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Alexander Bustamante
SENIOR VICE PRESIDENT
CHIEF COMPLIANCE AND AUDIT OFFICER

July 31, 2019

ASSOCIATE VICE PRESIDENT TRAN

RE: Final Report Project No. P19A015: University of California Agriculture and Natural Resources Construction Review

Attached is a copy of the final report for: Audit Services Project No. P19A015 University of California Agriculture and Natural Resources Construction Review. With the issuance of this final report, please destroy any previous draft versions. We very much appreciate the assistance provided to us by you and members of your staff during our review. If you should have any questions please feel free to contact me at 510-987-9646 (email: matthew.hicks@ucop.edu).

A handwritten signature in black ink, appearing to read "Matt Hicks".

Matt Hicks
Systemwide Deputy Audit Officer

Attachment

cc: Senior Vice President Bustamante
Vice President Humiston
Controller McGuire
Director of Facilities Tibor
Systemwide Associate Audit Director Cataldo
Associate Director Harmsworth
Project Manager Martin
Contractor Zahid
Contractor Choi
Contractor Wolfram
Contractor Ameli
Contractor Hostettler

UNIVERSITY OF CALIFORNIA
ETHICS, COMPLIANCE AND AUDIT SERVICES
OFFICE OF THE PRESIDENT
INTERNAL AUDIT SERVICES

University of California Agriculture and Natural Resources
Construction Review
Audit No. P19A015
April 2019

Executive Summary

Introduction

As part of the University of California Office of the President (UCOP) 2017 – 2018 fiscal year (FY) audit plan, Internal Audit performed a review of the Division of Agriculture and Natural Resources' (ANR) internal controls and their effectiveness pertaining to construction project sourcing and contracting, financial management, and reporting.

Background

Facilities Planning and Management (FP&M) is the function within ANR responsible for planning, administration, and management of ANR's construction projects and the operation and maintenance of its new and existing facilities. FP&M follows the University of California (UC) Facilities Manual—which contains policies, procedures, and guidelines for its facilities—in order to perform its responsibilities. Business Operations Center – Davis (BOC - Davis) is another department within ANR tasked with providing financial services to various functions including ANR service units in Davis. As specifically related to ANR, BOC - Davis's services include creating new projects, purchase orders, contractual amendments, and change orders in UC Davis's financial and accounting system – Kuali Financial System (KFS) – and processing invoices. BOC - Davis is also engaged in the process for establishing ANR's new vendors in collaboration with the UC Davis Vendor Desk.

Objective and Scope

The primary objectives of the audit were to:

- Assess the current state of existing processes and controls followed by FP&M (and BOC - Davis, when applicable) in planning, execution, and management of ANR construction projects to assess whether control gaps or deficiencies existed. Specifically, the following areas were included in the scope of the review:
 - Sourcing and contracting
 - Compliance with the UC Facilities Manual procurement policies and procedures
 - Segregation of duties in reviewing, approving, and executing contracts, change orders, and invoices
 - New vendor establishment
 - Financial management
 - Budget development
 - Project cost tracking
 - Field progress evaluation
 - Cashflow forecasting
 - Change management
 - Stakeholder reporting
 - Cost and schedule baseline performance measurement

Procedures Performed

To accomplish the project objectives and scope as documented above, Internal Audit performed the following procedures:

1. Conducted interviews with UCOP, FP&M, and BOC - Davis stakeholders, and performed process walkthroughs to gain an understanding of procedures in place for the planning, administration, and management of construction projects.
2. Assessed FP&M's compliance with the UC Facilities Manual¹ policies and procedures, and conformance with leading industry practices.
3. A sample of four projects were selected for testing and review, from FP&M's construction portfolio that had started from circa January 2016 and were in progress or completed by our data request date of October 2018, nearly a three-year period. Our sample of four projects comprised two major capital projects,² which represented the largest projects in terms of spend within the portfolio, and two judgmentally selected non-major capital projects. Further detail on the sampled projects is below:

No.	Project	General contractor	Final completion date	Major capital project?	Final project costs (\$)	Base construction contract (\$)
211043	IREC Field Lab	Kinsman Construction, LLC	August 5, 2018	Yes	1,986,000	1,324,158
211032	New Parking Lot	Western Engineering Contractors, Inc.	January 16, 2018	Yes	982,709	867,921
P210983	Asphalt Recycle Paving	J. Mack Enterprises, Inc.	August 9, 2016	No	58,900	45,550
P210999	Renovation of Screenhouse	Ag-Con Construction, Inc.	October 25, 2016	No	139,889	139,889

4. Assessed the current state of existing processes and controls followed by FP&M (and BOC - Davis, when applicable) in execution and management of the sampled projects to assess whether control gaps or deficiencies existed. For further details of the in-scope control areas and detailed testing processes, please refer to **Appendix B**.

Conclusion

For the processes and controls assessed for operating effectiveness, we identified several controls that were not operating effectively, as well as non-existent processes relative to leading industry practices. The following observations were noted:

1. Violations of the UC Facilities Manual policies and procedures
2. Gaps in enforcement of contractual requirements
3. Lack of segregation of duties and conflict of interest checks in contract execution
4. Highly manual processes in tracking project cost and information
5. Undefined processes for internal stakeholder reporting

Based on the scope of our engagement and the underlying procedures performed and samples reviewed, we did not identify evidence of any intentional wrongdoing, fraudulent acts, or financial abuse by parties

¹ <https://www.ucop.edu/construction-services/facilities-manual/index.html>

² https://www.ucop.edu/design-services/resources/major-capital-projects-implementation-reports/major_capital_projects_implementation_report.pdf, UC Facilities 2017 - 2018 Major Capital Projects Implementation Report, page 4, Executive Summary: "Major capital projects [are] projects with budgets in excess of \$750,000."

to FP&M's construction activities. However, as noted in this report, the management processes are not currently designed or implemented to provide sufficient oversight to ensure transactions are accurately processed and properly approved and in accordance with University policy.

