University of Hawai'i, Board of Regents, 2444 Dole Street, Bachman 209, Honolulu, HI 96822
Telephone No. (808) 956-8213; Fax No. (808) 956-5156

Notice of Meeting

UNIVERSITY OF HAWAI'I
BOARD OF REGENTS COMMITTEE ON INDEPENDENT AUDIT
Members: Michael McEnerney (Chair), Randy Moore (Vice-Chair), and Regents Doctor Sparks, Higaki, Portnoy

Date: Thursday, March 8, 2018

Time: 9:00 a.m.

Place: University of Hawai'i at Mānoa
Information Technology Building
1st Floor Conference Room 105A/B
2520 Correa Road
Honolulu, Hawai'i 96822

AGENDA

I. Call Meeting to Order

II. Approval of Minutes of the February 7, 2018 Meeting

III. Public Comment Period: All written testimony on agenda items received after posting of this agenda and up to 24 hours in advance of the meeting will be distributed to the board. Late testimony on agenda items will be distributed to the board within 24 hours of receipt. Written testimony may be submitted via US mail, email at bor@hawaii.edu, or facsimile at 956-5156. Individuals submitting written testimony are not automatically signed up for oral testimony. Registration for oral testimony on agenda items will be provided at the meeting location 15 minutes prior to the meeting and closed once the meeting begins. Oral testimony is limited to three (3) minutes. All written testimony submitted are public documents. Therefore, any testimony that is submitted verbally or in writing, electronically or in person, for use in the public meeting process is public information.

IV. Agenda Items

A. For Action:

1. Review & Acceptance of Audit Plan Supplement: Financial Management Audit of Maunakea Activities
2. Review & Acceptance of Review of Check Disbursements Less Than $2,500
3. Review & Acceptance of Review of Capital Improvement Projects and Repairs & Maintenance

V. Adjournment

Accommodation required by law for Persons with Disabilities requires at least (5) five days prior notice to the board office at 956-8213 or bor@hawaii.edu.

University of Hawaii
Office of Internal Audit
Audit Plan – Supplement
For the Fiscal Year ended June 30, 2018

This document supplements the fiscal year 2018 Audit Plan presented by the Office of Internal Audit (Internal Audit) at the May 17, 2017 meeting of the Committee on Independent Audit (Audit Committee).

On February 22, 2018, the Board of Regents adopted a resolution requesting an audit of relevant university-related entities engaged in Maunakea stewardship and management. The University of Hawaii manages approximately 11,288 acres at the summit of Maunakea and a portion of the Summit Access Road, and also leases approximately 19.26 acres at Hale Pohaku, including mid-level support facilities and a visitor center (these areas are collectively referred to as the "Science Reserve"). Various university-related entities are involved in the management of the Science Reserve, including but not limited to the Office of Maunakea Management, Institute for Astronomy, and Maunakea Observatories Support Services, which receives administrative support through the Research Corporation of the University of Hawaii (RCUH).

Internal Audit will be meeting with the leadership of the Audit Committee and relevant University of Hawaii personnel to define the scope and objectives of this audit, which may include contracting with an external auditor for services.

Type:	Financial, Operational
Period:	Fiscal years 2010 through 2017
Estimated time of performance:	March 2018 – September 2018

University of Hawai‘i Board of Regents

R E S O L U T I O N

Requesting Financial Management Audit of Maunakea Activities

WHEREAS, the University of Hawai‘i (“university”) recognizes its kuleana and role in the responsible management and stewardship of Maunakea across multiple dimensions; and

WHEREAS, in 1968, the State Department of Land and Natural Resources (“DLNR”) issued a 65-year lease to the university, as lessee, for approximately 13,321 acres situated atop Maunakea for use as a science reserve; and

WHEREAS, in 1998, by mutual agreement approximately 2,033 acres were withdrawn from the lease, leaving an area of approximately 11,288 acres at the summit of Maunakea under the management of the university; and

WHEREAS, in 1999, DLNR conveyed to the university a 55-year lease for approximately 19.26 acres at Hale Pohaku – mid-level support facilities and visitor center; and

WHEREAS, pursuant to a non-exclusive easement with DLNR, the university also manages a portion of the Summit Access Road between Hale Pohaku and the university-managed summit area (the total acreage of the summit area, Hale Pohaku mid-level facilities area, and Summit Access Road easement area under university management is hereinafter referred to as “Science Reserve”); and

WHEREAS, in April 2009, a Comprehensive Management Plan that had been developed by the university and approved by the Board of Regents was adopted by the State Board of Land and Natural Resources (“BLNR”) to provide a management framework to address existing and future uses and activities within the Science Reserve; and

WHEREAS, on March 25, 2010, the BLNR approved four sub-plans that had been developed by the university and approved by the Board of Regents addressing public access, cultural resources management, natural resources management, and decommissioning, which were incorporated into the Comprehensive Management Plan (hereinafter collectively referred to as “CMP”); and

WHEREAS, public concerns have emerged and been made known to the Board of Regents and university administration regarding the university’s operational and financial management of the Science Reserve through various university-related entities including but not limited to the Office of Maunakea Management, Institute for Astronomy, and Maunakea Observatories Support Services, which receives administrative support through the Research Corporation of the University of Hawai‘i (RCUH); and

WHEREAS, the Board of Regents desires that these public concerns be objectively studied and properly addressed; and

R E S O L U T I O N

WHEREAS, the State Auditor has conducted several audits of the management of Maunakea and the Science Reserve and has published several follow-up recommendations to those management audits, as recently as July 2017 (Report No. 17-06); and

WHEREAS, the audits conducted by the State Auditor were management and compliance audits and did not include a financial management audit.

NOW, THEREFORE, BE IT RESOLVED that the Board of Regents hereby requests, in conjunction with the university administration, that the University of Hawai‘i Office of Internal Audit perform a financial management audit of the relevant university-related entities engaged in Maunakea stewardship and management; and

BE IT FURTHER RESOLVED that the audit shall:

(1) Study all university funds, lease payments, and any external funds that are received and used in the support of stewardship, management, education, and other activities related to Maunakea; and

(2) Review transfers of funds between entities including both the university and RCUH, and payments made to university-related support programs by Maunakea observatories or other third parties; and

BE IT FURTHER RESOLVED that the Board of Regents requests that this audit be commenced no later than March 1, 2018, and a report made to the Board of Regents no later than September 30, 2018; the final audit report shall summarize findings and shall also contain specific recommendations on improvements to existing practices or procedures.

Adopted by the Board of Regents
University of Hawai‘i
February 22, 2018

UNIVERSITY OF HAWAIʻI

REVIEW OF CHECK DISBURSEMENTS LESS THAN $2,500

January 2018

University of Hawaiʻi
Office of Internal Audit

UNIVERSITY of HAWAI'I SYSTEM

January 12, 2018

To the University of Hawai'i Board of Regents
and
University of Hawai'i Director of Finance and Chief Financial Officer (CFO)

In 2014, the University of Hawai'i (University) designated the Purchasing Card (PCard) as the preferred method of purchase for goods and services less than $2,500. Also during 2014, the University's former Vice President of Budget and Finance/Chief Financial Officer reported that PCard purchases are more cost efficient than processing payments with a check. For the three years ended June 30, 2017, annual check disbursements as reflected on the University's check register approximated $900 million. Of this annual amount, approximately $50 million related to check disbursements less than $2,500, of which approximately $17 million was related to purchases without an identifiable exception. Accordingly, Internal Audit believes PCards may be underutilized.

Overall, Internal Audit believes University Units and employees are making an effort to use PCards for transactions less than $2,500. To understand the significant reasons for potential PCard underutilization, Internal Audit surveyed a sample of Fiscal Administrators and Vice Chancellors of Administration across campuses, colleges, schools and departments (Units). Pursuant to the survey responses and other work performed by Internal Audit, it was determined that PCards have been underutilized for purchases less than $2,500 due to the following:

- A perceived administrative burden of reviewing and approving PCard transactions
- Inability to obtain PCards due to infrequent PCard training
- Restrictions on travel-related purchases
- Uncertainty regarding the allowability of using PCards to pay for previously received goods and services
- PCard moratoriums may have been too severe

Increasing PCard usage will increase cost efficiencies within the University as well as the rebates received from the University's PCard issuer, First Hawaiian Bank. Internal Audit believes addressing the matters listed above will assist the University in achieving this objective.

Sincerely,

Glenn Shizumura
Director

Background / Objectives

In September 2014, the University of Hawai'i (University) implemented a new Purchasing Card (PCard) policy and procedure (Administrative Procedure AP 8.266) designating the PCard as the preferred method of purchase for goods and services less than $2,500. The PCard Administrator's website contains a list of allowable exceptions to this policy. A written justification is required by the Kuali Financial System (KFS) for purchases less than $2,500 utilizing a purchase order. AP 8.806, Roles and Responsibilities for Payment Transaction Processing, states that Fiscal Administrators (FAs) and program managers (approving authority / account supervisor) are responsible for ensuring payments are in compliance with University Policies and Procedures, with the Disbursing and Payroll Office (Disbursing Office) responsible for conducting the final compliance review.

Also in 2014, in order to gain a better understanding of the efficiencies provided by the new PCard policy, the Board of Regents requested a review by University management of the estimated costs of processing payments via check versus PCard. As reported at the October 15, 2014 Board of Regents' Committee on Independent Audit meeting, the University's former Vice President of Budget and Finance/Chief Financial Officer reported that the costs incurred in using PCards is less than processing payments via check, though the exact amount of cost savings per payment was not quantified.

In 2016, Internal Audit evaluated the policies and procedures of the University's PCard Program, as well as the related processes and controls (report dated May 2016). Internal Audit also conducted a follow up review in 2017 (report dated July 2017). The July 2017 report noted that the practices established and implemented by the PCard Administrator were sufficient to mitigate risks associated with PCard transactions. However, the report also noted three improvement opportunities: 1) include more timely notification to Senior Management of unapproved PCard transactions 2) modify the planning of PCard audits to focus on higher risk transactions, Cardholders, and Units (as defined below) 3) consider reducing the number of restricted Merchant Category Codes (MCCs are the four-digit number that identifies the primary type of goods/services provided by the merchant). Generally, Cardholders are not authorized to purchase goods and services from merchants associated with approximately 750 of 1,000 available MCCs, which Internal Audit believed could be decreased as a result of existing complementary controls. However, Internal Audit noted that the PCard Administrator's website identifies various MCC groups (merchants aggregated and classified by the PCard Administrator with restrictions on purchases from these groups) that FAs may request the PCard Administrator to permanently allow on behalf of a Cardholder.

The objective of this review is to evaluate AP 8.266 compliance (specifically, the designation that the PCard is the preferred method of purchase for goods and services less than $2,500) within University campuses, colleges, schools and departments (Units) and assess efficient and effective use of resources with respect to purchases less than $2,500.

Work Performed

Internal Audit reviewed University purchasing policies and obtained the University's check register from the Financial Management Office for check disbursements less than $2,500 for the years ended June 30, 2017, 2016 and 2015. In connection with the check register, Internal Audit performed analytics to determine the volume and frequency of checks processed for purchases less than $2,500. Finally, Internal Audit surveyed a sample of FAs and Vice Chancellors of Administration (VCAs) across the University as to their practices and procedures in regards to check disbursements less than $2,500, and researched higher education institutions within the Pac-12, Mountain West and Big West conferences, as well as other universities located in the State of Hawai'i (collectively called 'comparable universities' heretofore). The purpose of the survey and research of higher education institutions was to understand the types and extent of purchases allowable under their respective PCard policies.

Summary of University Disbursements

The Disbursing Office is the University's Systemwide office responsible for processing all University payments, including those submitted and authorized via purchase order. Total check disbursements as recorded in the University's check register for the years ended June 30, 2017, 2016 and 2015 were as follows:

Table 1:

	June 30 (in 000's, except # of checks)					
	2017		2016		2015	
Check Disbursement Attribute	**# of Checks**	**Amount**	**# of Checks**	**Amount**	**# of Checks**	**Amount**
Greater than $2,500	17,329	$ 838,713	17,234	$ 854,182	18,028	$ 890,071
Less than $2,500 with identified exception*	51,132	33,980	53,343	35,202	59,398	39,709
Other Less than $2,500 **	32,354	17,149	31,990	16,924	31,919	16,713
Total	**100,815**	**$ 889,842**	**102,567**	**$ 906,308**	**109,345**	**$ 946,493**

***** Includes check disbursements related to travel, utility payments, contracts, employee reimbursements, etc.

****** Check disbursements in this category may or may not be pursuant to a policy exception. Determination can only be made via a detailed review of each transaction and supporting documentation.

First Hawaiian Bank (FHB) issues the University's PCards. Accordingly, the above table includes payments to FHB for the University's P-Card transactions. For the years ended June 30, 2017, 2016 and 2015, the annual payments approximated $25.1 million, $25.6 million and $25.1 million respectively.

For the purpose of determining if the check register provided to Internal Audit included all check disbursements, Internal Audit requested the assistance of the Financial Management Office to reconcile check register disbursements to cash outflows per the University's Consolidated Statements of Cash Flows for the years ended June 30, 2017, 2016 and 2015:

Table 2:

	June 30 (in 000's)		
	2017	**2016**	**2015**
Gross Cash Outflows			
Operating activities	$ 1,313,781	$ 1,293,552	$ 1,299,687
Capital and related financing activities	200,710	155,695	183,346
Total	**1,514,491**	**1,449,247**	**1,483,033**
Reconciling Items			
State of Hawai'i general appropriations not received/paid in cash	(470,200)	(441,459)	(413,884)
State of Hawai'i capital appropriations not received/paid in cash	(109,255)	(85,940)	(111,762)
Net University of Hawai'i Foundation (UHF) and Research Corporation of Hawai'i (RCUH) payments	(31,662)	(27,940)	(10,936)
Net State of Hawai'i related (payments)/receipts	22,204	25,641	15,098
Debt service paid via wire transfer	(46,140)	(28,790)	(20,251)
Other reconciling items	10,404	15,549	5,195
Total	**$ 889,842**	**$ 906,308**	**$ 946,493**

For Other check disbursements less than $2,500 noted in **Table 1**, Internal Audit noted the following breakdown amongst University campuses during the year ended June 30, 2017:

Table 3:

	Check Disbursements Less Than $2,500 during the year ended June 30, 2017			
University Campus	**# of Checks**	**Amount**	**% of Total**	**# of Cardholders (October 2017)**
Mānoa	19,260	$10,145,801	59	842
Kapi‘olani Community College	2,578	1,558,576	9	31
Hilo	2,394	1,141,426	7	123
Multiple Campuses	968	810,502	5	Not available
Hawai‘i Community College	1,397	538,786	3	43
Leeward Community College	1,143	511,230	3	44
Maui	1,164	437,567	3	41
West O‘ahu	797	428,660	2	13
Honolulu Community College	711	423,337	2	53
Kaua‘i Community College	648	415,021	2	24
System	678	389,677	2	73
Windward Community College	439	254,111	2	34
Community Colleges Administration	177	94,638	1	11
TOTALS	**32,354**	**$17,149,332**	**100**	**1,332**

The University departments with the greatest Other check disbursements less than $2,500 for the year ended June 30, 2017 were as follows:

	Other Check Disbursements Less Than $2,500	
University Department	**# of Checks**	**Amount**
Manoa Bookstore	3,605	$2,088,613
Manoa Athletics	1,575	824,737
Manoa Student Housing Services	1,909	823,949
Office of Planning and Facilities	1,222	696,552
Office of Student Life and Development	809	477,092
Manoa Library Services	894	447,666
UH Press	637	443,795

During the year ended June 30, 2017, Internal Audit noted the following with respect to check disbursements less than $100:

Table 4:

Dollar range	**# of Checks**	**Aggregate Amount**
$0.01-$1.00	98	$ 30
$1.01-$5.00	205	693
$5.01-$20.00	1,134	14,282
$20.01-$100.00	6,988	387,267

Within the $0.01 - $1.00 range, there were two checks amounting to $0.01, three checks amounting to $0.03, one check amounting to $0.04, and eighteen checks amounting to between $0.05 and $0.10. Internal Audit noted that check disbursements less than $5.00 related to payments for various goods and services, including: telecommunications charges, supplies purchased as part of a larger purchase order (e.g., office supplies, hardware supplies, food and beverage, etc.) and employee reimbursements.

