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September 11, 2017

Ms. Sally F. Roush, Interim President
San Diego State University
5500 Campanile Drive
San Diego, CA 92182

Dear Ms. Roush:

Subject: Audit Report 17-01, Facilities Management, San Diego State University

We have completed an audit of *Facilities Management* as part of our 2017 Audit Plan, and the final report is attached for your reference. The audit was conducted in accordance with the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing*.

I have reviewed the management response, which includes the campus' decision to accept the risk inherent in not maintaining all assets at the scheduled intervals provided in the preventive maintenance program given the finite resources available at this time, and have concluded that it appropriately addresses our recommendations. The management response has been incorporated into the final audit report, which has been posted to the Office of Audit and Advisory Services' website. We will follow-up on the implementation of corrective actions outlined in the response and determine whether additional action is required.

Any observations not included in this report were discussed with your staff at the informal exit conference and may be subject to follow-up.

I wish to express my appreciation for the cooperation extended by the campus personnel over the course of this review.

Sincerely,



Larry Mandel
Vice Chancellor and Chief Audit Officer

c: Timothy P. White, Chancellor

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The California State University
Office of Audit and Advisory Services

FACILITIES MANAGEMENT
San Diego State University

Audit Report 17-01
June 2, 2017

EXECUTIVE SUMMARY

OBJECTIVE

The objectives of the audit were to ascertain the effectiveness of administrative, operational and financial controls related to facilities operations and to ensure compliance with relevant governmental regulations; Trustee policy; Office of the Chancellor (CO) directives; and campus procedures.

CONCLUSION

Based upon the results of the work performed within the scope of the audit, a few specific control weaknesses were noted; generally, however, controls were adequate, appropriate, and effective to provide reasonable assurance that risks were being managed and objectives were met.

Our review indicated that campus administration of the work order process used to capture, assign, monitor, and analyze facility service requests needed improvement. Specifically, we found that the campus needed to improve the capabilities of the computerized maintenance management system in place and the monitoring of orders to ensure that each would be accurately and timely addressed and closed. We also noted that although the campus had identified assets requiring preventive maintenance (PM) and had created schedules to address routine maintenance requirements, these schedules were not routinely followed, and PM was not being completed in accordance with the plan. The campus has elected to accept the inherent risk in not taking corrective action on this item; and details are provided in their response in the report. In addition, we noted that the campus had not approved and maintained a campuswide integrated strategic energy resource plan and lacked documented procedures for its computerized energy management system. Further, the campus was not submitting required monthly energy reports to the CO in accordance with systemwide policy. Also, we noted opportunities for improvement in the areas of materials management, inventory physical security, and reconciliations to ensure proper chargeback for services.

Specific observations, recommendations, and management responses are detailed in the remainder of this report.

OBSERVATIONS, RECOMMENDATIONS, AND RESPONSES

1. WORK ORDER ADMINISTRATION

OBSERVATION

Work order administration at facilities services needed improvement.

The campus was using a computerized maintenance management system called AiM to capture, assign, monitor, and analyze the individual work and maintenance requests routed to facilities services. We found that due to a combination of control gaps in AiM and a lack of mitigating controls to address these gaps, work orders were not always administered in accordance with campus procedures.

Specifically, AiM lacked certain automated internal controls that would impede inappropriate data input or require completion of certain information to launch or close the order. We found that AiM did not:

- Require completion of the work order start or completion date fields, which are critical to resource and service measurements.
- Include edits to check for pending labor or materials charges before a work order was closed or canceled, which allowed work orders to be closed before chargeable events were settled.

The campus had implemented procedures meant to mitigate the control weaknesses in AiM; however, we reviewed 30 work orders from January 2015 to October 2016 and found that:

- In five instances, work orders were not closed timely.
- In five instances, work orders lacked estimates and did not track assignment progress and completion.
- In five instances, work orders were canceled, even though labor and/or materials had been incurred and committed to the job.
- In three instances, work orders were not billed timely.
- In two instances, labor hours were erroneously charged to a generic code rather than the job-specific work order.
- In one instance, a time card lacked transaction detail, and the source of the amount charged was unknown.
- In one instance, the labor rate used was incorrect.