Further details of the observations tabulated above are provided within the **Opportunities for Improvement and Actions Plans** section of this report. **Appendix A** includes Additional Opportunities for Improvement and Recommendations, which are intended to better align FP&M's practices with leading industry practices and will not be formally tracked by Internal Audit. **Appendix B** is a list of assessed controls and processes.

Opportunities for Improvement and Action Plans

1. *Violations of the UC Facilities Manual policies and procedures*

We noted several instances in which FP&M did not follow the UC Facilities Manual guidelines in the planning, administration, and management of its projects. These included sole sourcing and lack of documentation to support the sole sourcing decision, engaging contractors without qualifying them, committing additional funds to the project budget without prior approvals, and inaccurate and incomplete reporting of major capital project data to UCOP.

There are currently no controls in place to confirm whether procurement-related or budget approval requirements per the UC Facilities Manual have been adhered to by FP&M before setting up a project or committing funds in KFS. Further, oversight functions are not currently established to confirm that ANR's major capital project data is communicated to UCOP timely and accurately.

Lack of adherence to the UC Facilities Manual may expose UCOP and ANR to financial, legal, and reputational risks.

The following specific issues were noted:

1.1 Sole sourcing and absence of documentation to justify rationale

- FP&M sole sourced a general contractor for the \$139,889 Screenhouse Renovation project without documented justification. Per Public Contract Code referenced in the UC Facilities Manual, "*construction contracts in excess of \$50,000 should be competitively bid.*"³

Although not specifically documented, FP&M maintained that the emergency nature of the screenhouse's repair and the contractor's experience led to its sole sourcing decision. FP&M stated that the majority of its projects comprise small-size (in value and scope) repair and renovation efforts that are relatively short and remotely located. As a result, FP&M often encounters challenges attracting contractors to bid and, therefore, may occasionally sole source to contractors.

- The contractor for one project was selected and awarded a contract using the negotiated contracting method.⁴ FP&M used the negotiated contracting method for a \$45,550 Asphalt Recycle Paving project. However, the mandatory memorandum to document and "*state the conditions warranting a negotiated bidding award and justification of the accepted price as being reasonable (such as an independent estimate)*"⁵ as required per the UC Facilities Manual was not developed by FP&M.

1.2 Lack of contractor qualification and enforcing pertinent requirements

- Per the UC Facilities Manual, when construction contract value exceeds \$300,000, general contractors, and mechanical, electrical, and plumbing (MEP) subcontracts must be qualified.⁶ FP&M, however, does not prequalify its contractors, nor does it qualify bidders at the time of bid.

³ <https://www.ucop.edu/construction-services/facilities-manual/volume-5/vol-5-chapter-1.html#1-1>

⁴ <https://www.ucop.edu/construction-services/facilities-manual/volume-5/vol-5-chapter-1.html#1-3>

Per the UC Facilities Manual, "*A contract may be negotiated with a contractor if the construction cost of the project does not exceed \$50,000.*"

⁵ <https://www.ucop.edu/construction-services/facilities-manual/volume-5/vol-5-chapter-1.html#1-3>

⁶ <https://www.ucop.edu/construction-services/facilities-manual/volume-5/vol-5-chapter-1.html#1-2>

Due to the relatively small and straightforward nature of the majority of its projects, FP&M believes that the high-level evaluation it performs to assess the responsiveness and responsibility of prospective contractor bids is sufficient, and further analysis of contractor qualifications is not required even though the UC Facilities Manual calls for a more extensive diligence for contractor qualification.⁷

- Contractors are required to furnish evidence of reliability and responsibility for their subcontractors within 10 days after receipt of the Notice of Selection as the Apparent Lowest Responsible Bidder.⁸ Such forms were not requested by FP&M and not supplied by three contractors on applicable reviewed projects.⁹

1.3 Lack of budget augmentation approval and proper budget development documentation

- The budget for the ANR New Parking Lot project, an internally funded project by ANR funds, increased by \$17,821 (or 2%) after the initial budget approval by ANR's Associate Vice President; however, a budget augmentation approval to cover the increased costs was not solicited as required per the UC Facilities guidelines. Since the ANR New Parking Lot project was funded internally, FP&M seems to have been able to secure and access the additional funds without obtaining approvals at the proper level.
- The Capital Improvement Budget (CIB) form was not developed for the ANR New Parking Lot project, which is the standard form used to delineate project cost buckets and outline the project funding schedule, as required per the UC Facilities Manual. FP&M instead utilized its own informal format for outlining the budget. Nonetheless, the project was approved.

1.4 Inaccurate and incomplete reporting of project data in the Major Capital Project Implementation Report

- The Major Capital Projects Implementation Report¹⁰ is a statewide annual reporting of UCOP major capital project cost, schedule, and status data. The following inaccuracies were noted in FP&M's reporting of its major capital projects for FY 2018:
 - Revised project budget for the IREC Field Lab project was reported as \$1,808,000, while actual project documentation showed the revised budget as \$1,986,000 (a \$178,000 or 10% variance).
 - The ANR New Parking Lot project was substantially completed on November 27, 2017, and finally completed on January 16, 2018, but was not reported in the FY 18 Major Capital Projects Implementation Report in July 2018.