Observations and Analysis

A. Surveys

To determine the current practices and procedures used to make payments for goods and services less than $2,500 across the University, Internal Audit surveyed a sample (including at least one from each campus) of FAs and VCAs (collectively referred to as "respondents") at 16 Units. Respondents were requested to incorporate information for the year ended June 30, 2017 and through the date of their response (response due date of November 30, 2017). These Units were selected based on quantitative and qualitative attributes. Accordingly, Units with the greatest cumulative dollar amount of check disbursements less than $2,500 (without an obvious allowable exception as noted on the PCard website) during the year ended June 30, 2017 as well as all Community College campuses were selected to be surveyed. The Units surveyed represented approximately $12 million of the $17 million of other check disbursements less than $2,500 (as per **Table 1**) which Internal Audit deemed sufficient to provide a reasonable cross-section of the University to gain insights into the reasons why PCards are not always used for allowable transactions under $2,500. The total number of respondents was eighteen, a one hundred percent response rate. A summary of the questions and the aggregated responses is shown in Appendix A. Internal Audit noted the following key takeaways from the survey responses:

- 50% of respondents noted that PCards were their most common method of paying for goods/services less than $2,500
- 66% of respondents believe PCards are the most efficient payment method for purchases less than $2,500
- 69% of respondents believe PCards are underutilized within their Unit
- The most frequent impediments noted for use of PCards were: 1) Blocked MCCs (12), and 2) Administrative burden (i.e., monthly review of PCard transactions and follow up with Cardholders to ensure compliance with AP 8.266) for PCards is too great (12)
- The most common goods and/or services under $2,500 for which a check was used were: 1) Supplies (10), 2) inventory (7), and 3) travel-related expenses (6)
- 61% of respondents believe they have a sufficient number of Cardholders within their Unit
- 33% of respondents noted their Unit has faced challenges in obtaining PCards, including: 1) Unit was penalized for prior violations with AP 8.266 (known as a PCard moratorium) and could not obtain additional PCards, and 2) the issuance of PCards is a time consuming and arduous process (in some instances, respondents noted that the issuance of PCards took between two and five months due to the PCard Administrator reviewing the application by section rather than its entirety such that revisions were requested piecemeal every few weeks rather than collectively)
- 56% of respondents noted that the FA's review of documents supporting a check disbursement includes determining whether a PCard would be a more efficient option for payment

Additionally, the respondents were asked to provide suggestions to improve the process to pay for goods and/or services less than $2,500 on a Systemwide basis as well as at their individual Unit. The following common responses were given:

- Improve the KFS monthly PCard transactions approval module by allowing the supporting documentation for each purchase to be attached on the same transaction line as the merchant and amount.
- The frequency of PCard training is insufficient.

- The unblocking process for blocked MCCs is too difficult and time consuming, making it more efficient to pay via a check. In particular, travel costs could be paid more efficiently via PCard.
- When a PCard cannot be used pursuant to AP 8.266 it would be more efficient to make payments via Electronic Funds Transfer (EFT) than check.
- Allow PCards to be used for certain "after-the-fact" payments if the Cardholder approved the purchase.

Finally, the respondents were asked to review a listing of check disbursements less than $2,500 for their Unit during the year ended June 30, 2017, and provide the common reasons why PCards were not used for payment. The survey respondents provided the following common responses to their respective listing:

Allowable Exceptions
- Vendors do not accept credit card payments
- Incremental payments were less than $2,500, but the total amount of transactions under the open purchase order was greater than $2,500
- Refunds, reimbursements and construction-related purchases cannot be made via PCard
- Travel-related expenses

Other responses
- Unit's fiscal office staff is too small to handle the administrative burden of a high volume of PCard transactions
- Low number of Cardholders
- The Unit is comfortable using purchase orders and tends to default to checks as their preferred payment method for purchasing goods and services.

Analysis
Internal Audit's review of survey responses noted that while some of the responses as to why PCards were not used to purchase goods and services less than $2,500 were allowable exceptions pursuant to the PCard Administrator's website, others (those in the Other responses section above) would not be considered allowable exceptions. Additionally, most respondents believe PCards are the most efficient method to pay for purchases less than $2,500 (66%), however, the majority believe PCards are underutilized within their Unit (69%). Based on survey responses and other procedures performed by Internal Audit, the underutilization of PCards is primarily due to:

- Currently, Internal Audit noted that the KFS transaction approval module does not allow the supporting documentation for each PCard transaction to be attached directly to the same transaction line as the merchant and amount. Instead, all supporting documentation (receipts, invoices, etc.) is combined in KFS by Cardholder such that the reviewer must manually match the support with each related transaction. However, Internal Audit does not believe this purported inefficiency in KFS creates a significant time or administrative burden as the implementation of manual processes could mitigate this criticism.

- Per discussion with a few FAs, Internal Audit noted that online PCard training for new Cardholders is conducted by the PCard Administrator approximately once per month. If the training date is missed, it can result in delays in new Cardholders receiving their PCards. Additionally, an exam must be taken at the conclusion of training and passed with a score of 90% (nine out of ten correct answers) or greater. However, the scoring of the exam does not occur in real time, which may lead to additional delays if the exam must be retaken.

- Internal Audit noted that a significant number of MCC codes are blocked (restricted). In particular, a substantial number of travel-related MCC codes (airfare, lodging, rental cars, etc.) are blocked, and the

unblocking process is time consuming. Internal Audit believes many of these MCC codes could be unblocked without increasing the risk of improper purchases via PCards. Internal Audit noted that some MCC groups allow travel-related MCCs such as airfare, rental cars and restaurants to be unblocked. However, Internal Audit noted that no MCC groups allow PCards to be used for lodging and the 'Basic Cardholder Privileges' group, which is used for the majority of Cardholders, prevents purchases for all travel-related categories. Travel expenses are already highly controlled, with all travel requiring pre-approval by the employee's Approving Authority (e.g., Supervisor and/or Principal Investigator/Program Manager) and FA. Out-of-state travel requires additional pre-approval by the Executive Approving Authority. Upon travel completion, a report detailing all travel expenses must be reviewed and approved by the employee's FA. Internal Audit's "Review of Travel Policy Compliance" report dated September 2017 noted that the Disbursing Office performed compliance audits on 78% of University travel expenses prior to disbursement for the year ended June 30, 2017.

- Five of the respondents mentioned "after-the-fact" payments as one type of payment prohibited by the PCard Administrator. Internal Audit noted that according to the PCard website, an after-the-fact purchase is "a procurement made without authorization; the request for approval of the purchase is made after the purchase has occurred, thus violating the proper procedures." The website goes on to state that a "PCard is a purchasing card, not a payment card, so the PCard transaction must be made at the time the goods are ordered or the services rendered." Per discussion with a FA, a common example is when a Cardholder requests and receives goods or services (e.g., repairing a printer/copier) and the vendor issues an invoice subsequent to providing the goods or services. Thus, payment would be made after the receipt of goods or services. The VPA informed Internal Audit that an "after-the-fact" payment would not apply in this example, as the purchase was made with proper authorization. However, Internal Audit noted that there seems to be some confusion within the Units surveyed as to the meaning of 'after-the-fact' and what types of PCard purchases it applies to.

- Four respondents noted that PCard moratoriums are an impediment to PCard usage. One Unit surveyed noted that their PCard moratorium covered their entire campus and lasted approximately nine months. During this time, the campus had substantial turnover, including the supervising FA for the entire campus, and were unable to obtain new PCards for new employees, causing checks to be required to pay for certain goods and services for which a PCard would've otherwise been used. Internal Audit believes consequences for noncompliant PCard use is necessary, but that the PCard Administrator should consider, whenever possible, levying consequences on the individual responsible for a PCard violation, rather than an entire campus.

B. Research on comparable universities

Internal Audit researched the PCard policies of comparable universities to understand the types of goods and services that may be paid for using a PCard, noting the following:

- Many of the types of goods and services restricted by the comparable universities were similar in nature to the MCCs blocked by the University's PCard program (e.g., gambling, alcohol, personal transactions, etc.)
- 26% (nine of 34) of the comparable universities allowed PCards to be used to purchase airfare
- 21% (seven of 34) of the comparable universities allowed PCards to be used to purchase meals while traveling
- 32% (11 of 34) of the comparable universities allowed PCards to be used to purchase lodging
- 82% of the comparable universities either allowed PCards to be used to purchase travel-related goods/services, or provided a separate travel card to make such payments

Analysis
Internal Audit noted that approximately a quarter of the comparable universities allow PCards to be used for travel-related payments. Additionally, the majority (74%) of the comparable universities that do not allow PCards to be used for such payments provide a separate university-issued travel card. As noted previously, the University generally does not allow (by blocking MCCs) PCards to be used for travel-related payments (unless a temporary or permanent unblock is authorized). As noted in Internal Audit's *Review of Travel Policy Compliance* report issued in September 2017, the risks related to the University paying for unauthorized and improper travel expenses are low due to the effective review and approval process at both the Units and within the Disbursing Office's pre-audit group. Thus, Internal Audit believes blocking all travel-related MCCs for the majority of Cardholders (i.e., those with Basic Cardholder Privileges) is an unnecessary and redundant control that provides minimal, if any, benefit to the University.

C. Cost savings and rebates:
As noted in the Background section of this report, the University previously determined that the overall cost of a PCard payment is less than that of a check payment. To validate this assertion, Internal Audit reviewed process flowcharts prepared and published by the University's Financial Management Office for payments made via both PCard and check (see summarized versions in Appendices B and C, respectively), and noted the administrative process for reviewing and approving PCard transactions is substantially less onerous than that for generating a check. Check payments require a Purchase Requisition, Purchase Order, Invoice, and Payment Request (PREQ) to be reviewed and approved (by approving authorities and FAs) prior to disbursement in addition to the involvement of the Disbursing Office (staff and supervisors review supporting documentation and generate check payments). PCard payments that are generally limited to $2,500 do not require as many documents and reviews. Also of note is that the PCard review process occurs once a month for each Cardholder's transactions as a whole, while each check payment must be processed individually. Additionally, as noted in the Surveys section of this report, 66% of FAs believe PCards are a more efficient method of payment than check disbursements.

The University's agreement with FHB provides a 1.33% rebate on all purchases. Internal Audit was informed that these rebates are deposited into a KFS account to fund the PCard Administrator's operations. The following table reflects the annual FHB rebate and the KFS rebate account balance as of and for the three years ended June 30, 2017:

Table 5:

	June 30		
	2017	**2016**	**2015**
PCard rebates	$ 334,174	$ 339,928	$ 333,453
Account balance	1,489,015	1,318,557	1,068,010

Internal Audit performed a sensitivity analysis of the University's potential cost savings and rebates by using a range of possible cost savings across a range of percentages of payments (i.e., Sensitivity Level) for which a PCard could have been used during the year ended June 30, 2017 (using a baseline of $17,149,332 and 32,354 checks as noted in **Table 1**):

Table 6:

	Potential FY17 Cost Savings per transaction				
Sensitivity Level	**$10**	**$25**	**$50**	**$100**	**Potential 2017 Rebates**
100%	$323,540	$808,850	$1,617,700	$3,235,400	$228,086
75%	242,655	606,638	1,213,275	2,426,550	171,065
50%	161,770	404,425	808,850	1,617,700	114,043
25%	80,885	202,213	404,425	808,850	57,022

As illustrated by **Table 6**, even if only 25% of the check payments less than $2,500 could have been made using PCards, and only $10 was saved per transaction, the University could have saved in excess of $80,000 and earned over $50,000 in additional rebates during the year ended June 30, 2017. Furthermore, additional rebates in excess of $400,000 could have been earned for the year ended June 30, 2017 if PCards were permitted to be used for the University's approximately $33 million (as noted on the University's audited financial statements) in travel expenses.

Conclusions

Making a greater number of payments less than $2,500 using PCards rather than checks will provide both cost savings as well as additional rebates to the University. Overall, Internal Audit believes University Units and employees are making an effort to implement PCards as their preferred method of purchasing goods and services less than $2,500 (unless an exception is met) in accordance with AP 8.266. However, in practice PCards have not always been used for purchases less than $2,500 due to the following:

1. **There is a perceived administrative burden of reviewing and approving PCard transactions**

   Internal Audit believes that reviewing and approving PCard transactions on a monthly basis is more efficient and cost effective than paying via check, however a number of FAs perceive the opposite. This is likely due to all PCards transactions for a month being reviewed at one time, rather than spread out over the course of a month. However, Internal Audit believes this monthly review makes the PCard review process more efficient. Each Unit should consider implementing their own procedures (if they haven't already) with a focus on improving the efficiency and effectiveness of their PCard review and approval process.

2. **On-demand PCard training**

   Internal Audit suggests that the PCard Administrator consider moving to an on-demand online training platform with real-time scoring of the examination and the option to retake the exam immediately if a passing score is not achieved. This will reduce the delays in new Cardholders receiving PCards.

3. **Greater access to travel-related MCCs**

   Based on the audit of travel in September 2017, Internal Audit believes the University has robust travel expense controls. Thus, the PCard Administrator should consider unblocking travel-related MCCs for Cardholders with Basic Cardholder Privileges. As an alternative, the PCard Administrator should consider raising awareness via communication with FAs regarding their ability to permanently unblock travel-related MCCs for their Cardholders by assigning them to a new MCC group. Additionally, the PCard Administrator should consider including lodging in one or more of the MCC groups. Internal Audit is also aware that the Disbursing Office is investigating the possible implementation of a travel card for use by travelers, which would alleviate this recommendation.

4. **The definition of "after-the-fact" purchases should be clarified**
   Internal Audit believes the survey comments regarding after-the-fact purchases were due to confusion as to the meaning of the term and when it applies. The PCard Administrator should consider clarifying this policy on their website and in training materials, and use requisite examples as to the nature and types of purchases that are or are not violations of this rule. Additionally, the PCard Administrator should consider communicating this clarification directly to FAs and Cardholders.

5. **PCard moratoriums may have been too severe**
   Internal Audit believes moratoriums levied on an entire Unit should be the rare exception, and only under circumstances in which there are significant breaches of AP 8.266 across multiple Unit personnel. Even in such rare circumstances, consideration should be given to allowing some new Cardholders (e.g., new FAs) during the moratorium. In most cases, the violating Cardholder should bear the consequences of noncompliance with policy. Before levying a moratorium on an entire Unit, the Unit should have the opportunity to implement corrective actions (e.g., additional training, new procedures, new Cardholders, etc.).