In addition, we noted a significant backlog of aged open work orders. At the time of the review in April 2017, there were 1,095 open work orders, 787 of which were aged more than

120 days. We reviewed 10 aged work orders and found that nine had been completed, but their status had not been updated.

Proper administration of the work order process enhances service levels, provides greater assurance that assets will be well-maintained, and allows management to accurately report on state facilities and the resources necessary to maintain them.

RECOMMENDATION

We recommend that the campus:

- a. Consult with AiM representatives to determine whether additional automated controls are advisable and available for implementation in the system currently in use at the campus.
- b. Revise current procedures to enhance oversight of the content and status of work orders, including a review and analysis of aged work orders.

MANAGEMENT RESPONSE

We concur.

- a. The campus has met with a consultant to determine whether additional automated controls are advisable and available for implementation in the AiM system. Corrective action is complete.
- b. The campus will revise its procedures to enhance content oversight and the status of work orders. This will also include a review and analysis of aged work orders. The estimated completion date is November 30, 2017.

2. PREVENTIVE MAINTENANCE

OBSERVATION

The campus preventive maintenance (PM) program needed improvement.

We found that although the campus had established a PM program that included a maintenance task schedule in AiM for each asset, the campus was not effectively implementing the program. Specifically, we found that:

- Eight of the ten assets we reviewed for PM program compliance had not been maintained at the scheduled intervals established in the PM program.
- The campus did not have standard procedures to monitor the progress of the PM program, including follow-up on pending and aged tasks and identification of any neglected assets.

- The campus had not incorporated warranty information and requirements into the AiM PM schedule.

Consistent PM provides greater assurance that assets and equipment will perform at peak efficiency and decreases the risk of deterioration.

RECOMMENDATION

We recommend that the campus:

- a. Maintain all assets at the scheduled intervals provided in the PM program.
- b. Establish standard procedures to monitor the progress of the PM program.
- c. Incorporate warranty information and requirements in the AiM PM schedule.

MANAGEMENT RESPONSE

We concur.

- a. The campus strives to perform preventive maintenance on its assets to the best of its ability given current resource and staffing levels. The university accepts the risk inherent in not maintaining all assets at the scheduled intervals provided in the PM program given the finite resources available at this time. We will continue to advocate for additional funding and staffing to expedite this process. The campus has established electrical and mechanical systems PM schedules in AiM and will have plumbing and architectural schedules established in AiM by October 31, 2017.
- b. The campus will establish standard procedures for overall review of the PM program. The estimated completion date is October 31, 2017.
- c. Warranty information, as available, is being scanned and attached to the PM asset. The estimated completion date is October 31, 2017.

3. ENERGY RESOURCE MANAGEMENT

OBSERVATION

The campus energy resource management strategies needed improvement.

We found that:

- The campus had not fully complied with a requirement to implement a campuswide integrated strategic energy resource plan, in accordance with Executive Order (EO) 987, *Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Maintenance*. The campus Climate Action Plan, which could potentially serve this purpose, was in draft form and had not been approved at the time of the audit.
- The campus did not have documented procedures for administration of the Robert Shaw legacy energy management system.

- Responsibility for administration of the legacy Robert Shaw energy management system resided with a single employee, exposing the campus to the risk of system interruption or failure.

Formalized plans, documented policies, and established internal controls demonstrate the campus and system commitment to energy conservation and resource management and provide the basis for implementation of planned and controlled conservation and sustainability projects.

RECOMMENDATION

We recommend that the campus:

- a. Approve and maintain a campuswide integrated strategic energy resource plan that addresses all requirements outlined in EO 987.
- b. Document procedures for administration of the legacy Robert Shaw energy management system.
- c. Assign and provide training for at least one other individual to act as backup administrator for the legacy Robert Shaw energy management system.

MANAGEMENT RESPONSE

We concur.

- a. The campus has approved an integrated strategic energy resource plan that addresses EO 987 requirements. Corrective action is complete.
- b. The campus will document administrative procedures for the Robert Shaw energy management system. The estimated completion date is November 30, 2017.
- c. The campus will provide training for an individual to act as backup administrator for the Robert Shaw energy management system. The estimated completion date is November 30, 2017.

4. MONTHLY ENERGY REPORTS

OBSERVATION

Campus monthly energy reports (MER) were not submitted to the CO timely.