⁷ https://www.ucop.edu/construction-services/files/facman/contracts/base_qualification_questionnaire.pdf

The base qualification criteria include, among other factors, a review to determine validity of contractor licensure, proper bond and insurance coverages, successful past experience in completing a construction project with a total cost in excess of \$300,000, lack of willful violations of the CA Labor Code, and lack of potential bankruptcy cases in the last five years.

⁸ <https://www.ucop.edu/construction-services/facilities-manual/volume-5/vol-5-chapter-8.html#8-4>

⁹ The IREC Field Lab, ANR New Parking Lot, and Asphalt Recycle Paving projects

¹⁰ See the latest Major Capital Projects Implementation Report for the FY 18 here: https://www.ucop.edu/design-services/resources/major-capital-projects-implementation-reports/major_capital_projects_implementation_report.pdf

Action Plan:

a. Policy training

FP&M will facilitate regular training sessions (cadence to be determined by ANR and FP&M) for its project management and administrative staff to review and confirm familiarity with the UC Facilities Manual policies and procedures applicable to its operations. In addition, FP&M will develop, in an electronic format, a summarized version of the UC Facilities Manual containing excerpts of policies that relate to its operations along with links to full policies. The summary will be leveraged in facilitating the internal training sessions. When updates to policies occur, FP&M will update the summary to reflect those revisions, if applicable.

Target Date: Nov 29, 2019

b. Documentation of deviations from policy

If deviations from the UC Facilities Manual guidelines are expected to occur, FP&M will justify those variations using a memo and solicit leadership approvals from ANR before advancing with activities that may conflict with the established policies. Further, ANR will establish processes defining when and what kind of deviations need to be reported by FP&M. ANR will also designate individuals responsible for the approval of policy deviations.

Target Date: Nov 29, 2019

Regarding procurement, FP&M will attempt to solicit more than one bid for contracts greater than \$50,000 (and at least three bids, when feasible). If sole sourcing proves to be the only viable option, FP&M will assess the reasonableness of the contractor's pricing and document its review, along with documenting its contractor outreach efforts, and the justification for sole sourcing in a memo. FP&M will furnish the memo to ANR leadership for soliciting approvals before awarding the contract.

Target Date: Nov 29, 2019

c. Implementing additional checks by a party independent from FP&M before setting up new projects or commitments

ANR will utilize an independent reviewer, who is either part of the BOC - Davis personnel or a newly appointed program controller, to administer the additional document review criteria listed below before setting up a new project or committing funds in KFS:

Procurement checks – the independent reviewer/program controller will:

- Require FP&M to communicate its mode of contractor selection (e.g., negotiated contracting, informal or formal competitive bidding) for each project, and provide the procurement-related documentation required for each method per the UC Facilities Manual (e.g., sole source justification and approval for a sole sourced contractor, proof for performing contractor qualification for contracts greater than \$300,000, conflict of interest statements).
- Confirm that the method used by FP&M complies with the UC Facilities Manual given the contract amount.
- Develop and deploy a capital projects checklist that, besides the criteria already being reviewed (e.g., appropriate contract type for construction or professional services, contract duration, signatures, notice to proceed), features a list of various

contracting modes and enumerates the requirements for each mode per the UC Facilities Manual.

- Assess whether those requirements have been met given the contractor selection mode and per the documentation provided by FP&M; document the review in the checklist.
- If deviations from the policies are noted, follow up with FP&M to confirm memos justified those variations and that proper approvals were obtained.

Target Date: Nov 29, 2019

Budget and funding approval checks – BOC - Davis will:

- Incorporate additional fields in the capital projects checklist to discern whether project budgetary requirements have been met per the UC Facilities Manual before creating projects, contracts, or change orders in KFS.
- For setting up new projects, assess whether CIB forms – as applicable to either State- or non-State funded projects – have been developed and proper budgetary approvals have been obtained.
- Aside from confirming budget approvals have been obtained, confirm whether project funding has been secured and that funds are available before moving forward with creating the project.
- For adding new commitments or change orders on existing projects, assess whether sufficient funds are available against the remaining approved project budget. If new commitments are over the approved budget, seek budget augmentation documentation and approvals from FP&M under the UC Facilities Manual so funds exceeding the approved project budget cannot be committed unless prior approvals have been obtained and additional funds have been secured.

Target Date: Nov 29, 2019

d. Independent inspection of major capital project data for accuracy before reporting

FP&M will provide its major capital project data and templates to the independent program controller for review prior to submission to UCOP. The independent program controller will review the data prepared by FP&M before submission to UCOP and confirm that eligible projects are reported upon completely and accurately.

Target Date: Feb 28, 2020

e. Develop a standard operating procedure (SOP) document

FP&M will develop an SOP document to memorialize and further elaborate, as needed, on the steps needed to effectively manage the ANR construction process. In conjunction with the UC Facilities Manual, the SOP document will serve as an easy reference for FP&M personnel (and BOC - Davis, when applicable) as they perform their day-to-day duties in the administration and management of ANR's construction projects.