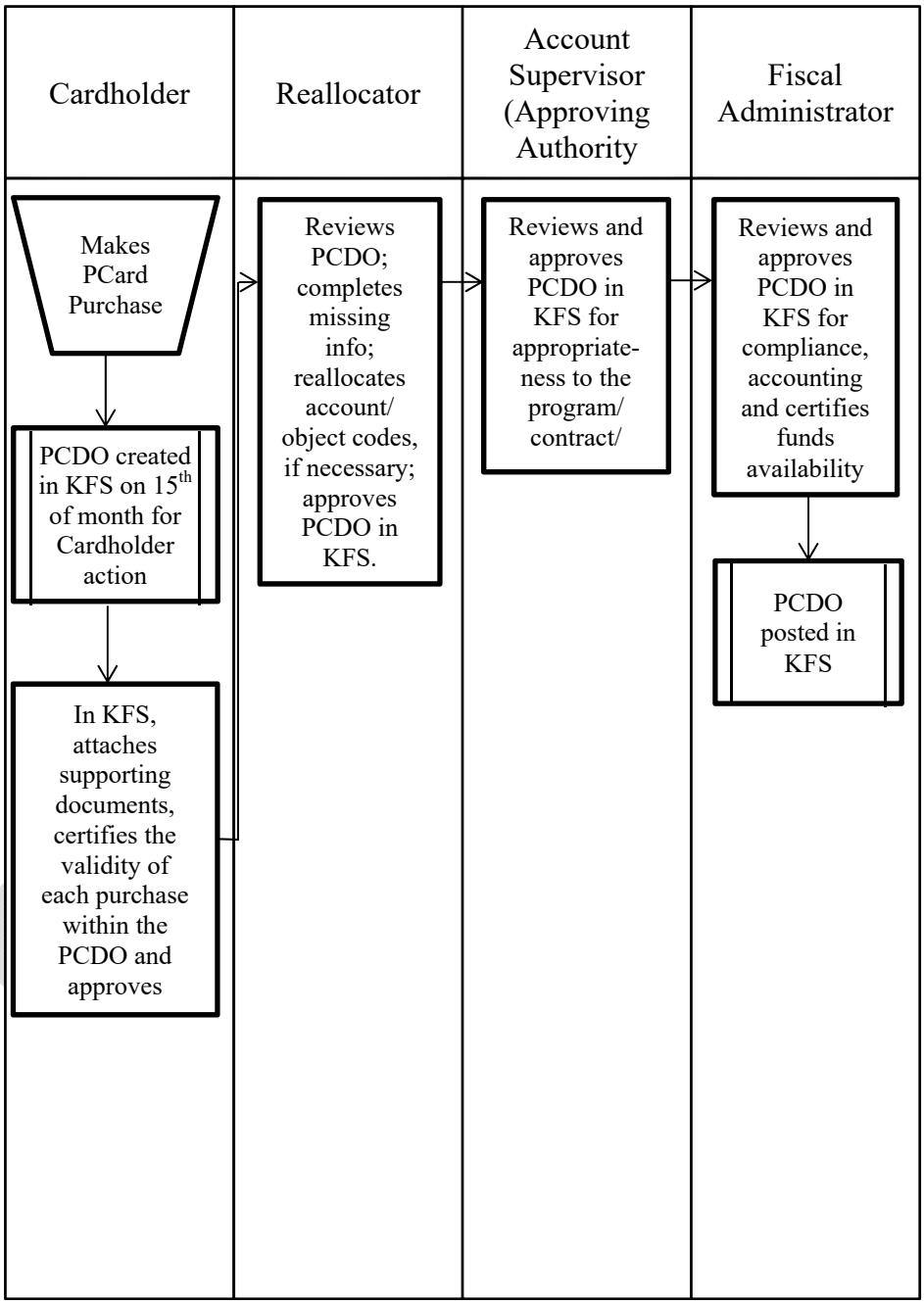
6. **Alternative uses for surplus PCard rebate account balance**
   Due to a surplus, Internal Audit noted that the amount of the PCard rebate account continues to grow year over year, reaching approximately $1.5 million for the year ended June 30, 2017. Given the surplus, management should consider alternative University uses for account balances greater than what is needed per the PCard Administrator's budget for the following fiscal year.

Appendix A
Survey Questions and Summarized Responses

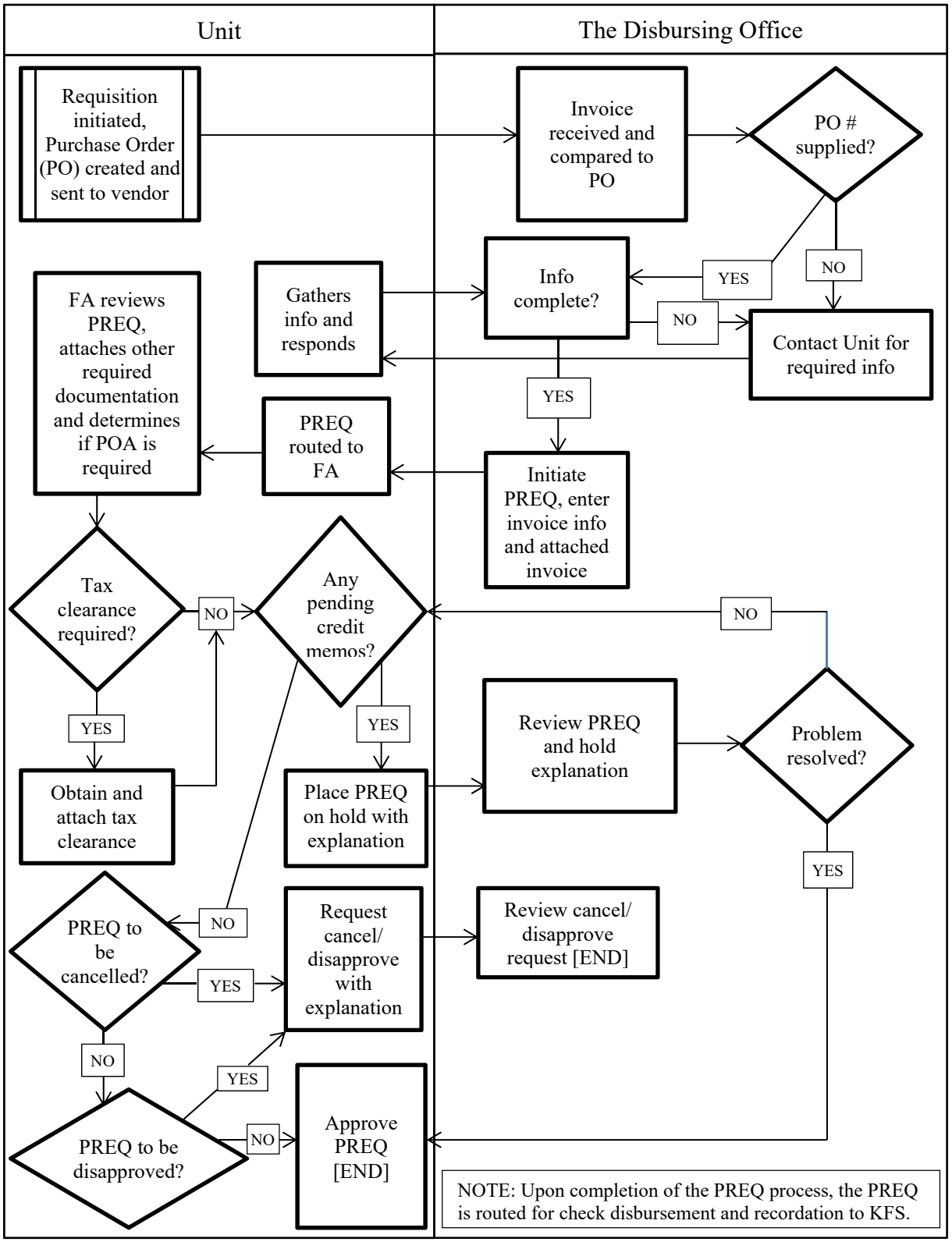
Question 1	Payment request by check	PCard	Employee reimbursement	Other
What is your Unit's most common method to pay for goods and/or services less than $2,500?	40%	50%	0%	10%
Question 2	**Yes**	**No**	**Neither**	
Are PCards a more efficient payment method for purchases less than $2,500 within your Unit when compared to checks?	66%	28%	6%	
Question 3	**Over**	**Under**	**Neither**	
Do you believe PCards are over or underutilized within your Unit?	6%	69%	32%	
Question 4	**Count**			
What are the primary impediments, if any, to using PCards? (choose all that apply)				
• Unit does not have a PCard	0			
• Not enough Cardholders within the Unit	7			
• Moratorium on use of PCards for prior violations	4			
• Blocked Merchant Category Codes (MCCs)	12			
• Cardholder limits are too low	2			
• Unit preference is not to use PCards	6			
• Vendor prefers payment via check	6			
• Administrative burden for PCards is too great	12			

• Other		7		Common "Other" impediments noted: PCard restrictions make Cardholders unwilling to use them, "after-the-fact" purchases				
• There are no impediments to using PCards within my unit		0						
Question 5		**Count**						
Please identify the most common goods and/or services under $2,500 acquired by your Unit utilizing a check (choose all that apply).								
• Supplies		10						
• Medical expenses		1						
• Resale items		7						
• Equipment		2						
• Advertising/Marketing		1						
• Periodicals		3						
• Other		15		Common "Other" goods/services noted: travel expenses, cell phone charges, various services for which a contract is required, and meal expenses.				
Question 6		**Sufficient**		**Slightly less than sufficient**		**Not sufficient**		**# of card-holders**
Which of the following best describes your Unit with respect to the number of Cardholders?		61%		22%		17%		Avg: 30 Low: 3 High: 125
Question 7		**Yes**		**No**		**Common Challenges**		
Has your Unit faced any challenges in obtaining PCards?		33%		67%		1. Unit was on a moratorium and could not obtain additional PCards. 2. PCard training is infrequent. 3. The issuance of PCards is a long and arduous process.		
Question 8		**Yes**		**No**		**Sometimes**		
Within your Unit, does the FA's review of documents supporting the check disbursement include determining whether a PCard would be a more efficient option for payment?		56%		33%		11%		

Appendix B
Monthly PCDO review and approval process



Appendix C
Payment request (PREQ) process



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Jan S. Gouveia
Vice President for Administration

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UNIVERSITY OF HAWAII
PRESIDENT'S OFFICE

March 2, 2018

MEMORANDUM

TO: Chair Michael McEnerney
Board of Regents Committee on Independent Audit

VIA: David Lassner
President

FROM: Jan Gouveia
Vice President for Administration

SUBJECT: MANAGEMENT RESPONSE TO OFFICE OF INTERNAL AUDIT, UNIVERSITY OF HAWAI'I, REVIEW OF CHECK DISBURSEMENTS LESS THAN $2,500, JANUARY 2018 AUDIT ("Audit")

GENERAL RESPONSE

Check disbursement operations at the University of Hawai'i ("University") are managed by the Disbursing Office within the Office of the Vice President for Budget and Finance. Despite the title of the immediate audit, the report states that its objective is to evaluate AP 8.266 (Purchasing Cards) compliance within University campuses, colleges, schools and departments ("Units") and assess efficient and effective use of resources with respect to purchases less than $2,500. Although the report was directed to the Vice President for Budget and Finance, the primary focus of the report was the University's Purchasing Card Program. As such, the report was forwarded to the Office of the Vice President for Administration for response.

The Audit appears to draw conclusions and make recommendations on the Purchasing Card ("PCard") program based on survey results received from 18 individuals, who are either Fiscal Administrators or Vice Chancellors for Administration. There are over 1,350 PCard holders and at least 275 employees with fiscal authority to generate purchase orders. Yet, the approach taken in this Audit appears to rely on answers to survey questions sent to a target market of individuals - some of whom may be the farthest removed from day-to-day transactions. Additionally, as more specifically identified below, the conclusions and recommendations appear to be based on a singular comment or event, without taking into consideration the larger context of program integrity. These broader issues have already been raised and addressed in Management's earlier response to a similar audit in July 2017.

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PCARD AUDIT BACKGROUND

In general, the conclusions and recommendations in this Audit are similar to those set forth in the December 2015 University of Hawai'i Purchasing Card Program Audit ("2015 PCard Audit") and the July 2017 University of Hawai'i Purchasing Card Program Follow-Up Review ("2017 PCard Audit Follow-Up").[1] Our responses to both the 2015 PCard Audit and the 2017 PCard Audit Follow-Up remain unchanged and will be restated below.

The University's PCard program is based on Approving Authorities and Fiscal Administrators ("FAs") controlling what happens in their respective Units. More specifically, the Approving Authority and Fiscal Administrator determine what dollar thresholds and purchasing authority should be granted to individual card holders in their Unit – the PCard Administrator simply provisions these limits within the system. Management believes this business model ensures the best balance between risk of unauthorized transactions and efficient operational transactions. Similar to its position in the 2015 PCard Audit and the 2017 PCard Audit Follow-Up, however, the Office of Internal Audit ("Internal Audit") in this Audit generally believes that the University should provide a more blanket lifting of current restrictions to increase usage of the PCard. Management believes this increases risk and liability exposure to the University, without providing an analysis of whether such risks are offset by any efficiencies gained.

RESPONSE TO CONCLUSIONS

1. There is a perceived administrative burden of reviewing and approving PCard transactions

Internal Audit believes that reviewing and approving PCard transactions on a monthly basis is more efficient and cost effective than paying via check, however a number of FAs perceive the opposite. This is likely due to all PCards transactions for a month being reviewed at one time, rather than spread out over the course of a month. However, Internal Audit believes this monthly review makes the PCard review process more efficient. Each Unit should consider implementing their own procedures (if they haven't already) with a focus on improving the efficiency and effectiveness of their PCard review and approval process.

Analysis

Currently, Internal Audit noted that the KFS transaction approval module does not allow the supporting documentation for each PCard transaction to be attached directly to the same transaction line as the merchant and amount. Instead, all supporting documentation (receipts, invoices, etc.) for an individual Cardholder are combined in KFS such that the reviewer must manually match the support with each related transaction. However, Internal Audit does not believe this purported inefficiency in KFS creates a significant time or administrative burden as the implementation of manual processes could mitigate this criticism.

[1] The Audit references a May 2016 report, however we believe this references the December 2015 University of Hawai'i Purchasing Card Program Audit that was accepted by the Independent Audit Committee at its August 4, 2016 meeting.

Management Response: We agree with this finding and conclusion as a general proposition. However, the Vice President for Administration believes this is one of the largest contributing factors to why PCard transactions are not utilized more often.

2. **On-demand PCard training**

Internal Audit suggests that the PCard Administrator consider moving to an on-demand online training platform with real-time scoring of the examination and the option to retake the exam immediately if a passing score is not achieved. This will reduce the delays in new Cardholders receiving PCards.

Analysis

Per discussion with a few FAs, Internal Audit noted that online PCard training for new Cardholders is conducted by the PCard Administrator approximately once per month. If the training date is missed, it can result in delays in new Cardholders receiving their PCards. Additionally, an exam must be taken at the conclusion of training and passed with a score of 90% (nine out of ten correct answers) or greater. However, the scoring of the exam does not occur in real time, which may lead to additional delays if the exam must be retaken.

Management Response: We agree that on-demand online training should be made available. We anticipate having this in place within one year.

3. **Greater access to travel-related MCCs**

Based on the audit of travel in September 2017, Internal Audit believes the University has robust travel expense controls. Thus, the PCard Administrator should consider unblocking travel-related MCCs for Cardholders with Basic Cardholder Privileges. As an alternative, the PCard Administrator should consider raising awareness via communication with FAs regarding their ability to permanently unblock travel-related MCCs for their Cardholders by assigning them to a new MCC group. Additionally, the PCard Administrator should consider including lodging in one or more of the MCC groups. Internal Audit is also aware that the Disbursing Office is investigating the possible implementation of a travel card for use by travelers, which would alleviate this recommendation.

Analysis

Internal Audit noted that a significant number of MCC codes are blocked (restricted). In particular, a substantial number of travel-related MCC codes (airfare, lodging, rental cars, etc.) are blocked, and the unblocking process is time consuming. Internal Audit believes many of these MCC codes could be unblocked without increasing the risk of improper purchases via PCards. Internal Audit noted that some MCC groups allows travel-related MCCs such as airfare, rental cars and restaurants to be unblocked. However, Internal Audit noted that no MCC groups allow PCards to be used for lodging and the `Basic Cardholder Privileges' group, which is used for the majority of Cardholders, prevents purchases for all travel-related categories. Travel expenses are already highly controlled, with all travel requiring preapproval by the employee's

Approving Authority (e.g. Supervisor and/or Principal Investigator/Program Manager) and FA. Out-of-state travel requires additional pre-approval by the Executive Approving Authority. Upon travel completion, a report detailing all travel expenses must be reviewed and approved by the employee's FA. Internal Audit's "Review of Travel Policy Compliance" report dated September 2017 noted that the Disbursing Office performed compliance audits on 78% of University travel expenses prior to disbursement for the year ended June 30, 2017.

Management Response:

Management will take into consideration the recommendations of this Audit after balancing the risks and benefits. Management offers the following comments for future consideration.

