vice Chancellor Sally McGarrahan and all of the hard working women and men in Facilities Services who have demonstrated true character integrity and the courage to meet the demands of reality and the challenges of the hard work ahead. We hope that the recommendations contained in this report will prove to be of value and



benefit and that our site visitation was meaningful for all of those whom we had the opportunity to meet.

We found the review process and our time on campus to be a most rewarding professional experience. We thank you for the opportunity.

# Appendix

## **Campus Administration**

Paul Alivisatios, Executive Vice Chancellor and Provost  
Michael Botchan, Dean, Biological Sciences  
Henry Brady, Dean, Public Policy  
Douglas Clark, Dean, Chemistry  
Marc Fisher, Vice Chancellor, Administration  
John Flanagan, Dean, Optometry  
Keith Gillless, Dean, Natural Resources  
Frances Hellman, Dean, Mathematical and Physical Sciences  
Tsu-Jae King, Vice Provost, Academic and Space Planning  
Jeffrey MacKie-Mason, University Librarian  
Rajiv Parikh, Associate Vice Chancellor, Capital Strategies  
Rosemarie Rae, Vice Chancellor, Finance  
Anna Lee Saxenian, Dean, Information  
Jennifer Wolch, Dean, Environmental Design

## **Campus Department Facility Managers**

Brian Adair, Haas Core Programs  
Derek Apodaca, VLSB  
Mike Bond, Letters & Science  
Lisa Ferrari, Law  
Tony Gamez, CNR  
Brian Joseph, Letters & Science  
Cliff Lobbereg, School of Optometry  
Inna Massen, Chemistry  
Ruben Mejia, Letters & Science  
Trevor Oda, Letters & Science  
Scott Shackleton, College of Engineering  
Harry Stark, Research  
Anthony Vitan, Physics  
Cory Welch, Libraries

## **Facilities Services Department**

Raul Abesamis, Manager, Emergency Management Systems  
Robert Blan, Lead Elevator Shop  
Eddie Bridgett, Manager, Custodial  
Elia Camacho, Custodial Supervisor  
Juan Casanova, Grounds Supervisor  
Howey Chen, Custodial Supervisor  
Stephen Clarke, Lead Plumber-Pipe Fitter-Fire Prevention Services  
Greg Colf, Associate Chief Information Officer  
Diane Coppini, Manager, Fire Prevention Services  
Mike Courter, Manager, Plumbing Shop  
Felix DeLeon, Associate Director, Custodial, Grounds, and Environmental Services  
Eric Ellison, Asset Manager, Region 1  
Sandra Enamorado, Custodial Supervisor  
Greg Falkner, Business Manager  
Susan Fish, Associate Director, Asset Management  
Maria Fong-Pedro, Director, Human Resources  
Maria Garcia-Alvarez, ICAMP Program Manager  
Andrew Garza, Custodial Supervisor  
Malcolm Gaustad, Director, Inspection Services  
Chelsea Groen, Manager, Customer Service Center  
Bridgett Hall, Lead High Voltage Electrician  
Sugi Harto, Abatement Shop Manager  
Ed Hayden, Custodial Supervisor  
Norris Herrington, Manager, Cogeneration Plant  
Steven Keller, Asset Manager, Region 3  
Lin King, Manager, Recycling and Refuse  
Theron Klaus, Manager, Grounds  
Jeremy Lang, Lead Electrical Shop  
Jeff Light, Lead Electrician-Fire Prevention Services  
Karen Lobo, Associate Director, Maintenance Operations  
Jimmy Manibusan, Manager, Utilities Operations  
Sean Matheson, Lead Utilities Plumber  
Daryl Mathews, Asset Manager, Region 5  
Jim Mathwin, Manager, Custodial  
Melvin McCowan, Custodial Supervisor  
Todd McFerren, Manager, Electrical Shop  
Sally McGarrahan, Associate Vice Chancellor, Facilities Services

Teresa Ochoa, Custodial Supervisor  
John Rangel, Manager, Carpenter and Lock Shops  
Mike Robertson, Lead Plumber  
Jerry Robinson, Lead Machinist  
Randy Shiek, Lead HVAC Refrigeration Shop  
Sara Shirazi, Associate Director, Engineering and Technical Services  
Joe Simeona, Manager, HVAC Shop  
Dave Smith, Manager, Stationary Engineers, Night Watch, Motor Pool  
Gerald Souza, Custodial Supervisor  
Kevin Taplin, Supervisor, Recycling and Refuse  
Lauri Twichell, Grounds Supervisor  
Taurino Velarde, Lead Building Maintenance Worker  
Melanie Watson, Custodial Supervisor  
Larry Whitworth, Lead Carpenter Shop  
Devin Woolridge, Manager, Peoples Park and Hill Campus Fire Mitigation  
U Yu Kyi, Lead Stationary Engineer-Preventive Maintenance