Target Date: Apr 30, 2020

2. *Gaps in enforcement of contractual requirements*

We noted several instances where FP&M did not formally enforce elements of its general contractor agreements on reviewed projects. For instance, approved contractor change orders lacked backup documentation to justify claims for additional costs and schedule extensions, general contractors did not furnish required updated monthly project schedules during their projects, and FP&M did not execute the substantial completion letters on three of the four reviewed projects.

FP&M stated that it receives schedule updates and change order details through informal means such as verbal communications or email correspondence from the contractor, as opposed to requiring formal, contractually required documentation.

Not enforcing the stipulated terms of general contract agreements may affect FP&M's ability to effectively manage project risks, resulting in cost overruns, time delays, and disputes.

The following specific issues were noted:

2.1 Lack of backup for approved contractor change orders

- The general contractor did not provide the contractually required backup documentation with its change orders on the IREC Field Lab project to show a detailed breakdown of costs into labor, material, equipment, fees, and subcontractor costs.¹¹ The change orders were instead presented as lump sum figures without supporting documentation.
- One general contractor requested a one-day time extension to execute the scope associated with change order #3 on the ANR New Parking Lot project; FP&M granted 24 days instead and no formal documentation existed to justify and memorialize the rationale for such schedule extension.

2.2 Updated monthly schedules were not supplied by contractors

- Though required contractually and by the UC Facilities Manual, FR&M did not request nor receive and approve updated monthly schedule reports from the general contractors on the IREC Field Lab and ANR New Parking Lot projects.

2.3 Substantial completion letters were not executed by FP&M

- FP&M did not execute the substantial completion letters for three¹² of the four projects selected for review. Several contractual events or milestones were triggered or affected by the substantial completion date, including commencement of the guarantee period, warranties, change in liquidated damages amount, retention release, and beneficial occupancy.¹³ Therefore, substantial completion dates for those projects remained unknown. We note, however, that the final completion letters for the four reviewed projects were executed and filed by FP&M.

¹¹ According to the prime contract with ANR, the 'Cost Proposal Summary' and 'Supporting Documentation for the Cost Proposal Summary' forms should have been provided by the contractor in support of its change orders.

¹² The IREC Field Lab, Asphalt Recycle Paving, and Renovation of Screenhouses projects.

¹³ Contractual events impacted by the substantial completion date vary across the reviewed projects depending on the contract and project type. Thus, individual examples listed above may not necessarily be applicable to each of the four reviewed projects.

Action Plan:

FP&M management staff will familiarize themselves with FP&M's contract agreements and will enforce the requirements stipulated thereof, specifically:

a. Backup support for change orders

For change orders on future projects, especially larger or major capital projects, FP&M will require contractors to submit full backup support, including a breakdown of costs for labor, material, equipment, fees, and subcontractor costs and markups (if applicable), and for underlying quantities and unit prices, as allowed by the contract. In addition, when feasible, FP&M will request other supporting documentation such as invoices and timesheets from contractors to substantiate their costs. If schedule extensions occur, FP&M will request detailed commentary and justification from contractors to support their claims for time extensions.

Target Date: Jan 31, 2020

b. Program control function

ANR will either train BOC - Davis personnel or appoint an independent program controller to confirm that the required backup support and information for change orders under the contract terms applicable to each project are provided before a change order is processed and added in KFS. ANR will develop a checklist that will be leveraged by the independent reviewer to document the review.

Target Date: Jan 31, 2020

c. Monthly schedules

On future projects, especially larger or major capital projects that span beyond one month, FP&M will require contractors to develop and supply updated monthly project schedules with a level of detail commensurate with the complexity in project scope and as specified in contract agreements. FP&M will review the updated schedules, determine whether the contractor is using the schedule to coordinate scope activities, assess the progress of the work, and leverage the schedule as a tool in determining monthly progress payment and forecasting risk.

Target Date: Jan 31, 2020

d. Substantial completion

FP&M will formally establish the substantial completion date of its projects and document the date by executing a substantial completion letter. FP&M will file the letter as part of project documentation.

Target Date: Jan 31, 2020

3. *Lack of segregation of duties and conflict of interest checks in contract execution*

ANR's Vice President delegated the signature authority related to constructing capital projects, including bid solicitation and execution of construction contracts to FP&M's Director of Facilities.¹⁴ FP&M's Director of Facilities was the sole signatory and approver on ANR's construction contracts and change orders for the selected projects; no requirements are in place to engage other ANR functions in the approval process for commitments greater than certain thresholds.

Further, no controls are currently in place to confirm conflicts do not exist among project participants, including ANR and contractors, and to confirm that contractor procurement and selection processes, or contract administrative tasks are not improperly influenced due to potential conflicts.

The absence of an effective segregation of duties process for approving and executing contractual commitments and lack of conflict of interest checks may lead to commitments made that are not properly authorized as per UC Facilities policies. Vendors could be procured improperly and inappropriate or unjustified costs may be incurred.

Action Plan:

a. Segregation of duties

To ensure that the authority to approve contracts and change orders is not exercised by one individual, ANR will engage and require a secondary approver at the leadership level (i.e., ANR's Associate Vice President who has also been granted signature authority from ANR's Vice President) for contracts and change orders greater than certain values (thresholds to be determined by ANR).¹⁵

Target Date: Aug 30, 2019

b. Conflict of interest checks

FP&M will develop a conflict of interest disclosure form (or use existing forms, if applicable) and require contractors to fill out the forms to disclose their affiliations and state whether they have a relationship, at a minimum, with any ANR employees including FP&M personnel. Similarly, FP&M management involved in the contractor procurement process will fill out the conflict of interest forms confirming whether they are affiliated with or have a relationship with a bidder, before contract award. These forms will be retained as part of project documentation.