Internal Audit presumes that MCC restrictions are causing PCard holders to not use PCards for travel-related transactions. While Management has not studied this specific question in depth, it is our belief that it requires just as much work (if not more) to process all travel-related expenses associated with one trip by PCard than by processing a travel reimbursement. Therefore, many Fiscal Administrators or those with fiscal authority choose to process travel expenses as a reimbursement. This is supported by the fact that all Fiscal Administrators have the authority to unrestrict any PCard in its Unit for travel-related expenses – yet chose not to.

Management further believes the high degree of compliance with the Travel Policy occurs because most Units choose to restrict the use of PCards for travel-related expenses. By unblocking travel-related expenses, there will be no check-and-balance system in place to ensure compliance with the Travel Policy.

For clarification purposes, Management would like to highlight that there is in fact an MCC group that allows PCards to be used for lodging. However, Management will consider expanding lodging to other MCC groups.

Travel-related expenses generally present a higher level of risk because of the ability to have personal expenses or benefit included in the transaction. For example: food and beverage transactions charged to the hotel room; airfare travel dates that include personal time off days; and unauthorized travel will not be discovered until after the expenses are incurred. While no empirical or objective data has been provided to assess whether the risks associated with unblocking travel-related transactions are outweighed by operational efficiencies, the PCard program permits each Fiscal Administrator to make this determination on a case-by-case basis for their respective Unit.

4. The restrictions on "after-the-fact" purchases should be clarified

Internal Audit believes the survey comments regarding after-the-fact purchases were due to confusion as to the meaning of the term and when it applies. The PCard Administrator should consider clarifying this policy on their website and in training materials, and use requisite examples as to the nature and types of purchases that are or are not violations of this rule. Additionally, the PCard Administrator should consider communicating this clarification directly to FAs and Cardholders.

Analysis

Five of the respondents mentioned "after-the-fact" payments as one type of payment prohibited by the PCard Administrator. Internal Audit noted that according to the PCard website, an after-the-fact purchase is "a procurement made without authorization; the request for approval of the purchase is made after the purchase has occurred, thus violating the proper procedures." The website goes on to state that a "PCard is a purchasing card, not a payment card, so the PCard transaction must be made at the time the goods are ordered or the services rendered." Per discussion with a FA, a common example is when a Cardholder requests and receives goods or services (e.g., repairing a printer/copier) and the vendor issues an invoice subsequent to providing the goods or services. Thus, payment would be made after the receipt of goods or services. The VPA informed Internal Audit that an "after-the-fact" payment would not apply in this example, as the purchase was made with proper authorization. However, Internal Audit noted that there seems to be some confusion within the Units surveyed as to the meaning of 'after-the-fact' and what types of PCard purchases it applies to.

Management Response:

Management agrees to provide more clarification on the definition of "after-the-fact" purchases, as defined by Hawai'i Administrative Rule Chapter 3-131 et seq., to contemplate a request for approval for a procurement made in violation of proper procedures.

5. **PCard moratoriums may have been too severe**

Internal Audit believes moratoriums levied on an entire Unit should be the rare exception, and only under circumstances in which there are significant breaches of AP 8.266 across multiple Unit personnel. Even in such rare circumstances, consideration should be given to allowing some new Cardholders (e.g., new FAs) during the moratorium. In most cases, the violating Cardholder should bear the consequences of noncompliance with policy. Before levying a moratorium on an entire Unit, the Unit should have the opportunity to implement corrective actions (e.g. additional training, new procedures, new Cardholders, etc.).

Analysis

Four respondents noted that PCard moratoriums are an impediment to PCard usage. One Unit surveyed noted that their PCard moratorium covered their entire campus and lasted approximately nine months. During this time, the campus had substantial turnover, including the supervising FA for the entire campus, and were unable to obtain new PCards for new employees, causing checks to be required to pay for certain goods and services for which a PCard would've otherwise been used. Internal Audit believes consequences for noncompliant PCard use is necessary, but that the PCard Administrator should consider, whenever possible, levying consequences on the individual responsible for a PCard violation, rather than an entire campus.

Management Response

Management will take into consideration the recommendations of this Audit after balancing the risks and benefits. Management offers the following comments for future consideration.

As part of the 2015 PCard Audit and 2017 PCard Follow-Up Audit, the Internal Auditor noted that numerous PCard policy violations occurred because Purchase Card Documents ("PCDOs") were not reviewed and approved by Unit Supervisors within 60 days. In its Conclusions and Recommendations, "Internal Audit believe[d] that the PCard Administrator must establish a procedure to remedy significant and chronic PCard policy non-compliance with respect to the review and approval of PCard transactions."

As a corrective action, Management indicated that it would institute a phased penalty structure for those individual cardholders with repeated violations or for those departments that showed a chronic problem of violations that resulted from a lack of institutional control. The most extreme of these sanctions is a departmental moratorium against adding new card holders or unblocking MCC codes.

As noted in the 2017 PCard Follow-Up Audit, Management believes the moratorium played a significant role in reducing the total number of outstanding PCDOs from 748 out of 10,418 PCDOs as of June 30, 2015, to 66 out of 12,363 outstanding PCDOs as of June 30, 2016 (none of which were greater than 60 days outstanding). As such, Management believes the current procedure in place is achieving the objective of ensuring that PCDOs are timely approved. However, now that the number of PCard violations have reduced, Management will consider loosening the sanctions, if appropriate.

6. **Alternative uses for surplus PCard rebate account balance**

Due to a surplus, Internal Audit noted that the amount of the PCard rebate account continues to grow year over year, reaching approximately $1.5 million for the year ended June 30, 2017. Given the surplus, management should consider alternative University uses for account balances greater than what is needed per the PCard Administrator's budget for the following fiscal year.

Management Response: Management will use the surplus to develop on-demand training. The fund is also used to pay for the salaries of two (2) PCard specialists.

Management Conclusion

Many of the issues raised in this Audit were previously raised in conjunction with the 2015 PCard Audit and 2017 PCard Follow-Up Audit. Management's position remains stable on the substantive issues regarding unrestricting certain transactions writ large, and will continue to rely on the Fiscal Administrator to dictate the level and scope of authority for each individual PCard holder in their unit. However, Management will take into consideration the recommendations of this Audit and adjust its PCard program as appropriate.

UNIVERSITY OF HAWAIʻI

REVIEW OF CAPITAL IMPROVEMENT PROJECTS AND REPAIRS AND MAINTENANCE

February 2018

University of Hawaiʻi
Office of Internal Audit

UNIVERSITY of HAWAI'I SYSTEM

February 2, 2018

To the University of Hawai'i Board of Regents
and
University of Hawai'i Vice President for Administration

Historical evaluations and reviews of certain processes and functions associated with University of Hawai'i (University) at Mānoa (UHM) Office of Planning and Facilities or OPF (fka Office of Facilities and Grounds or OFG) have been performed by the Association of Higher Education Facilities Officers (fka Association of Physical Plant Administrators or APPA), Accuity LLP (Accuity) and the Office of Internal Audit (Internal Audit). The related reports suggested various recommendations to mitigate risks in connection with OPF's operational, financial reporting and compliance functions.

A follow-up audit report prepared by Internal Audit and dated December 2013 indicated that the implementation of the historical recommendations were incomplete and suggested other improvements, including the preparation and establishment of additional written policies, procedures and performance standards. Significant risks identified included the following:

- The capital improvement project (CIP) procurement process is not performed timely and effectively.
- Key activities related to contract procurement, execution, performance, and completion are not monitored in order to achieve timely completion of the CIP procurement process.
- CIP's are not completed on time and within contract amounts.
- Work orders for repairs and maintenance projects are not completed timely and effectively.
- The status of open work orders in the work order database system is not accurate.
- Lack of controls associated with inventory stored in the repairs and maintenance Shops.

During the years ended June 30, 2017 and 2016, the Office of the Vice President for Administration (OVPA) reorganized OPF and the University's Office of Capital Improvement (OCI). Internal Audit believes the reorganization has resulted in the implementation of improvements to mitigate a significant number of risks identified in the historical evaluations and reviews. However, Internal Audit also believes that management should consider additional improvement opportunities. A sample of these improvement opportunities include developing duration expectation milestones for each significant procurement activity, improve quarterly CIP reporting to more accurately reflect cost and expected completion date trends, prepare written policies and procedures in connection with the monitoring and reviewing of repairs and maintenance work orders, and implement procedures to periodically monitor the work order database system for accuracy.

Sincerely,

Glenn Shizumura
Director

Background

Historical evaluations and reviews of the University of Hawai'i (University) at Mānoa (UHM) Office of Planning and Facilities or OPF (fka Office of Facilities and Grounds or OFG) have been performed by the Association of Higher Education Facilities Officers (fka Association of Physical Plant Administrators or APPA), Accuity LLP (Accuity) and the Office of Internal Audit (Internal Audit). The related reports suggested various recommendations to mitigate risks in connection with OPF's operational, financial reporting and compliance functions. The most recent APPA and Internal Audit reports were dated February 2011 and December 2013, respectively.

Follow-up audits performed by Internal Audit noted OPF was in the process of implementing corrective action to mitigate risks set forth in the above noted historical reports. However, risk remediation efforts were generally not completed by OPF's scheduled due dates and were ongoing as of Internal Audit's December 2013 audit. In addition, Internal Audit's December 2013 audit identified additional risks and improvement opportunities with respect to the following processes:

1) procuring services in connection with the construction of new buildings and major renovations of existing buildings (collectively hereafter referred to as capital improvement projects or CIP),
2) construction management of CIP and
3) repairs and maintenance (R&M) of existing buildings.

A common recommendation included in all historical evaluations and reviews was for OPF to prepare and implement written policies and procedures to improve the management and monitoring of their significant processes and practices. This report is organized by the significant processes referenced above.

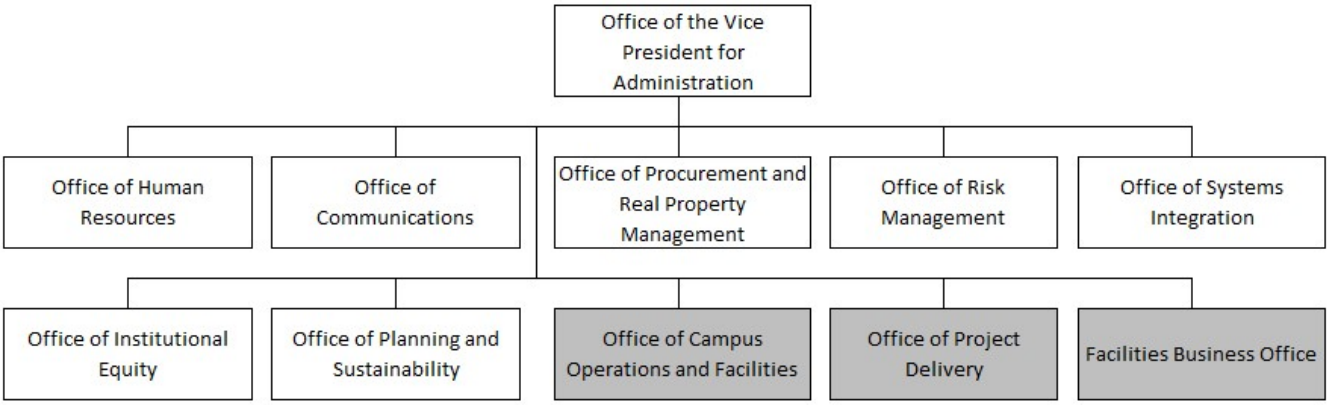
Internal Audit noted that a reorganization of OPF and the University's Office of Capital Improvement (OCI) was proposed and undertaken by the Office of the Vice President for Administration (OVPA) during the years ended June 30, 2017 and 2016. OPF was formerly responsible for managing R&M operations and construction management of CIP for the UHM Campus. Under Executive Policy (EP) 10.103, OCI was generally responsible for overall management of various University Systemwide construction functions, including acquiring CIP funding and managing construction of all CIP, with estimated costs exceeding $5 million.

As a result of the proposed reorganization, Internal Audit deferred performing additional follow-up audits. However, Internal Audit was aware of the OVPA and its various sub-offices preparing and implementing written policies and procedures to improve the management and monitoring of CIP as well as projects related to the R&M of existing buildings. These sub-offices consist of the Office of Campus Operations and Facilities ("COF" or "the COF"), the Office of Project Delivery ("OPD" or "the OPD"), and the Facilities Business Office ("FBO" or "the FBO").

The objective of the reorganization was to create a more consolidated organizational structure in order to improve the efficiency and effectiveness of CIP and R&M management. Management and oversight of all University CIP (previously the responsibility of OPF and OCI) are now performed by the Office of Project Delivery (OPD) from initial design and planning to completion (i.e. the date the CIP can be used/occupied). In connection with this reorganization, OPD hired a Design Manager, Construction Manager, Director of Planning and Project Development and a Design-Build Manager. Additionally, the responsibility for the procurement of construction contractors and professional service providers in support of construction (architecture, engineering, etc.) (collectively hereafter referred to as construction service providers) was transferred from the Office of Procurement and Real Property Management (OPRPM) to the newly established FBO in July 2016. FBO is responsible for the procurement and monitoring of all CIP contracts in excess of $250,000 signed (executed) during the year ended June 30, 2017 or later (OPRPM is responsible for the procurement and monitoring of all

other contracts, including CIP contracts less than $250,000, professional services, small purchases, etc.). COF is responsible for R&M (previously OPF's responsibility), which comprises the labor and associated costs incurred to restore (repair) a capital asset to its productive capacity or to prevent (maintenance) a decline in the capital asset's productivity. This reorganization and establishment of new offices decreased the number of funded positions from 358 to 354.

The overall updated organizational chart for the OVPA is presented below:



As another initiative, Internal Audit noted that OPD commenced implementing the design-build construction method for CIP during the year ended June 30, 2017. Design-build is a construction method in which the design and construction services are contracted with a single entity thereby integrating the roles of designer and contractor. Historically, the University has used the design-bid-build method for all CIP. According to the OPD Interim Director, the construction phase of design-build projects can commence quicker and the number of certain types of change orders (e.g., change orders resulting from errors in the design phase) is reduced when compared to design-bid-build projects. Accordingly, the design-build method is expected to increase the likelihood of CIP completion on schedule and within contract amounts. Internal Audit was informed by the OPD Interim Director that the first design-build contract was signed in Spring 2017 for the UHM Life Sciences building.

The purpose of this audit is to evaluate the current processes, procedures and practices to determine if the significant risks identified in historical evaluations and reviews have been mitigated. The three offices shaded gray in the above organizational chart have the responsibility to mitigate these risks. Audit procedures consisted of review of written policies and procedures, discussions with relevant personnel, observations of management monitoring meetings and review of documentation.

Procurement of Capital Improvement Projects

Prior audits performed by Accuity, APPA or Internal Audit noted ongoing challenges related to the timely and effective procurement of CIP. As discussed in the Background section, OPF and OCI were reorganized to address these challenges. The following summarizes the significant risks identified in historical evaluations and reviews with respect to the CIP procurement process:

1) The CIP procurement process is not performed timely and effectively.
2) Key activities related to contract procurement, execution, performance, and completion are not monitored in order to achieve timely completion of the CIP procurement process.

Internal Audit evaluated FBO's remediation efforts with respect to these risks.

Work performed

For purposes of understanding and evaluating the current CIP procurement process, Internal Audit reviewed and analyzed the following:

1) written policies and procedures
2) documentation of the CIP procurement process
3) functionality of the new automated procurement system for construction service providers

Internal Audit also held discussions with FBO and OVPA personnel to understand the CIP procurement process. Finally, Internal Audit reviewed CIP initiated in fiscal year 2017 to analyze the duration of completing various procurement activities and compliance with written policies and procedures.