We reviewed MERs from July 2016 to January 2017 and noted that:

- Reports from July 2016 to December 2016 were not submitted to the CO until March 2017.
- The January 2017 report had not been submitted as of the time of the audit.

Lack of compliance with deadlines for submission of MERs increases the risk that systemwide planning and initiatives for energy conservation will be hampered or flawed due to lack of relevant data.

RECOMMENDATION

We recommend that the campus submit MERs to the CO timely.

MANAGEMENT RESPONSE

We concur. The campus will submit timely MERs to the CO. The estimated completion date is August 31, 2017.

5. MATERIALS MANAGEMENT

OBSERVATION

The campus did not have effective materials management policies and procedures addressing the purchase, storage, and use of facilities maintenance department materials, as required by EO 847, *Policy Statement on Facility Maintenance*.

Specifically, we found that policies and procedures did not address purchases made through external vendor retail accounts or the storage, safeguarding, identification, and physical count of non-capitalized sensitive items.

Effective materials management procedures provide greater assurance that resources for facilities maintenance will be purchased and used in the most efficient manner.

RECOMMENDATION

We recommend that the campus update effective materials management policies and procedures addressing the purchase, storage, and use of facilities maintenance department materials to ensure that they include all EO 847 requirements.

MANAGEMENT RESPONSE

We concur. The campus will update its materials management policies and procedures. It will address the areas identified to ensure that EO 847 requirements are included. The estimated completion date is November 30, 2017.

6. SYSTEMS RECONCILIATION

OBSERVATION

The campus did not perform a periodic reconciliation between the billable charges built into AiM work orders and the posting of these charges for collection into the Oracle accounting system.

We found that the two systems do not interface, and both require manual entry of chargeable events.

Periodic reconciliations help prevent potential losses and provide greater assurance that errors or unrecorded transactions will be detected and corrected promptly.

RECOMMENDATION

We recommend that the campus:

- a. Perform a periodic reconciliation of the billable charges built into AiM work orders and the posting of the charges for collection in the Oracle accounting system.
- b. Consider developing an interface between the AiM and Oracle systems.

MANAGEMENT RESPONSE

We concur. The campus will:

- a. Perform periodic reconciliations of the billable charges built into AiM work orders and the posting of the charges for collection in the Oracle accounting system. The estimated completion date is December 31, 2017.
- b. Consider developing an interface between the AiM and Oracle systems. The estimated completion date is December 31, 2017.

7. PHYSICAL SECURITY OF MATERIALS

OBSERVATION

Facilities workshops, tools, equipment, and supplies were not always physically secured.

Specifically, during a physical walkthrough, we found a number of materials in plain sight close to the front and along the perimeters of workshops that were unsecured while no employees were present. Additionally, we noted that the physical locks on multiple unattended lockers were unlocked.

Safeguarding facilities workshops, tools, equipment, and supplies increases the security of assets and reduces the risk that assets will be lost or stolen, leading to higher overall inventory and equipment costs.

RECOMMENDATION

We recommend that the campus develop and implement physical security controls for effective materials management.

MANAGEMENT RESPONSE

We concur. The campus will develop and implement physical security controls for effective materials management. The estimated completion date is November 30, 2017.

GENERAL INFORMATION

BACKGROUND

The need to protect the substantial public investment represented by California State University (CSU) facilities and grounds was brought to the forefront in the Legislative Analyst's Report on the 1979/80 state budget. Subsequently, the Legislature directed the CSU to implement a preventive maintenance program. As a result, the CSU has adopted directives, executive orders and technological tools to ensure that facilities-related assets are adequately maintained.

The Capital Planning, Design and Construction (CPDC) department at the CO maintains a space and facilities database (SFDB), a centralized system that provides information about capacity and facilities at each of the 23 campuses. It also provides details regarding custodial space and farm acreage on the campuses and contains information on each facility, including the condition, construction type, gross square footage, and master plan status. CPDC requires each campus to annually update its facility file in the SFDB; this information provides the basis for the capital outlay program, including funding for any required deferred maintenance, for the immediate and subsequent years.