Target Date: Aug 30, 2019

¹⁴ Per the letter dated February 8, 2016: Re-Delegation of Authority, Presidential Delegation of Authority No. 2564 - Bid Solicitation and Execution of Construction Contracts, including Limited Authority within the Best Value Selection Program, from ANR Vice President to FP&M Facilities Director

¹⁵ Per the letter dated February 8, 2016: Re-Delegation of Authority, Presidential Delegation of Authority No. 2564 - Bid Solicitation and Execution of Construction Contracts, including Limited Authority within the Best Value Selection Program, from ANR Vice President to ANR Associate Vice President

4. *Highly manual processes in tracking project cost and information*

We identified several instances of erroneous or inconsistent tracking and reporting of project data in ANR's project listing spreadsheets, as well as outdated expenditure information on FP&M's project-specific cost tracking workbooks. FP&M relies on highly manual and cumbersome processes for compiling project data, and an effective tool for tracking consolidated project information at portfolio- and project-specific levels is not currently in place.

Utilizing manual and ineffective tracking tools and lack of a consolidated module to track and manage project data in a single platform, can introduce the opportunity for preventable errors that may negatively affect project cost or schedule, or lead to inaccurate reporting of project data to stakeholders, resulting in stakeholders making decisions based on erroneous data.

The following specific issues were noted:

4.1 Lack of a consolidated data tracking tool for projects across the portfolio

- a. FP&M utilizes an Excel-based spreadsheet called the "Log Plant Agreement" as the primary mechanism to track its project portfolio. The spreadsheet comprises a manually compiled list of projects, along with summary of scope, contractor name, original contract amount, and an unofficial date used internally by FP&M to indicate when it can proceed with a project. Other salient project metrics, however, including budget, change orders, expenditures, schedule, and status are not tracked in the spreadsheet.
 - i. Change order amounts must be obtained separately for each project, leveraging KFS or referencing actual project documentation.
 - ii. Budget information (e.g., baseline budget, revised budget), schedule, and project status are not tracked elsewhere, and must be obtained using actual project documentation.
- b. In the project listing spreadsheet that was manually compiled by FP&M and BOC - Davis for the assessment¹⁶ (necessary due to the lack of an existing tool that tracks basic project information at a portfolio-level), various inaccuracies in reported data were noted. For instance, total expenditures on account #P210998 for the Modular Building Dismantle, Move and Set-up project were reported as \$207,770, while actual project documentation showed expenditures of \$232,859 (a \$25,089 or 11% variance).
- c. On the same contract referenced above, total change orders were reported as \$28,730, while actual project documentation showed \$53,819 in change orders (a \$25,089 or 87% variance).

4.2 Project-specific workbooks are manual and track limited information

- d. Cost tracking spreadsheets used by FP&M on individual projects only track expenditures and do not track other financial metrics such as budgets and commitments. This process does not allow for a comparison of actual expenditures against commitments or budgets to gain an understanding of remaining funds within various budget components (e.g., construction, engineering, contingency).

¹⁶The spreadsheet was manually created through a joint-effort by FP&M and BOC – Davis. FP&M compiled the project and contractor names, account number, original contract amounts, budgets, and status, while BOC - Davis extracted the change order and expenditure information for each project.

- The final cost tracking spreadsheet for the ANR New Parking Lot project did not contain up-to-date expenditure information:
 - The manual spreadsheet showed \$73,877 as the total expenditures for the general contractor, while KFS reflected \$86,977 was paid to the vendor (a \$13,100 or 18% variance).
 - The manual spreadsheet recorded construction expenditures of \$837,120 for the general contractor, while KFS reflected \$833,885 (\$3,235 or 0.4% variance).

Action Plan:

ANR will explore and implement a commercially available, cost-effective project management software tool to automate the tracking and management of its construction projects. Such platform will be capable of tracking project financial data (e.g., available funds, baseline and revised budgets, commitments, change orders, expenditures, estimate to/at complete), schedule information, status, and provide capabilities for fixed asset management after construction ends (e.g., operations, maintenance). ANR will also explore whether the software can be synced with KFS to ideally pull the project financial information automatically and reduce the need for data reconciliation efforts across the two platforms. The software will serve as the “single source of truth” for data related to ANR’s projects and will be accessible by various ANR stakeholders, as needed.

Target Date: Jun 30, 2020

5. Undefined processes for internal stakeholder reporting

A formal project status report processes is not in place to regularly apprise ANR leadership and stakeholders of the status of construction activities and associated spend. The current project status reporting conducted by FP&M comprises a reporting of its major capital projects to UCOP annually (i.e., the Major Capital Projects Implementation Report)—as further explained in Observation #1.

Minimal transparency regarding ANR's construction project performance and spend due to lack of regular, portfolio-wide status reporting may impact ANR leadership's ability to make informed decisions, such as reprioritizing funding or applying corrective measures, if needed.