Observations and analysis

1: Policies and procedures

Administrative Procedure (AP) 8.281

AP 8.281, *Construction and Professional Services in Support of Construction*, was updated (approved May 2017) to document policies for the procurement of construction service providers. Conformance with AP 8.281 should ensure compliance with the State of Hawai‘i procurement code as established by Hawai‘i Revised Statute (HRS) §103D. Additionally, AP 8.281 provides guidance and internal procedures in connection with the CIP procurement process. This guidance and procedures include the process of evaluating construction service providers and awarding contracts as well as the required documentation and approvals associated with the CIP procurement process. AP 8.281 also describes the six types of procurement methods available (Small Purchase of Goods, Services or Construction; Competitive Sealed Bid; Competitive Sealed Proposal; Professional Services; Sole Source Procurement; Emergency Procurement) and specifies the procurement method to be used based upon the nature of the requested services. Most CIP are procured either as a Competitive Sealed Bid via an Invitation for Bid (IFB) or a Competitive Sealed Proposal via a Request for Proposal (RFP). Procurement of design only services must comply with the procurement of Professional Services statutes. Pursuant to HRS §103D, RFPs are permitted for design-build contracts while IFBs are used for design-bid-build construction contracts. An IFB is an invitation to construction service providers to submit an offer on a specific project. An IFB is focused on pricing, and the construction service provider with the lowest bid is awarded the contract, provided that they meet the minimum criteria for the bid. This is in contrast to an RFP, which is a document that solicits proposals for a project that requires technical expertise and specialized capability. RFP contracts are not awarded solely on price, but by a combination of quantitative and qualitative factors as determined by an evaluation committee. The evaluation committee is comprised of at least three University personnel with the requisite experience for the proposed CIP (typically includes the project manager, department director, Director of COF, etc.).

Form 1

Internal Audit also noted that prior to initiating an IFB or RFP with respect to a CIP, FBO requires the completion of a “Request for Procurement Services” form (Form 1). Form 1 must be manually signed by various University stakeholders (i.e., project manager, fiscal administrator, department head, University senior management, etc.) to evidence concurrence with the proposed CIP. Form 1 includes a checklist of all supporting documentation (scope of work, plans and specifications, estimated cost, completion timeframe, etc.) that must accompany its submission to the FBO.

Procurement checklists

To facilitate compliance with AP 8.281, FBO prepared and implemented the following checklists:

1) Checklist for design contracts
2) Checklist for construction contracts

These checklists were developed to ensure consistency and completeness in connection with procuring services from construction service providers. FBO personnel initialing or signing and dating each item on these checklists (e.g., consideration of funding, scope of services, appointment of selection committee, required approvals, status of permits, contractual requirements, etc.) evidences compliance with AP 8.281. Additionally, Internal Audit noted the inclusion of templates (e.g., standard memorandums, service provider evaluation forms, agreements for services, contract modification forms, etc.) in FBO's CIP Procurement Procedures manual. This manual was updated in December 2016 to supplement and enhance compliance with AP 8.281 in connection with the preparation and drafting of design and construction contracts. The development of these templates should further mitigate the risk of procurement noncompliance by ensuring consistency in the form and content of design and construction contracts.

Testing
Internal Audit examined three of the 12 largest (greater than $1 million) CIP contracts executed during the year ended June 30, 2017 noting no compliance exceptions with AP 8.281 and effective and appropriate utilization of applicable procurement checklists and CIP Procurement Procedure manual templates.

2: Monitoring
Internal Audit noted practices to manage and monitor the timely completion of the CIP procurement process through weekly Procurement Status Meetings between the FBO Director and FBO Facilities Contract Manager. Additionally, the status of each proposed CIP contract is reviewed at the weekly Facilities Management Meeting with the Associate Vice President for Administration (AVPA) and Vice President for Administration (VPA). Internal Audit attended both meetings noting a robust discussion of the status of each proposed CIP contract. The discussion included action items for any issues that had arisen over the last week.

Internal Audit noted that the FBO focuses on the duration of the procurement process as a whole and tracks and monitors the number of days for completing significant procurement activities from the submission of design specifications to contract execution. However, duration goals for these procurement activities have not been established.

Invitations for Bid
From July 2016 to June 30, 2017, 28 CIP contracts were awarded, with an additional 16 draft contracts in various stages of the procurement process. OPRPM and FBO provided the average durations of each major activity in the procurement process (Invitations for Bid only) for the years ended June 30, 2017 and 2016:

Table I. Duration of Procurement Activities (IFB only)

	Average Duration (Days) (Unaudited)		
Procurement Activities	**OPRPM: 2016**	**FBO: 2017**	**Difference**
Procurement initiation to advertising	27	7	(20)
Advertising to bid due date	36	33	(3)
Bid due date to contract award (bid review period)	57	53	(4)
Contract award to contract execution	54	25	(29)
Total Duration	174	118	(56)
Total Duration (months, rounded)	6	4	(2)

Table I compares the procurement duration of IFBs for the years ended June 30, 2017 and 2016. As previously described, RFPs are permitted for design-build contracts. Accordingly, a comparison of the procurement duration of RFPs was not performed since the design-build initiative did not begin until the year ended June 30, 2017.

As shown in Table I, Internal Audit noted that the overall average duration for the IFB procurement process improved by approximately two months during the year ended June 30, 2017. Additionally, there was improvement in the timeliness of achieving each of the individual activities, ranging from three to 29 days. This evidence indicates that the aforementioned reorganization and procurement monitoring activities have improved the timeliness of the IFB procurement process. Hawai‘i Administrative Rule (HAR) §3-122-16 mandates minimum time periods between the first date of the public notice of the solicitation (advertising) and the date set for receipt of offers (bid due date), ranging between ten and thirty calendar days depending on the method of procurement (i.e. IFB, RFP, etc.). Therefore, it is reasonable that there was minimal improvement in the timeliness of days from advertising to bid due date.

Per discussion with the VPA, the FY2017 average durations of procurement activities in Table I are in line with management's expectations, which are based on an objective of reducing the amount of time and paperwork involved with procuring and contracting CIP. Management plans to expand this new, more efficient procurement process to also include CIP that are less than $250,000.

Request for Proposal
With respect to the procurement duration of RFP's, Internal Audit reviewed and analyzed the listing of RFPs initiated during the fiscal year ended June 30, 2017 noting that contracts for three RFP's were awarded and ten were in progress. Internal Audit noted that the duration of the RFP procurement process generally exceeded the duration for the IFB procurement process by approximately 60 days and was informed that the difference is largely due to two additional steps in the RFP process. These two additional steps consist of: 1) the selection of the priority list of offerors, which will have the opportunity to revise their original proposals in order for the University to receive their best and final offer (under AP 8.281 and HAR §3-122-16, a minimum of three offerors must make up the priority list); and 2) the period in which final offers may be made by the priority list of offerors. However, the OPD Interim Director stated that the duration increase associated with the RFP procurement process will typically be more than offset by the time savings that will be realized in connection with the overall design-build project duration using the RFP process. However, the OPD Interim Director could not quantify the net time savings expected to be realized in connection with the RFP process.

3: Initiatives
In July 2016, FBO implemented the Hawai‘i Electronic Procurement System (HePS) to enhance the CIP procurement process. HePS is an online procurement system utilized by FBO that replaces OPRPM's paper based system. Through discussion with FBO personnel and review of process flowcharts, Internal Audit determined that HePS maintains all information (procurement and company description) submitted by the construction service providers in connection with bids and proposals to provide services to the University. Further, HePS utilizes e-mail notifications to alert construction service providers registered with HePS that a RFP or IFB was posted. RFP's or IFB's are then submitted electronically via HePS. Previously, the practice was for hardcopies of documents to be printed and delivered or picked up by prospective construction service providers. Accordingly, HePS has improved both the records management and construction service provider notification functions in the CIP procurement process. FBO believes the HePS e-mail notification process provides the University with an increased number of qualified construction service providers bidding and proposing on CIP. Accordingly, the expectation is that the University will be able to engage the most qualified construction service provider thereby reducing the risk of CIP not being completed on time and within contract amounts, as well as substandard construction.

Another benefit of HePS is its integration with Hawai‘i Compliance Express (HCE) that expedites FBO’s validation of a construction service provider’s compliance with HRS §103D-310 by providing an online certificate that encompasses required clearances from the IRS, Department of Labor, Department of Commerce and Consumer Affairs, and the State of Hawai‘i Department of Taxation. Compliance with HRS §103D-310 is a requirement of contract execution. Therefore, HCE provides the University with the ability to execute contracts quicker and more efficiently.

Conclusions and recommendations

FBO’s development of policies and procedures as well as increased monitoring has addressed the significant risks identified in historical evaluations and reviews with respect to the CIP procurement process. The automation of certain procurement processes may also provide the University with the ability to engage construction service providers that are more likely to complete CIP on time and within contract amounts. However, Internal Audit has also identified improvement opportunities. Additional information regarding Internal Audit’s conclusions and recommendations are discussed below.

Conclusions

1: Policies and procedures

Internal Audit believes that the FBO developed written policies and procedures and accompanying forms (checklists and templates) provide sufficient guidance to facilitate the timely and effective performance of the CIP procurement process. Furthermore, Internal Audit noted that FBO personnel are complying with their written policies and procedures and utilizing checklists and templates in connection with the CIP procurement process.

2: Monitoring

Although FBO has not yet established formal key duration goals for the CIP procurement process, Internal Audit noted improved durations of each procurement activity as evidenced by Table I. Internal Audit believes this greater sense of urgency is largely due to the reorganization of responsibilities and additional monitoring activities by FBO and OVPA management, which should be sufficient to provide reasonable assurances that procurement activities are performed effectively and efficiently.

3: Initiatives

Finally, Internal Audit believes the implementation of HePS has enhanced the CIP procurement process by electronically storing the names and qualifications of construction service providers that have previously proposed to provide construction services to the University. Accordingly, the greater number of qualified entities proposing to provide construction services to the University may partially mitigate the risk of engaging construction service providers unable to complete a CIP on time and within contract amounts. Additionally, HePS integration with HCE allows the University to more efficiently execute contracts with construction service providers in compliance with HRS §103D-310.

Recommendations

Management should consider implementing the following in connection with the CIP procurement process:

1. Adopt electronic signatures for Form 1 to ensure approvals can be obtained and evidenced in a more efficient manner. Executive Policy (EP) 2.216 establishes University policy for the acceptability of electronic approvals/signatures.

2. Establish goals for the expected duration of each procurement activity for both RFPs and IFBs (as well as for the CIP procurement process as a whole). One example of a procurement activity where opportunities for improvement exists is the duration from “bid due date to contract award”, which only showed marginal

improvement in Table I. Consistent and effective monitoring of actual to expected durations may identify areas for additional improvement.

CIP Management

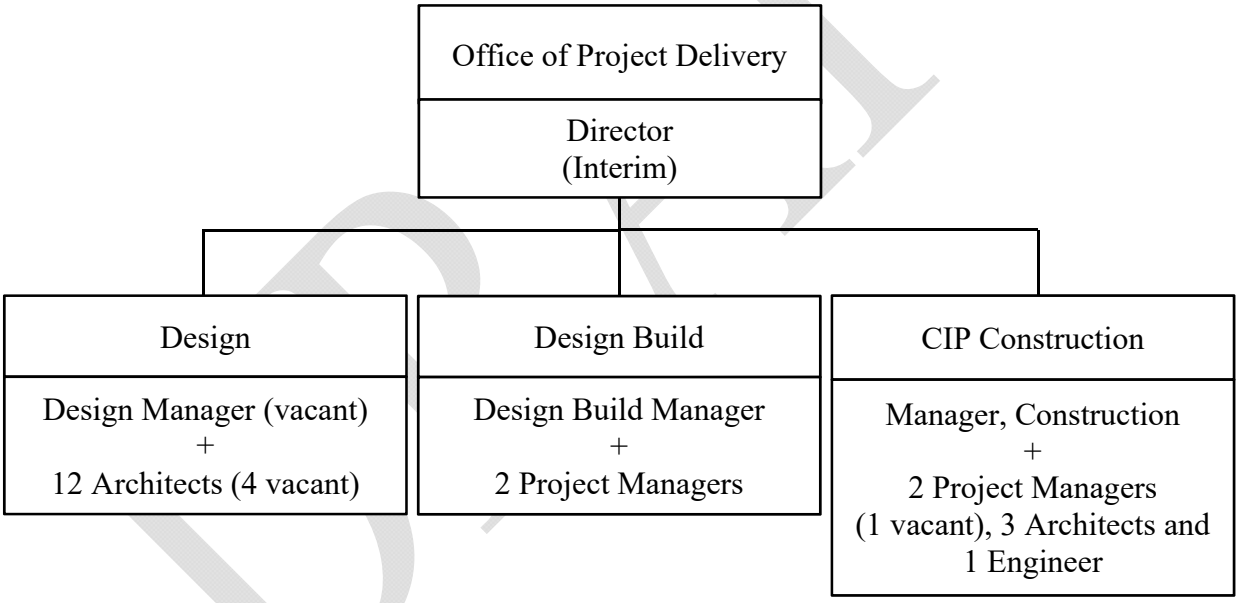
Internal Audit's December 2013 report identified significant risks related to not completing CIP on time and within contract amounts. To help mitigate these risks, Internal Audit recommended the development of policies and procedures from CIP commencement to completion. Additionally, Internal Audit recommended the inclusion of standard contract provisions that penalize construction service providers for work product errors, project delays, and/or additional costs incurred by the University that are attributable to the construction service provider.

Work performed

Internal Audit reviewed OPD procedures, contracts with construction service providers, contract modifications and construction progress billings. Additionally, Internal Audit reviewed CIP supporting documentation including CIP budgets (including contingency estimates), change orders and requests for information (RFIs). Internal Audit also held discussions with OPD personnel to evaluate OPD's efforts in connection with mitigating the risk of CIP not completed on time and within contract amounts and attended CIP management meetings in connection with those efforts.

Observations and analysis

The current OPD organizational chart is as follows:



1: Policies and procedures

Internal Audit's review of OPD documentation describing the CIP management process (Construction Management Manual, dated July 22, 2015) and interviews with OPD management noted the development of written policies and procedures as well as unwritten practices to minimize the risk of not completing CIP on time and within contract amounts. However, the policies do not address obtaining, documenting and funding CIP

change orders pursuant to University (owner) requests, which is a risk considering change orders are often the result of requests by end users.

Additionally, as noted in the background section, under EP 10.103, OCI was generally responsible for overall management of various University Systemwide construction functions including acquiring CIP funding and managing construction of all CIP with estimated costs exceeding $5 million. Due to the reorganization described earlier in this report, EP 10.103 is no longer accurate as to the office or department responsible for CIP.

Pre-design procedures

Design-bid-build

Since August 2017 for design-bid-build CIP, OPD has hired outside consultants to prepare a formalized Architectural Design Program report (referred to as the Due Diligence Report) during the CIP pre-design phase for certain new construction and major renovations/repairs to existing buildings. Whether a Due Diligence Report is prepared or waived is dependent on the scope and complexity of the CIP. The purpose of the Due Diligence Report is to identify matters that may impact the scope and cost of CIP design and construction services prior to the design phase. Internal Audit reviewed a sample of three Due Diligence Reports prepared subsequent to August 2017 and noted each evaluated a variety of pre-design activities, including on-site surveys, regulatory agency requirements, laboratory testing, general conditions of existing structures, hazardous materials assessment surveys, site photographs, topography maps and flood hazard assessment reports. Internal Audit noted the structure, content and pre-design activities documented in these reports were inconsistent.

According to the OPD Interim Director, the Due Diligence Reports are not meant to be comprehensive, as the company that is awarded the design contract is required to perform additional due diligence activities necessary to prepare the design. These due diligence activities vary depending on the cost and negotiations with the company providing design services. If change orders occur during the construction phase as a result of design errors or inaccuracies, the design contractor would generally bear the responsibility. However, per discussion with the OPD Interim Director, the University has not historically sought recourse in such situations.

Design-build

For design-build CIP greater than $5 million, due diligence activities similar to those included in the Due Diligence Reports described above is also generally conducted (the nature and extent is dependent on the scope and complexity of the CIP) by OPD personnel or an external service provider, which is then documented in a criteria package. The information in the criteria package is similar in nature to the Due Diligence Reports described in the Design-bid-build section above. When a design-build CIP is advertised for bid, the criteria package is included in the RFP. The information in the RFP is relied upon by the CIP service provider to determine the estimated cost of the work. Any inaccuracies or incompleteness becomes the responsibility of the University, as well as the cost of any change orders that result. According to the OPD Interim Director, the University endeavors to perform as thorough due diligence as possible, but certain activities (such as using ground-penetrating radar to locate the exact depths of objects below ground) may be cost-prohibitive due to funding.