In 2016, CPDC launched a multiyear plan to improve the quality of facilities data in multiple areas of development and operations. The plan included a new energy information system, which streamlined and improved campus monthly utility reporting; refinements in the reporting categories for self-support facilities such as recreation centers, public/private partnerships, and faculty/staff housing; and detailed facility condition assessments (FCA) to update, in a consistent manner, the estimated backlog of renewal needs. CPDC initiated a master enabling agreement with qualified firm to conduct the FCAs. As of March 2017, nine campuses had completed the process, five had partially completed the process, and nine more were in the proposal stage with the vendor. Information from the FCA reports will make campus reporting of facility conditions more uniform and allow CPDC to more accurately determine annual funding priorities to reduce the capital renewal backlog.

In recent years, funding appropriation challenges in the CSU system have affected facilities maintenance. Each year, CPDC must not only determine how much funding is necessary to maintain the 89 million square feet of facilities systemwide, but also identify, prioritize, and find funds for the backlog of deferred maintenance projects, which, as of 2016, had an estimated cost of \$2 billion dollars.

The San Diego State University (SDSU) campus consists of 72 structures on an open campus of more than 300 acres in an urban area of San Diego. The campus is a mix of older buildings, such as the original Hepner Hall built in 1931, and new construction, such as the Conrad Prebys Aztec Student Union and Storm and Nasatir Halls, which were completed in 2014. Facilities management reports to the vice president and chief financial officer for business and financial affairs, and the staff consists of one director, five assistant directors, four managers, four supervisors, and support staff.

SCOPE

We visited the SDSU campus from March 13, 2017, through April 14, 2017. Our audit and evaluation included the audit tests we considered necessary in determining whether administrative and operational controls are in place and operative. The audit focused on procedures in effect from July 1, 2015, through April 14, 2017.

Specifically, we reviewed and tested:

- Facilities management administration and organization, to determine whether it includes clear lines of organizational authority and responsibility, and current and comprehensive policies and procedures.
- The comprehensive planned/programmed maintenance schedule, to ensure that it captures all categories of maintenance, including routine, preventive, and deferred.
- The process by which the campus identified facility conditions, including deferred maintenance and capital renewal needs, and annually reported the information to the CO.
- Campus implementation of an effective computerized maintenance management system (CMMS) to ensure proper administration of maintenance tasks, including scheduling, cost management reporting, and productivity tools to account for resource utilization.
- Campus implementation of effective and efficient custodial and groundskeeping programs that include productivity and performance standards to ensure the work is performed in an effective and efficient manner.
- The campus process to ensure proper capture, tracking, and collection of costs for non-maintenance and auxiliary-related work orders.
- Campus implementation of an effective utilities tracking system to capture and report information pertinent to CSU goals for sustainability and energy conservation.

As a result of changing conditions and the degree of compliance with procedures, the effectiveness of controls changes over time. Specific limitations that may hinder the effectiveness of an otherwise adequate system of controls include, but are not limited to, resource constraints, faulty judgments, unintentional errors, circumvention by collusion, and management overrides. Establishing controls that would prevent all these limitations would not be cost-effective; moreover, an audit may not always detect these limitations.

Our testing and methodology, which was designed to provide a review of key administrative and operational controls, included interviews, walkthroughs, and detailed testing on certain aspects of the campus facilities operations. Our review was limited to gaining reasonable assurance that controls were in place to identify and address facility maintenance needs, but did not assess the quality of any repair or maintenance tasks.

CRITERIA

Our audit was based upon standards as set forth in federal and state regulations and guidance; CSU Board of Trustee policies; Office of the Chancellor policies, letters, and directives; campus procedures; and other sound administrative practices. This audit was

conducted in conformance with the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing*.

This review emphasized, but was not limited to, compliance with:

- Education Code 98721(I)
- Executive Order (EO) 649, *Safeguarding State Property*
- EO 847, *Policy Statement on Facility Maintenance*
- EO 987, *Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management for the California State University*
- EO 1000, *Delegation of Fiscal Authority and Responsibility*
- Integrated California State University Administrative Manual (ICSUAM) §9047.01, *Space Facilities Database*
- ICSUAM §9170, *Energy Conservation and Utilities Management*
- Government Code §13401, §13402 and §13403
- SDSU *Facilities Services Guide to Services*
- AiM 8.0 *Reference Guide Operations and Maintenance*

AUDIT TEAM

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