Action Plan:

FP&M will implement a reporting structure to report the status of projects in its portfolio to ANR leadership on a regular cadence (the reporting frequency is to be determined by ANR). The report will encompass a list of new, ongoing, and recently completed projects along with salient performance metrics attributable to each project, including:

- a. Original and revised budgets
- b. Commitments
- c. Change order amount
- d. Spend to-date
- e. Performance against schedule
- f. Project phase (e.g., planning, design, procurement, construction, closeout)
- g. Status (e.g., not started, active, complete)

Where possible, the project-specific data will be extracted from an automated project information system to reduce the potential for manual errors and confirm that project information is accurately communicated

Target Date: Mar 31, 2020

Appendix A

Additional Opportunities for Improvement and Recommendations

1. Cashflow projections

FP&M does not require contractors to perform and provide cashflow forecast reports. Absent such forecasts, monitoring spend on the project and detecting potential overage or underage in contractor billings against the original plan will not be feasible.

Recommendation:

FP&M should consider requiring contractors on its major capital projects to furnish monthly cashflow projection reports to show the spend forecast for the upcoming month(s). FP&M should then conduct a cashflow comparison against actual expenditures to assess the accuracy of forecasts, identify discrepancies, and seek input from the contractor as to the root cause of those discrepancies.

2. Change tracking log

FP&M does not maintain a change order log, especially on its major capital projects where change orders are more likely to arise, to track project changes, along with change status (e.g., pending, approved), cost impacts, time extensions, and funding sources. Absent an effective change log, obtaining an understanding of a given project's changes to-date and their status without having to reference individual change order documentation may not be feasible, which may increase the likelihood for errors.

Recommendation:

FP&M should consider developing and deploying a change order log, especially on its major capital projects, and track change orders. The log should feature these elements:

- Change order number
- Scope
- Submission date
- Definitive or rough-order-of-magnitude (ROM) estimate of cost and time extension
- Status (e.g., potential, approved, rejected)
- Funding source
- Approval or rejection date

Appendix B

List of Assessed Controls and Processes

1. Vendor Procurement		
<i>Potential risks: Contractor selection processes, including prequalification, bidding, and award do not comply with UC Facilities Manual sourcing and procurement policies or industry practice, exposing UCOP to regulatory noncompliance or reducing the likelihood of obtaining best possible value on contracts.</i>		
Control Title	Control Description	Testing Procedures
1.1 Bidding and Award Process	ANR typically conducts a publicly advertised, competitive bidding process to solicit bids for contracts greater than \$300K in value and attempts to obtain at least three bids for contracts greater than \$50K. Due to the remoteness and small size of majority of its projects, however, securing three bids is often a challenging endeavor and may not be feasible.	<ol style="list-style-type: none"> 1. On a sample basis, assess whether the bid solicitation strategy used to select and award general contractors complies with UC Facilities requirements and aligns with contracted amounts. 2. For the selected sample, and when applicable, assess whether the bid / proposal review process employed by ANR complies with the UC Facilities manual according to the bidding strategy, including whether bids were reviewed and tabulated in a bid summary sheet, and whether recorded results in bid sheets reconcile to actual contractor proposals. 3. For sampled projects, assess whether the award criteria for selected general contractors conform to UC Facilities policies.
1.2 Supplier Prequalification	None	N/A
1.3 Subcontractor Contracts	General contractors disclose the subcontractors they intend to use on the project to ANR FP&M before award.	<ol style="list-style-type: none"> 1. For a sample of projects, assess whether awarded general contractors submitted the list of subcontractors they intended to use on the project along with evidence of reliability and responsibility of each subcontractor, after receipt of Notice of Selection from ANR according to UC Facilities manual.
1.4 Compensation Model	Majority of construction projects in ANR's portfolio comprise small size efforts, with relatively straightforward scopes and short durations. Design documents are developed before FP&M management attempts to solicit bids. FP&M usually solicits and awards contracts on a lump sum basis. Occasionally, when the scope is clear, but the full extent of the scope or quantities are unknown at the time of bid, unit price contracting method is used instead.	<ol style="list-style-type: none"> 1. For a sample of projects, assess the utilized compensation model for selected general contractors and confirm whether selected methods were appropriate and commensurate with the high-level scope of work, project size, and design development history, and that selected methods followed UC Facilities policies.

2. Unauthorized Commitments

Potential risks: Commitments are made that are not properly authorized as per UC Facilities Manual policies and procedures leading to inappropriate or unjustified costs or improperly procured vendors.

Control Title	Control Description	Testing Procedures
2.1 Commitment Authorization	<p>Per UCOP's delegations and limitations of authority policy, the authority to execute construction contracts resides with ANR's Vice President. The Vice President has delegated signature authority to ANR's Director, Facilities Planning and Management and Associate Vice President of ANR Business Operations (BOC), delegation of authority records are maintained.</p> <p>BOC initiates the vendor set up process in KFS usually upon receipt of an executed contract from FP&M. The request is then routed to UC Davis Vendor Desk that verifies all information and requests W-9 form and BIF forms from the vendor. Only after those documents are supplied, the vendor is then activated by the Vendor Desk.</p>	<p>1. Obtain and review the UC Facilities delegation of authority policy and assess whether the policy guidelines were followed in approving and executing a sample of general contractor contracts and a sample of their payment applications / invoices.</p> <p>2. For a sample of projects, analyze the timelines associated with project documentation including contractor bid, prime contract, first contractor change order, and first invoice to determine whether contract was executed after contractor's bid submittal and whether invoices were submitted after the contract execution date.</p> <p>3. For a sample of contractors, obtain supporting documentation that the steps required for creating new vendors per UC Davis Supply Chain Management guidelines were followed, including whether KFS vendor creation tabs were filled out with vendor information, and that required documentation for creating a new vendor including Business Information Forms (BIF), insurance documentation, and W9 Forms were submitted by vendors.</p>
2.2 Segregation of Duties	<p>The procurement process (bid solicitation and review) is managed by FP&M's local project superintendents with FP&M project managers in Davis. These personnel do not have the authority to approve or sign contracts and invoices; such authority has been delegated to ANR's Director, Facilities Planning and Management (FP&M), and Associate Vice President of Business Operations. In addition, invoices undergo a final review process by ANR BOC and Fiscal Officer before payments can be processed.</p>	<p>1. For a sample of awarded general contractors, inquire with ANR FP&M management and identify the personnel in charge of the procurement process including bid solicitation and review. Assess whether those same personnel have been the signatory on behalf of ANR executing the general contractor contracts.</p> <p>2. For the selected contractors, and for a sample of payment applications / invoices, assess whether ANR personnel have been the signatory approving invoices (including whether the personnel in charge of project procurement had signed / approved those invoices), and whether ANR BOC and Fiscal Officer had reviewed those invoices before payments were made.</p>