2: Monitoring

University construction managers (both from OPD and Community Colleges) meet weekly with the construction service providers to discuss the status of each CIP. This meeting is referred to as the Owner-Architect-Contractor (OAC) meeting. During these meetings, the three-week look-ahead schedule (i.e., the scheduling and status of specific tasks to be completed over the next three weeks) for each CIP is reviewed to ensure immediate tasks are performed prior to or on the expected due date. The overall project schedule is generally only reviewed if CIP progress is not tracking to expected timeframes. Additionally, unanswered RFIs and change order proposals are discussed in detail (i.e., impact on schedule and cost, if any, required specifications, funding, etc.) to determine the most efficient path to resolution.

OPD and FBO management also meet weekly (Facilities Management Meeting) with the VPA and AVPA to discuss the status, expected completion dates, contract costs and change order costs of each CIP. Internal Audit attended both an OAC meeting and a Facilities Monitoring Meeting noting that these meetings are well-designed and should be an effective unwritten practice to monitor the status of each CIP.

3: Initiatives

Internal Audit noted that OPD implemented e-Builder in October 2016 to assist in the CIP management and monitoring process. E-Builder is a design and construction project management system using web based software that allows authorized (log-in and password protected by CIP) stakeholders (project manager, construction service providers, etc.) to access real-time information (RFIs, proposed and approved change orders, progress billings, etc.). E-Builder archives this project data and utilizes electronic workflow to track and manage CIP. According to the FBO Director, e-Builder was used to manage and monitor CIP contracts signed during the year ended June 30, 2017. E-Builder was not used for uncompleted CIP that commenced construction prior to July 1, 2016 (with the exception of the expansion to the William S. Richardson School of Law (Law School- Legal Outreach Center)).

Change order proposals and approved change orders are managed and monitored in e-Builder. When a potential change to the scope or specifications of a CIP is identified, the preparation of a change order proposal is required. The change order proposal includes the scope of work, justification for the change, and the schedule and/or cost impacts, if any. The VPA currently approves all change order proposals for CIP related to new construction and major renovations/repairs to existing buildings.

E-Builder has also automated the RFI process. A RFI is a question from the general contractor or subcontractor to the project owner or design service provider regarding the interpretation or application of the project plans and specifications. Responding to and closing out RFIs in a timely manner is crucial to the CIP schedule and budget. E-Builder supports the management of RFIs by automatically sending electronic notifications to inform the appropriate stakeholder of a RFI that requires their review and response. Additionally, for RFIs involving OPD employees, an e-mail notification is sent to the VPA or AVPA if the OPD employee does not respond to the RFI within seven days. In addition, a RFI that results in an approved change order will automatically update the CIP estimated cost at completion and estimated completion date, as applicable. Internal Audit observed a demonstration of the Law School- Legal Outreach Center project in e-Builder and viewed several of the workflow processes used for CIP management noting that OPD personnel appear to be collaborating and actively monitoring CIP status. However, Internal Audit also noted that the aforementioned Construction Management Manual has not been updated for changes to processes and procedures related to the implementation of e-Builder.

Testing

Internal Audit selected a sample of four fiscal year 2017 e-Builder monitored CIP (three of which are included in the listing of projects in Table II) to assess the implementation of the aforementioned project management and monitoring procedures. Internal Audit noted that RFIs were tracked, monitored, approved and archived in e-Builder. Change order proposals and approved change orders were also tracked and archived in e-Builder. Additionally, each CIP file included a three-week look-ahead schedule, which is updated and reviewed on a weekly basis and archived in e-Builder. Finally, each CIP included a budgeted cost contingency ranging from 3% - 10% of the total construction contract amount. Based on our testing, Internal Audit believes the project management and monitoring procedures discussed above have been implemented. However, Internal Audit notes that it's premature to fully evaluate the impact and effectiveness of the new project management and monitoring procedures as well as the initiatives undertaken by management as many of the e-Builder monitored projects remain in their early stages.

4: CIP estimated costs at completion and estimated completion dates

As of December 31, 2017, 13 CIP were in progress and ten were recently completed or pending completion that had estimated or final construction costs at completion of more than $5 million. These 23 projects are listed in

Table II. The information for these projects was derived from quarterly CIP progress reports presented to the Planning and Facilities Committee, as well as the Kuali Financial System (KFS). Internal Audit's review of each quarterly report for the quarter ended June 30, 2016 through the quarter ended December 31, 2017 identified continuing revisions to estimated CIP construction costs at completion and changes to CIP completion dates. CIP cost estimates and completion date information for select quarters during 2016 and 2017 are presented in Table II. Table II also quantifies changes in estimated CIP completion dates and estimated costs at completion, as well as costs incurred to date noted on CIP progress billings dated as of or prior to January 31, 2018. These quarterly reports do not include design costs and thus do not reflect total CIP costs. Appendix A presents CIP cost estimates and completion date information for each quarter during the period June 30, 2016 through December 31, 2017.

Table II. Quarterly CIP estimated costs at completion and estimated completion dates (All dollars are in 000's)

	Campus	Project	Original Construction Contract: Completion Date/ Cost	Revised/Estimated Construction Completion Date and Costs at Completion (unaudited)					Jan. 31, 2018 Costs Incurred to Date
				Jun 30, 2016	Dec 31, 2016	June 30, 2017	Dec 31, 2017	Change from Original	
CIP initiated prior to implementation of e-Builder									
1	Mānoa	Elevator modernization III	Dec 2016 $9,162	Mar 2017 $9,241	Jul 2017 $10,008	Jul 2017 $10,240	Feb 2018 $10,249	14 months $1,087	$10,249
2	Mānoa	Coconut Isle, Lilipuna & Seawall Repair	Feb 2017 $5,999	Jan 2018 $5,999	Jan 2018 $5,999	Jan 2018 $5,999	July 2018 $6,414	17 months $415	$3,218
3	Mānoa	Coconut Isle, Utility Rehabilitation/Replace	Nov 2016 $6,397	Feb 2017 $6,397	Oct 2017 $6,550	Oct 2017 $6,550	Apr 2018 9,393	17 months $2,996	$5,630
4	Mānoa	Coconut Isle, Marine Lab Bldgs 1, 2	Feb 2018 $21,020	TBD $21,020	Feb 2018 $21,020	Mar 2018 $21,030	Mar 2018 $21,030	1 month $10	$10,535
5	Lee CC	Repair and Refurbish Theater	Sep 2017 $10,256	Not Reported	Oct 2017 $10,256	Nov 2017 $10,256	Apr 2018 $10,624	7 months $368	$7,722
6	Mānoa	Life Sciences Bldg	Spring 2019 $49,500	TBD TBD	Sprg 2019 $49,500	Sprg 2019 $49,500	Sumr 2019 $49,770	3 months $270	$3,134
7	Mānoa	Replacement of Substation "M"	Dec 2017 $4,777	Not Reported	Not Reported	Jan 2018 $5,234	Feb 2018 $5,234	2 months $457	$5,106
8	Kap CC	Culinary Institute of the Pacific	Oct 2016 $25,058	Dec 2016 $25,268	Feb 2017 $26,352	Feb 2017 $27,311	June 2017 $27,332	8 months $2,274	$27,312
9	Hawai'i CC	Culinary Arts Bldg 1A & HSSS Bldg 1B	Mar 2016 $22,670	Aug 2016 $28,036	Feb 2017 $28,590	Aug 2017 $28,590	Aug 2017 $28,590	17 months $5,920	$28,543
10	Mānoa	Clarence T.C. Ching Complex	Jul 2013 $12,393	Nov 2016 $14,649	Mar 2017 $14,688	Aug 2017 $14,688	Jan 2018 $14,688	54 months $2,295	$14,644
11	Hon CC	Building 8807, Upgrade Infrastructure	May 2014 $8,609	Aug 2016 $10,836	Nov 2016 $10,836	Aug 2017 $10,836	Dec 2017 $10,836	43 months $2,227	$10,789
12	Mānoa	Elevator modernization II	Feb 2016 $10,322	Not Reported	May 2017 $11,442	Sep 2017 $11,442	Sep 2017 $11,442	19 months $1,120	$11,442
13	Mānoa	Bilger Complex, AC Upgrades	Nov 2013 $5,738	Dec 2016 $5,921	Jun 2017 $6,240	Jul 2017 $6,527	Jan 2018 $6,527	50 months $789	$6,447
14	Mānoa	Ag. science facility, water plant and HVAC	Aug 2015 $5,271	Oct 2016 $5,429	Apr 2017 $5,441	Aug 2017 $5,441	Jan 2018 $5,441	30 months $170	$5,440
15	Mānoa	Biomedical Sciences, R/R HVAC, DDC	Aug 2013 $5,325	Oct 2016 $5,383	May 2017 $5,383	Sep 2017 $5,383	Jan 2018 $5,683	53 months $358	$5,683
16	Mānoa	Hamilton Library, Phase II	Aug 2013 $5,902	Not Reported	Apr 2017 $6,351	July 2017 $6,351	Complete $6,351	47 months $449	$6,351
17	UH Hilo	Campus Security & Emergency Operations	Oct 2015 $4,589	Not Reported	Sep 2016 $5,075	Sep 2017 $5,075	Sep 2017 $5,087	23 months $498	$5,083

	Campus	Project	Original Construction Contract: Completion Date/ Cost	Revised/Estimated Construction Completion Date and Costs at Completion (unaudited)					Jan. 31, 2018 Costs Incurred to Date
				Jun 30, 2016	Dec 31, 2016	June 30, 2017	Dec 31, 2017	Change from Original	
CIP managed in e-Builder									
18	W O'ahu	Admin and Allied Health Facility	May 2018 $29,941	TBD $29,941	May 2018 $29,941	Oct 2018 $29,941	Oct 2018 $30,406	5 months $465	$15,278
19	Hilo	Daniel K. Inouye College of Pharmacy	May 2018 $31,300	TBD $32,670	May 2018 $31,300	May 2018 $31,300	Oct 2018 $31,409	5 months $109	$11,404
20	Mānoa	Hamilton Library Addition, Phase III	Sep 2018 $6,018	Not Reported	Not Reported	TBD $6,018	Sep 2018 $6,018	- -	$634
21	Mānoa	Kennedy Theater Repairs	July 2017 $5,492	Not Reported	July 2017 $5,492	July 2017 $5,507	June 2018 $6,033	11 months $541	$5,890
22	Mānoa	Saunders Hall Ext. Repairs and Reroof	Aug 2018 $5,228	Not Reported	Not Reported	Aug 2018 $5,229	Aug 2018 $5,377	- $149	$1,583
23	Mānoa	Law School- Legal Outreach Center	Nov 2017 $7,372	TBD $7,372	Nov 2017 $7,372	Nov 2017 $7,372	Mar 2018 $7,458	4 months $86	$5,921

Internal Audit believes the quarterly CIP progress reports provide useful information to the Board of Regents Committee on Planning and Facilities with respect to CIP status. However, as evidenced by the above table (see "Change from Original" column) and Appendix A, there continues to be a trend of cost increases and completion date extensions. According to University construction managers and supporting documents provided to Internal Audit, the primary reasons for cost increases and completion date changes are:

1) errors by the design contractor
2) design changes requested by the University (user requests) subsequent to construction commencement
3) site or building conditions that the University and the CIP service providers were unaware of prior to the start of construction (commonly referred to as "unforeseen conditions"). Some examples noted in the quarterly CIP progress reports (as of March 31, June 30 and September 30, 2017) are as follows:
    a) deteriorating hot water piping insulation
    b) road conditions
    c) freight elevator shaft issue
    d) replacement of light fixtures
    e) cable splicing and repairs to damaged cables
    f) underground electrical utility lines
    g) adjustments to foundation depth requirements
    h) change in membrane waterproof coating due to high moisture and humidity levels
    i) waterproofing repairs
    j) micropile/underpinning foundation and waterproofing work

The final column of Table II presents the costs incurred to date by CIP as of or prior to January 31, 2018 (based on the most recent progress billings recorded in KFS). Comparing estimated CIP costs at completion to CIP costs incurred to date through January 31, 2018 infers that either the estimated completion dates will not be achieved or the estimated costs at completion are overstated for various projects (e.g., projects 2, 3, 4, 5, 18, 19, 20 and 23, to highlight a few). For example, the December 31, 2017 quarterly CIP progress report presented to the BOR Committee on Planning and Facilities on February 7, 2018 noted that the Law School- Legal Outreach Center had minimal changes in estimated costs at completion from the original contract amount but a revised estimated completion date of March 31, 2018. As of January 31, 2018, the construction costs incurred to date aggregated 80% of the original contract amount. Accordingly, Internal Audit believes achieving the March 2018 completion date is unlikely as of the date of this report based on the information presented in the December 31, 2017 quarterly CIP progress report. Furthermore, per discussion with the University project manager, Internal Audit

was informed that the project had experienced some challenges, including new and pending change orders, which may add costs that have not been reported as of the date of the December 31, 2017 quarterly report.

Furthermore, Internal Audit noted that the information in the quarterly CIP progress reports presents point-in-time information and doesn't include sufficient information to identify revisions from historical quarterly reports in estimated costs at completion and estimated CIP completion dates. Also, in many cases, the cause of unanticipated change orders and/or schedule extensions was difficult to determine.

In addition, the completion dates for various CIP are prior to January 31, 2018 (June 2017 – January 2018). However, Internal Audit's review of progress billings noted progress billings with construction work performed subsequent to the expected completion dates. As a result of the constant revisions to estimated costs at completion and estimated completion dates as well as the likelihood of achieving the estimated completion dates based upon total costs incurred to date, Internal Audit believes the overall monitoring of CIP budgets and completion schedules should be improved to increase reliance on the information contained in the quarterly CIP progress reports. Furthermore, the 'Projects Pending Close-Out' section of the quarterly CIP reporting could be improved by the inclusion of the current status of the CIP (i.e., building in use/not in use) and the items outstanding that are pending completion (e.g., awaiting final invoice, awaiting final as-built drawings, contract in dispute, etc.).

5: Cost contingency

Cost contingencies are a predetermined percentage of a contract value included in the budget for unpredictable and unexpected costs. Per discussion with OPD construction management personnel, only CIP budgets approved during the year ended June 30, 2017 consistently included University (owner) cost contingencies. (Note: the amounts in Table II do not include contingencies). OPD does not have written policies or procedures for determining cost contingencies, but have implemented an unwritten practice of considering contingency amounts for all CIP. Per discussion with the VPA, previous management had not consistently included cost contingencies in the budgeting process for all projects.

Cost contingencies are included in CIP budgets to account for potential additional costs that may result from University caused delays or University requested changes in the scope of work. The cost contingency percentage generally varies based on the scope and complexity of each CIP (i.e., projects deemed to be more complex are assigned a greater contingency percentage). As OPD approves change orders, the budgeted cost contingency is reduced by the cost of the change order. For new projects that commenced construction during the year ended June 30, 2017, OPD stated that cost contingencies are expected to be sufficient to fund any approved change orders. To validate this assertion, Internal Audit obtained the list of CIP greater than $5 million with ongoing construction during the year ended June 30, 2017 (Table II CIP initiated prior to implementation of e-Builder), as well as all new CIP (all CIP managed in e-Builder including those presented in Table II - "CIP managed in e-Builder") that commenced during the year ended June 30, 2017 and noted the following as of January 31, 2018:

Table III. Cost contingency comparison

	As of January 31, 2018	
	Ongoing CIP over $5 million managed outside of e-Builder	**All new CIP (during the year ended June 30, 2017) managed in e-Builder**
Total number of projects	17	17
Average contingency percentage	5.2%	7.6%
Range of contingencies	3% to 39%	3% to 19%
Number of projects with no contingency	10	2*
Number of projects (Est. costs at completion exceeds original contract + contingency budget)	13	0

**Cost contingencies were not budgeted for two new projects as follows: 1) A 5% contingency was later budgeted for the project. 2) Project was fast-tracked due to an urgent need to replace a transformer, therefore no cost contingency was budgeted.*

The above table illustrates that cost contingencies were generally not budgeted for CIP commencing prior to July 1, 2016 but were budgeted for 15 of 17 new CIPs commencing during the year ended June 30, 2017. Cost contingencies ranged from 3% - 19% of the construction contract amount. With respect to these 15 CIPs, construction costs billed by contractors as of or prior to January 31, 2018 have not exceeded original construction contract amounts coupled with budgeted cost contingencies. However, as noted previously, more recent information regarding the Law School- Legal Outreach Center indicates that cost contingency amounts may be insufficient to fund all potential user-requested changes. It was also noted that the VPA reviews and approves all change orders manually, which has created inefficiencies in the approval process.