2.3 Conflict of Interest Checks	None (FP&M personnel complete mandatory ethics trainings annually, which include guidance on conflict of interest matters. ANR FP&M, however, does not require its contractors to undergo conflict of interest checks, nor do its employees fill out conflict of interest statements.)	N/A
<p>3. Initial Budgeting</p> <p><i>Potential risks: Cost metrics and assumptions used to establish project budgets are inaccurate and not based on comparable project data. Third-party cost estimates used in developing budgets are incomplete or lack detail, leading to costly change orders and added project costs.</i></p>		
Control Title	Control Description	Testing Procedures
3.1 Budget Development	<p>ANR FP&M follows UCOP's Capital Improvement Budget policy in developing budgets for construction projects and allocates funds for hard costs and soft costs according to policy limits.</p> <p>FP&M deploys third-party, professional estimators to develop budgets for projects exceeding \$750K (and, occasionally, for projects smaller than \$750K if deemed necessary). For other projects with small scopes that comprise the majority of its portfolio, however, FP&M establishes budgets based on the lowest bid received after conducting the bidding process.</p>	<p>1. Obtain the budget breakdown for a sample of projects to assess whether budgets were broken down into construction and soft cost components, and if so, whether percentages allocated to soft costs were aligned with limits set by UC Facilities policies. In addition, inquire with FP&M management to understand the basis of construction budget estimates within each project and assess whether budgets were developed based on reliable assumptions and comparable data.</p> <p>2. For a sample of major capital projects, assess whether third-party estimates were used in developing construction budgets, when required per UC Facilities manual, and if so, inspect those estimates to determine whether they contained a sufficient level of detail commensurate with the project type and size.</p>
<p>4. Contingency Misallocation</p> <p><i>Potential risks: Contingencies are not allocated in project budgets or the rationale used to determine contingency amounts is inaccurate and not tied to project-specific circumstances or data from comparable projects.</i></p>		
Control Title	Control Description	Testing Procedures
4.1 Contingency	Majority of projects in ANR's portfolio comprise small size efforts, with relatively straightforward scopes, and short durations; FP&M rarely anticipates changes in those projects and, therefore, does not	1. For a sample of large projects, assess whether contingencies were accounted for and built into the project budget. If so, assess whether allocated contingency amounts comply with the limits specified by the UCOP Capital Improvement Budget policy and whether

	allocate contingencies in budgets for those projects. For larger projects, however, FP&M sets aside contingencies per UCOP's Capital Improvement Budget policy and are based on unknowns in the project before the project start.	project-specific circumstances were considered in applying contingency to the budget.
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5. Inaccurate Financial Tracking
Potential risks: Contracted amounts are not tied to specific projects. Project costs (e.g., expenditures, commitments) are not monitored, frequently updated, or tracked against budgets causing financial overruns.

Control Title	Control Description	Testing Procedures
5.1 Financial Tracking and Monitoring	<p>ANR FP&M management prepares a project estimate worksheet (PEW) for each project outlining the budgeted costs including costs associated with construction contracts. On smaller projects, actual costs are visually compared to the budget outlined in the PEW and, if a budget overrun is expected to occur, FP&M follows UC Facilities budget augmentation guidelines, when applicable, and solicits required approvals.</p> <p>On larger projects with longer durations, FP&M utilizes spreadsheets to track actual costs against the budget and updates the spreadsheets monthly. Project expenditures are also entered into the facilities accounting module, which can be leveraged to extract data and compare against expenditures tracked on spreadsheets for accuracy.</p>	<p>1. For a sample of large / major capital projects, assess whether the project cost information (for construction and a sample of soft costs) including budgets, commitments, and actuals / expenditures were tracked, kept up-to-date, and whether costs reconcile with data per the accounting module.</p> <p>2. If budget overruns occurred on sampled projects, determine whether proper approvals per UC Facilities guidelines were solicited.</p>

6. Monitoring Field Progress Against Actual Costs
Potential risks: Field progress and the physical percent complete of the work are not compared to actual costs on a timely and recurring basis, misaligning project costs with the work in place, which may lead to potential cost overruns.

Control Title	Control Description	Testing Procedures
6.1 Monitoring Field Progress and Comparing Against Actual Costs	Local ANR superintendents and FP&M project managers hold monthly progress meetings with general contractors for large capital projects and perform site	1. For a sample of large capital projects, inquire with ANR FP&M management and obtain correspondence or meeting minutes for a sample of months, if available. Determine whether regular site walks were performed / progress

	<p>walks to assess the progression of the work against contractors' schedule of values (SOV) line items and to confirm the percent complete of each SOV component. Minutes in correspondence (e.g., emails) are usually maintained for the meetings held.</p> <p>For smaller projects, which typically comprise a single or couple of payments, local superintendents walk the site upon completion of the work by contractor to confirm work is satisfactorily performed.</p>	<p>meetings were conducted with the contractor to evaluate the physical percent complete of the work and confirm contractor costs align with the work in place.</p>
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7. Cashflow Forecasting

Potential risks: Cashflow forecasting and analysis is not performed for major capital projects (or contractors do not have to supply such forecasts), eliminating the chance for early detection of potential cost overruns.

Control Title	Control Description	Testing Procedures
7.1 Cashflow Forecasting	None	1. ANR FP&M stated general contractors do not furnish cashflow forecast reports on major capital projects; analyze general contractor contracts for a sample of major capital projects and determine whether contractors were contractually required to furnish such forecasts to ANR.

8. Change Order Management Processes

Potential risks: Change order pricing and submittal process utilized by the contractor does not comply with contractual terms. ANR's review process is not in conformance with UC Facilities Manual change management policies or industry practice, leading to additional unjustified or inflated costs.

Control Title	Control Description	Testing Procedures
8.1 Change Order Review	ANR FP&M project managers review anticipated changes with the general contractor (before an actual change order is submitted) to confirm the change request represents work beyond the base contract scope. Contractors are required to provide cost proposals along with their change orders; cost proposals are evaluated by project managers for reasonableness. If costs appear to be higher than anticipated, FP&M project managers	<p>1. For a sample of approved construction change orders, determine whether followed change management procedures by FP&M comply with contractual provisions, industry practice, and UC Facilities' guidelines, including whether detailed cost backup was submitted along with a breakdown of costs and whether change orders were reviewed and vetted before approval.</p> <p>2. For the selected sample, assess whether change orders were executed by the FP&M personnel authorized to sign and approve changes on the project.</p> <p>3. For a sample of general contractor contracts, obtain and inspect the project financial data</p>

	negotiate with the contractor or attempt to identify alternative solutions to reduce costs.	stored in BOC's accounting module to determine whether project commitments were updated to reflect the total approved changes on the project.
8.2 Change Order Tracking	None	N/A
<p>9. Inaccurate Status Reporting</p> <p><i>Potential risks: Project listing, status, cost, and schedule metrics (e.g., budget, commitments, expenditures, percentage of completion, completion dates) are not reported accurately or completely and do not tie to actual project data.</i></p>		
Control Title	Control Description	Testing Procedures
9.1 Project Status Reporting	<p>ANR FP&M reports on the status of its major capital projects (i.e., status, cost, and schedule) annually via data entry into Excel forms provided by UCOP. UCOP will then use the forms to record the project data into its database.</p> <p>Beyond the major capital project reporting noted above, there are no other project status reports that FP&M assembles (unless for ad hoc requests from UCOP's leadership that may arise occasionally inquiring about the status of a specific project).</p>	<p>1. For a sample of major capital projects and a sample of years, obtain the reports from UCOP's database for major capital projects and compare against the data (i.e., status, cost, and schedule) in actual project documentation for accuracy.</p> <p>2. Inquire with FP&M management and determine whether there have been ad hoc status reports prepared for ANR or UCOP's leadership regarding sampled projects. If so, obtain the reports and compare the data against project documentation for accuracy.</p>
9.2 Project Lists	<p>ANR FP&M maintains a Log Plant Agreement spreadsheet that contains a list of construction and professional services contracts, summary scopes of work, and original contracted amounts. Project budgets, change orders, and actual expenditures associated with each project are not tracked on the list, however, budget is tracked separately by FP&M. Change orders and actual expenditures are tracked by BOC in the accounting module.</p>	<p>1. Review the contract / project listing and data provided by ANR FP&M and, for a sample of projects, compare against the project listing and data provided by the BOC and other project documentation to assess for completeness and accuracy of FP&M-reported data.</p>
<p>10. Cost and Schedule Baseline</p> <p><i>Potential risks: Project baseline cost and schedule information are inaccurate or non-existent preventing ANR FP&M management from measuring actual performance against plan.</i></p>		
Control Title	Control Description	Testing Procedures
10.1 Budget Development	<i>Refer to Control 3.1 Budget Development.</i>	<i>Refer to Control 3.1 Budget Development.</i>

<p>10.2 Project Baseline and Updated Schedules</p>	<p>Project durations are stipulated in construction contracts; ANR FP&M relies on contractual dates to manage the project schedule, as the majority of projects are small and short in duration (typically one to two months). FP&M, however, rarely requires general contractors to provide updated schedules on larger projects and, instead, utilizes monthly progress meetings with contractors, to review the status of projects and discuss whether potential delays are anticipated.</p>	<ol style="list-style-type: none"> 1. For a sample of projects, inspect the general contractor agreements to assess whether terms related to baseline and updated schedule requirements are defined (if applicable), and whether those terms align with UC Facilities policies. 2. For sampled projects, and when contractually required, assess whether contractors submitted a baseline schedule along with their signed agreements. 3. For sampled projects, and when contractually required, assess whether contractors provided updated schedules and whether those schedules were reviewed and approved by FP&M management. 4. Assess whether sampled projects were delayed when compared to initial project schedules and, for a sample of delays, determine whether the delays were accurately documented.
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