Conclusions and recommendations

Internal Audit believes that OPD has significantly improved their project management process by developing policies and practices to address the risks related to not completing CIP on time and within contract amounts. In addition, Internal Audit has determined that OPD has implemented these policies and practices. However, Internal Audit's review of quarterly CIP progress reports from June 30, 2016 through December 31, 2017 indicate ongoing issues with respect to the completion of CIP on time and within contract amounts. Accordingly, additional enhancements to the improved project management process are warranted. Additional information regarding Internal Audit's conclusions and recommendations are discussed below.

Conclusions

1: Policies and procedures

Internal Audit noted that OPD developed written procedures and implemented unwritten practices to address previously identified risks related to the completion of CIP on time and within contract amounts. Internal Audit also noted that OPD complied with these procedures and practices, and believes continuous and effective compliance by University construction managers has the potential to mitigate the aforementioned risks.

The Due Diligence Reports and criteria packages may be effective procedures during the pre-design phase to mitigate potential unforeseen conditions discovered during the construction phase. However, the content and structure of these reports noted inconsistencies in the pre-design activities performed by both internal and external entities. See additional discussion with respect to pre-design activities below at "CIP estimated costs at completion and estimated completion dates".

2: Monitoring

Internal Audit noted that the regular CIP monitoring meetings (OAC and Facilities Management) are well-designed mechanisms for management to provide oversight and respond to issues in a timely manner. However, improvements may be warranted with respect to the substance of these meetings given the constant revisions to estimated costs at completion and estimated completion dates (see "CIP estimated costs at completion and estimated completion dates").

3: Initiatives

Internal Audit believes e-Builder is an effective tool for managing CIP, particularly in regards to RFIs and change orders. However, in regards to the overall reorganization, implementation of procedures, and the design-build initiative, Internal Audit notes it is too early to form a conclusion on e-Builder's overall effectiveness in regards to driving efficiencies within the management of CIP. As per the table of CIP (Table II) presented earlier in this report, the University's ongoing projects continue to suffer from CIP that is not completed on time and within contract amounts.

4: CIP estimated costs at completion and estimated completion dates

The quarterly construction progress report presented to the Planning and Facilities Committee is an effective method of summarizing CIP construction progress and changes to schedule/cost. However, Internal Audit noted constant revisions (as per Table II) to estimated costs at completion and estimated completion dates, as well as information that appeared to not be updated based on Internal Audit's analysis and inquiries. The information in this quarterly reporting loses its effectiveness if it is not complete and accurate.

Additionally, Internal Audit noted that many of the CIP presented in Table II experienced delays and increased costs due to "unforeseen conditions" that might have been avoided if a standard list of pre-design practices was required for each CIP. Internal Audit researched common pre-design practices within the construction industry and noted the following activities listed the most frequently (Note: this is not an all-inclusive list of potential pre-construction activities):

1) Soil sampling- testing soil samples from the construction site in a laboratory to determine moisture content, type, permeability, depth to groundwater and bedrock, etc.
2) Ground-penetrating radar- using radar to locate exact depth and location of underground objects such as utility lines and pipes.
3) Slope and stability testing- assessing the safe design of human-made or natural slopes to determine impact of various weather conditions and susceptibility to landslides.
4) Seismic testing
5) Storm water analysis- testing where storm water will drain and how it will impact downstream bodies of water.
6) Archaeological history examination- identifying potential issues with site or building including disposal of hazardous materials.
7) Existing building analysis/assessment- examining physical characteristics of a building and any heritage value.
8) Utility and service location- determining and documenting the location of supply points and lines for power, cable, gas, water and sewage.
9) Survey of existing hazardous materials- inspecting sites or buildings that contain suspected hazardous materials, as well as detecting unknown hazardous materials, including soil or groundwater contamination.

The main purpose of the above activities is to reduce the number of possible unforeseen conditions that may cause CIP to not be on time and within contract amounts. Internal Audit recognizes that OPD management has historically considered some of these activities as cost prohibitive due to budgetary constraints. However, Internal Audit believes, on average, performing additional planning-related activities to reduce costs associated with change orders due to unforeseen conditions may in turn reduce the overall cost of CIP for the University.

5: Cost contingency

Although it's too early to determine whether contingencies established and included in budgets for CIPs commencing during the year ended June 30, 2017 will be sufficient to cover unexpected additional costs, Internal Audit believes the practice of establishing contingency amounts for new CIP is an accepted practice and should continue.

Recommendations

Management should consider the following recommendations for improving the effectiveness of CIP management:

1. Policies and procedures:
   a. Review and update the Construction Management Manual dated July 22, 2015 for changes to processes and procedures, including changes due to the implementation of e-Builder.
   b. Update policies and procedures to include guidance and requirements for the establishment of CIP contingencies.
   c. Update policies and procedures to address documenting and funding change orders resulting from University (owner) requests.
   d. Create a standard checklist (see list for consideration in conclusions section above) of best practices to be performed during the pre-design phase (whether by the design contractor, external contractor, or University personnel), as well as guidelines for the form and content of information to be included in the Due Diligence Report or criteria package. For each CIP, each item on the checklist should be completed, or documented as to why the particular activity was deemed unnecessary or cost prohibitive for the particular CIP. Additionally, consider establishing parameters in regards to the scope and/or complexity of CIPs for which the standard checklist must be used (i.e., CIP with budgets greater than $250,000). Ensuring a consistent approach to planning may reduce the number of unforeseen conditions that are often the source of CIP not completing on time and within contract amounts.
   e. By CIP, perform a retrospective analysis of the cost of change orders due to unforeseen conditions that might have been detected during planning if additional due diligence activities had been performed. Compare to the cost of the due diligence activities that were deemed to be cost prohibitive to begin to create a database of information to be used to conduct cost-benefit analyses during the initial planning/scoping phases of future CIP.
   f. Revise EP 10.103 to change the responsibility for CIP from OCI to OPD/FBO.

2. OAC meetings:
   Include a standing agenda item at these meetings to review progress against the overall CIP schedule. This will add to the effectiveness of the monitoring controls, as key stakeholders will be held more accountable for resolving issues before they impact the budget and/or schedule.

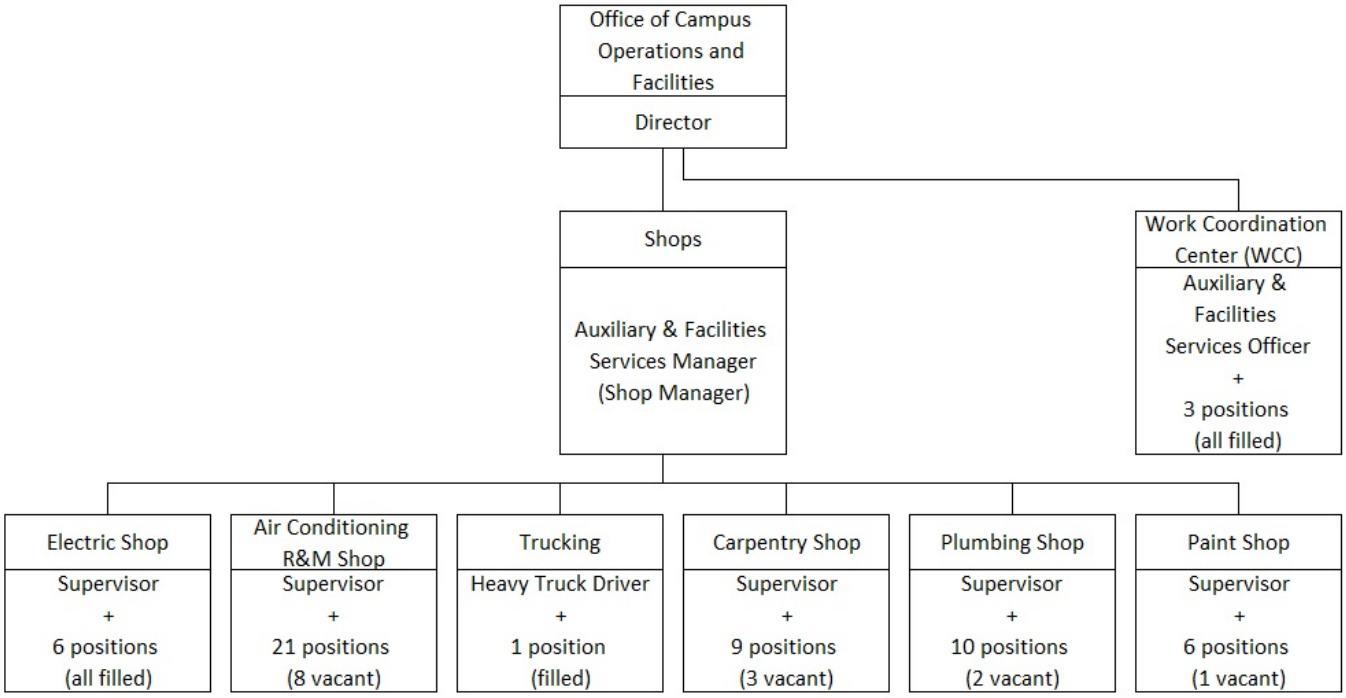
3. Quarterly construction progress report:
   Include total CIP costs (design, construction and contingency) in the quarterly reports to increase transparency with the Planning and Facilities Committee. Also, include additional columns to identify and discuss CIP with significant changes to estimated costs at completion or completion dates. The discussion should include details as to the cause of unanticipated change orders and/or schedule extensions. Furthermore, management should consider incorporating additional information in the 'Projects Pending Close-Out' section of the report, including the status of each project and what specific items are pending completion. Finally, identify process improvements to increase the accuracy and completeness of CIP information in quarterly reporting.

4. E-Builder:
   Although it is an effective control to require the VPA's approval of all change orders, allowing for electronic approval would improve the timeliness and efficiency of the approval process. The VPA informed Internal Audit that an enhancement was made to e-Builder in December 2017 that allowed change orders for all projects managed in e-Builder to be approved electronically.

Repairs and Maintenance (R&M) Projects

The labor and associated costs incurred to restore (repair) a capital asset to its productive capacity or to prevent (maintenance) a decline in the capital asset's productivity at the main campus of UHM is the responsibility of Campus Operations and Facilities (COF). COF is also responsible for R&M projects at several other UHM

owned facilities situated off the UHM campus. The COF's Shops and Work Coordination Center (WCC) organizational chart as of June 30, 2017 is noted below.



The WCC is responsible for the initial review of R&M work orders. A database system, AiM, stores and tracks work orders from submission to completion. A work request is a request for the repair or maintenance of a specific capital asset. University staff and faculty (customers) submit work requests to AiM through an online interface. Customers can also submit work requests by phone which WCC staff manually records into AiM. On a daily basis, the resulting work orders are electronically uploaded to the Lokahi system which categorizes and forwards the work order to the appropriate Shop. Lokahi complements AiM by allowing Shop Supervisors to easily search for work orders assigned to their respective Shop. The Shops-R&M workload for all work orders created during FY 2017 in AiM can be summarized as follows:

Table IV. R&M Work Orders by Shop

Shop	Work Orders Submitted in FY2017			
	Total Work Orders	**Total Work Orders Completed**	**Percentage of Work Orders Completed**	**Average Number of Employees (Beginning of FY2017 + end of FY2017 / 2)**
Electrical	2,731	2,609	96	6
Carpentry	1,890	1,486	79	6
Air Conditioning (AC)	3,347	3,063	92	15
Plumbing	2,079	1,998	96	8
Paint	540	502	93	6
Trucking	353	278	79	2
Total	**10,940**	**9,936**	**91**	**43**

Prior audits performed by Accuity, APPA or Internal Audit noted ongoing risks related to the timely and effective completion of work orders, quality of customer service, monitoring of open work orders, and controls over inventory (shop stock inventory) maintained within the Shops. Recommendations documented in these audits included the following:

1) Preparation of policies and procedures to manage and monitor R&M work orders, as well as the establishment of standard labor hours for recurring types of work orders to measure performance against those standards and improve the scheduling of work orders.
2) Implementation of a monitoring control in which COF management perform a periodic detailed review of open work orders within AiM to validate the accuracy of the database, as well as the timely completion of open work orders.
3) Development of strategies to improve customer service, including:
    a) Full utilization of the work order system and communicating work order status and completion
    b) Improve planning and scheduling of work orders
    c) Develop a strategic plan with customer service strategies as a major component
4) Implementation of controls over shop stock inventory.

Work performed

Internal Audit toured all of the Shops, reviewed and analyzed documentation and held discussions with COF personnel to gain an understanding of the current process for managing R&M projects, as well as to assess the implementation of procedures to mitigate the risks highlighted by Accuity, APPA and Internal Audit. More specifically, Internal Audit analyzed documentation to verify that Shop Supervisors were monitoring the timely completion of work orders and that the COF was providing improved customer service. Internal Audit also reviewed written policies and procedures to evaluate the appropriateness and sufficiency of shop stock inventory controls. Further, Internal Audit reviewed documents and held discussions with COF personnel to verify shop stock inventory control procedures were performed in accordance with written policies and procedures.

Observations and analysis

1: Policies and procedures

As highlighted in the aforementioned prior reports, a key risk for COF is that work orders are not completed in a timely and effective manner. Internal Audit noted that Shop Supervisors have implemented practices to manage and monitor the effective and timely completion of work orders. Per discussion with the Shop Manager, Shop Supervisors monitor employee work output by reviewing the employees' daily work log, which documents the employees' hours worked on each work order for a given day. On a daily basis, Shop Supervisors also review the shop stock inventory used for each work order for reasonableness and to verify the inventory has been removed from the shop stock inventory listing. Subsequent to this review, completed work orders are recorded as closed in AiM and Lokahi. Uncompleted work orders are transferred to the Shop's work order schedule for the next day or future date depending on the reason for the work not being completed. The purpose of the Shop Supervisor's review of the daily work logs and inventory used is to monitor the timely completion of work orders and to identify instances of unusual or unexpected time incurred and/or inventory used to discuss with Shop employees. Internal Audit believes this control is functioning as intended based on our review of a sample of daily work logs maintained at several shops (carpentry, electrical and AC) and discussions with the same Shops' Interim Shop Supervisor and Shop Supervisors. Although practices are in place, Internal Audit noted that COF has not developed written policies and procedures from work order initiation to completion. Further, standard labor hours for recurring work orders were not developed.

2: Monitoring

Internal Audit's prior report dated June 30, 2013 noted the risk that the information in AiM is not accurate. As of June 30, 2017, the AiM system contained approximately 3,300 open work orders, while the June 30, 2013 report

noted approximately 3,500 open work orders. The Director of COF believes both counts of open work orders recorded in AiM do not accurately reflect the actual open work orders, as a number of the work orders are aged greater than two years. Accordingly, the Director of COF commenced a detailed review of AiM in June 2017, which was completed in August 2017. The review noted that a significant portion of the open work orders in AiM had either been completed and closed, or no longer required work to be performed. Thus, these work orders were closed, reducing the number of open work orders to approximately 2,300, which the Director of COF believes more accurately reflects current open work orders. In January 2018, the Director of COF noted that the number of open work orders had further decreased to approximately 2,100 as of December 31, 2017. According to the Director of COF, a substantial portion of the open work orders is related to the Trucking and Key Shops (see discussion in the next paragraph). The Director of COF also stated that since the prior Internal Audit report, the focus has been on monitoring Lokahi, which is used on a daily basis to schedule and complete work orders. Internal Audit noted that there are no policies, procedures or practices for management to perform a periodic (at least monthly) review of AiM.

As presented in Table IV, over 92% of work orders submitted during the year ended June 30, 2017 were completed during that year for four (4) of the six (6) Shops. For the other two Shops, Trucking and Carpentry, 79% of work orders were completed, and Internal Audit noted the following per discussion with COF management:

1) Trucking- trucking work orders are scheduled by the customer to be performed in the future (e.g. moving or disposal services). Therefore, trucking work orders naturally have a longer timeline to completion.
2) Carpentry- 224 of the 404 FY2017 open work orders were assigned to the Key Shop, which completed 62% of their FY2017 work orders. Although the Key Shop is a segment within the Carpentry Shop, Key Shop personnel do not report to the Carpentry Supervisor. Instead, Key Shop personnel report directly to the Shop Manager. The Shop Manager noted that the Key Shop personnel do not follow the same protocols of providing a daily work log for review; therefore, COF management is uncertain as to the accuracy of the open work orders.

3: Customer service

The prior APPA report highlighted risks regarding the quality of customer service provided to COF customers. While a strategic plan with customer service as a key component has not been developed, COF has made improvements in regards to customer service. For example, the WCC now provides an estimated work order performance date upon request by the customer. Internal Audit reviewed WCC call logs and notes recorded in Lokahi noting that customer inquiries regarding the estimated timing for the performance of a work order are forwarded by the WCC to the appropriate Shop Supervisor. Within a day or two, the Shop Supervisor calls the customer with the expected work order timing that may range from a specific date to a specific week. If the promised timeframe cannot be met, the Shop Supervisor calls the customer to reschedule. However, the WCC and Shop Supervisor do not provide estimated work order performance dates unless requested by the customer or if the work will impact the operations of the customer. For work performed by external contractors, the Shop Supervisor or a University designee is expected to coordinate the scheduling with customers. However, according to the Director of COF, this process is not performed on a consistent basis. External contractors are utilized for work that is specialized, requires extensive manpower or resources, requires equipment not available to COF, or cannot be completed within a reasonable time due to existing workload. One example is the installation of air conditioning units.

Additionally, as suggested by APPA, Internal Audit noted that AiM sends automated confirmation e-mails to each customer upon receipt of a work order, as well as an e-mail when the work order is completed. The work order completion e-mail contains the work order number, a description of the repair and maintenance issue (e.g. air conditioner is not working, etc.), notification that the work has been completed and that the work order is now closed. However, the e-mail does not include other information that may be valuable to the customer, such as the date(s) the work was performed and completed, a description of the work performed, etc.

4: Shop stock inventory controls

Prior reports identified risks relating to the safeguarding and monitoring of shop stock inventory. The Director of COF noted that the dollar amount of shop stock inventory is not tracked, but the goal is to minimize this type of inventory. Per the Director, the value of the shop stock inventory as of June 30, 2017 and prospectively approximates $50,000. Internal Audit noted written policies and procedures for shop stock inventory included the performance of a monthly physical inventory count and reconciliation of beginning and ending inventory quantities. Coupled with the Shop Supervisors' review of the daily work logs, this policy is a key control to monitor and account for movement of inventory in and out of each Shop. Changes to shop stock inventory is tracked using manual forms. Internal Audit reviewed inventory monitoring at the carpentry, AC, plumbing, paint and electrical shops and noted that only the carpentry, plumbing and paint Shops were performing a monthly reconciliation and physical inventory count. The AC and electrical Shop Supervisors were aware of the policies and procedures but did not perform the inventory controls.

Conclusions and recommendations

Similar to the project management process, Internal Audit believes significant improvement has been realized in the repair and maintenance of UHM's capital assets. These improvements include the implementation of procedures regarding daily supervisory review of work orders and the inventory used in connection with the work orders. However, certain Shops have not implemented all improvement procedures and the monitoring of COF's automated work order system should be improved. A more comprehensive discussion regarding Internal Audit's conclusions and recommendations are noted below.

Conclusions

1. Policies, procedures and standards

COF is making progress to improve its processes and procedures to mitigate the risk of work orders not being completed in a timely and effective manner. In particular, Internal Audit believes the Shop Supervisors' reviews of daily work logs mitigates the risk of work orders not being completed timely and effectively.

2. Monitoring of AiM

Constant and consistent monitoring of AiM has not yet been implemented, however, a full review of AiM was conducted in August 2017. Additionally, as noted previously, Key Shop personnel do not currently follow the same processes and procedures as other Shop personnel.

3. Customer service

Internal Audit noted that COF has made incremental improvements to customer service in response to the APPA report. Internal Audit noted that the COF provides an estimated timeframe for the performance of the work order upon customer request, a practice that should continue.

4. Shop stock inventory controls

Internal Audit noted that some shops did not comply with written policies and procedures with respect to monthly inventory counts and reconciling inventory balances.

Recommendations

Management should consider the following recommendations for improving management of R&M:

1. Prepare written policies and procedures of the unwritten practices to review daily work logs to ensure continuity and consistency of operations.

2. Track the average time for each Shop to complete work orders. Successive months should then be reviewed against past months for reasonableness, and to determine whether additional investigation is required. The

eventual goal should be to develop standard labor hours for recurring types of work orders at each Shop, which will assist Shop Supervisors to determine the level of performance of each Shop employee and improve the scheduling of work orders.

3. Implement a monitoring control in which the Director of COF and Shop Manager perform a periodic (at least monthly) detailed review of open work orders within AiM to validate the accuracy of the database, as well as further mitigate the risk that open work orders are not completed in a timely manner. The review should include the aging of open work orders and the investigation of any aged greater than a pre-determined standard (at least 30 days). All work orders investigated should be tracked, resolved if possible, and documented as part of the review. According to the Director of COF, a work order committee was established in October 2017 and meets at least twice a week to discuss and monitor open work orders.

4. Implement a greater level of oversight over the Key Shop, requiring personnel to follow the same processes and procedures, including submitting a daily work log to the Shop Manager for review and approval. This will ensure key-related work is monitored, reducing the risk that such activities are not completed in a timely and effective manner. It will also provide a mechanism for reducing the risk that completed work orders are not updated in the AiM system in a timely manner.

5. As noted in the prior APPA report, customer service can be improved if the COF provides a work order performance date at least a day in advance of the work being performed to all customers with a work order that is specific to their workspace or office. In instances when an external contractor is used, the WCC or the Shop Supervisor should ensure all schedules are coordinated.

6. Review the COF e-mail notification template to determine if additional information would be valuable in providing customer service, such as including the date(s) that the work was performed and completed, a description of the work performed, etc.

7. Train employees on all policies and procedures and add controls for the Shop Manager to monitor that all Shops are in compliance with inventory policies and procedures. This will provide comfort that the key inventory monitoring control is functioning effectively at each of the Shops.

Appendix A

	Campus	Project	Original Construction Contract: Completion Date/ Cost	Revised/Estimated Construction Completion Date and Costs at Completion (unaudited)							
				Jun 30, 2016	Sep 30, 2016	Dec 31, 2016	Mar 31, 2017	June 30, 2017	Sep 30, 2017	Dec 31, 2017	Change from Original
CIP initiated prior to implementation of e-Builder											
1	Mānoa	Elevator modernization III	Dec 2016 $9,162	Mar 2017 $9,241	Mar 2017 $9,863	Jul 2017 $10,008	Jul 2017 $10,240	Jul 2017 $10,240	Dec 2017 $10,240	Feb 2018 $10,249	14 months $1,087
2	Mānoa	Coconut Isle, Lilipuna & Seawall Repair	Feb 2017 $5,999	Jan 2018 $5,999	Jan 2018 $5,999	Jan 2018 $5,999	Jan 2018 $5,999	Jan 2018 $5,999	Jan 2018 $5,999	July 2018 $6,414	17 months $415
3	Mānoa	Coconut Isle, Utility Rehabilitation/Replace	Nov 2016 $6,397	Feb 2017 $6,397	Mar 2017 $6,550	Oct 2017 $6,550	Oct 2017 $6,550	Oct 2017 $6,550	Oct 2017 $9,393	Apr 2018 9,393	17 months $2,996
4	Mānoa	Coconut Isle, Marine Lab Bldgs 1, 2	Feb 2018 $21,020	TBD $21,020	Feb 2018 $21,020	Feb 2018 $21,020	Mar 2018 $21,030	Mar 2018 $21,030	Mar 2018 $21,030	Mar 2018 $21,030	1 month $10
5	Lee CC	Repair and Refurbish Theater	Sep 2017 $10,256	Not Reported	Sep 2017 $10,256	Oct 2017 $10,256	Nov 2017 $10,256	Nov 2017 $10,256	Jan 2018 $10,624	Apr 2018 $10,624	7 months $368
6	Mānoa	Life Sciences Bldg	Spring 2019 $49,500	TBD TBD	Sprg 2019 $49,500	Sprg 2019 $49,500	Sprg 2019 $49,500	Sprg 2019 $49,500	Sprg 2019 $49,500	Sum 2019 $49,770	3 months $270
7	Mānoa	Replacement of Substation "M"	Dec 2017 $4,777	Not Reported	Not Reported	Not Reported	Not Reported	Jan 2018 $5,234	Jan 2018 $5,234	Feb 2018 $5,234	2 months $457
8	Kap CC	Culinary Institute of the Pacific	Oct 2016 $25,058	Dec 2016 $25,268	Jan 2017 $25,785	Feb 2017 $26,352	Feb 2017 $26,627	Feb 2017 $27,311	June 2017 $27,311	June 2017 $27,332	8 months $2,274
9	Hawai'i CC	Culinary Arts Bldg 1A & HSSS Bldg 1B	Mar 2016 $22,670	Aug 2016 $28,036	Jan 2017 $28,115	Feb 2017 $28,590	May 2017 $28,590	Aug 2017 $28,590	Aug 2017 $28,590	Aug 2017 $28,590	17 months $5,920
10	Mānoa	Clarence T.C. Ching Complex	Jul 2013 $12,393	Nov 2016 $14,649	Mar 2017 $14,688	Mar 2017 $14,688	Mar 2017 $14,688	Aug 2017 $14,688	Dec 2017 $14,688	Jan 2018 $14,688	54 months $2,295
11	Hon CC	Building 8807, Upgrade Infrastructure	May 2014 $8,609	Aug 2016 $10,836	Nov 2016 $10,836	Nov 2016 $10,836	Jun 2017 $10,836	Aug 2017 $10,836	Dec 2017 $10,836	Dec 2017 $10,836	43 months $2,227
12	Mānoa	Elevator modernization II	Feb 2016 $10,322	Not Reported	Dec 2016 $11,424	May 2017 $11,442	May 2017 $11,442	Sep 2017 $11,442	Sep 2017 $11,442	Sep 2017 $11,442	19 months $1,120
13	Mānoa	Bilger Complex, AC Upgrades	Nov 2013 $5,738	Dec 2016 $5,921	Mar 2017 $6,072	Jun 2017 $6,240	Jun 2017 $6,527	Jul 2017 $6,527	Jul 2017 $6,527	Jan 2018 $6,527	50 months $789
14	Mānoa	Ag. science facility, water plant and HVAC	Aug 2015 $5,271	Oct 2016 $5,429	Nov 2016 $5,429	Apr 2017 $5,441	Apr 2017 $5,441	Aug 2017 $5,441	Nov 2017 $5,441	Jan 2018 $5,441	30 months $170
15	Mānoa	Biomedical Sciences, R/R HVAC, DDC	Aug 2013 $5,325	Oct 2016 $5,383	Dec 2016 $5,383	May 2017 $5,383	May 2017 $5,383	Sep 2017 $5,383	Nov 2017 $5,383	Jan 2018 $5,683	53 months $358

	Campus	Project	Original Construction Contract: Completion Date/ Cost	Revised/Estimated Construction Completion Date and Costs at Completion (unaudited)							
				Jun 30, 2016	Sep 30, 2016	Dec 31, 2016	Mar 31, 2017	June 30, 2017	Sep 30, 2017	Dec 31, 2017	Change from Original
16	Mānoa	Hamilton Library, Phase II	Aug 2013 $5,902	Not Reported	Oct 2016 $6,351	Apr 2017 $6,351	Apr 2017 $6,351	July 2017 $6,351	Complete $6,351	Complete $6,351	47 months $449
17	UH Hilo	Campus Security & Emergency Operations	Oct 2015 $4,589	Not Reported	Not Reported	Sep 2016 $5,075	Sep 2016 $5,075	Sep 2017 $5,075	Sep 2017 $5,075	Sep 2017 $5,087	23 months $498
CIP managed in e-Builder											
18	West O'ahu	Admin and Allied Health Facility	May 2018 $29,941	TBD $29,941	May 2018 $29,941	May 2018 $29,941	Oct 2018 $29,941	Oct 2018 $29,941	Oct 2018 $30,080	Oct 2018 $30,406	5 months $465
19	Hilo	Daniel K. Inouye College of Pharmacy	May 2018 $31,300	TBD $32,670	May 2018 $31,300	May 2018 $31,300	May 2018 $31,300	May 2018 $31,300	May 2018 $31,409	Oct 2018 $31,409	5 months $109
20	Mānoa	Hamilton Library Addition, Phase III	Sep 2018 $6,018	Not Reported	Not Reported	Not Reported	TBD $6,018	TBD $6,018	Sep 2018 $6,018	Sep 2018 $6,018	- -
21	Mānoa	Kennedy Theater Repairs	July 2017 $5,492	Not Reported	Not Reported	July 2017 $5,492	July 2017 $5,507	July 2017 $5,507	Nov 2017 $5,962	June 2018 $6,033	11 months $541
22	Mānoa	Saunders Hall Ext. Repairs and Reroof	Aug 2018 $5,228	Not Reported	Not Reported	Not Reported	Aug 2018 $5,229	Aug 2018 $5,229	Aug 2018 $5,229	Aug 2018 $5,377	- $149
23	Mānoa	Law School- Legal Outreach Center	Nov 2017 $7,372	TBD $7,372	Nov 2017 $7,372	Nov 2017 $7,372	Nov 2017 $7,372	Nov 2017 $7,372	Nov 2017 $7,372	Mar 2018 $7,458	4 months $86

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Jan S. Gouveia
Vice President for Administration

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UNIVERSITY OF HAWAII
PRESIDENT'S OFFICE

March 2, 2018

MEMORANDUM

TO: Chair Michael McEnerney
Board of Regents Committee on Independent Audit

VIA: David Lassner
President

FROM: Jan Gouveia
Vice President for Administration

SUBJECT: RESPONSE TO OFFICE OF INTERNAL AUDIT DRAFT REPORT, "REVIEW OF CAPITAL IMPROVEMENT PROJECTS AND REPAIRS AND MAINTENANCE."

Management for the University of Hawai'i ("Management") has reviewed the Office of Internal Audit draft report, "Review of Capital Improvement Projects and Repairs and Maintenance", issued in February 2018 and appreciates the opportunity to provide the following responses and updates on the actions taken to improve our Capital Improvement and Repairs and Maintenance programs since the audit review period.

RESPONSES TO RECOMMENDATIONS:

PROCUREMENT OF CAPITAL IMPROVEMENT PROJECTS (CIP)

1. Adopt electronic signatures for Form 1 to ensure approvals can be obtained and evidenced in a more efficient manner. Executive Policy (EP) 2.216 establishes University policy for the acceptability of electronic approvals/signatures.

Response: The University of Hawai'i procured an electronic workflow system in 2017 that supports electronic signatures. The Office of Systems Integration will be leading this new project and will work with the respective Facilities staff in 2019.

2. Establish goals for the expected duration of each procurement activity for both RFPs and IFBs (as well as for the CIP procurement process as a whole). One example of a procurement activity where opportunities for improvement exists is the duration from "bid due date to contract award", which only showed marginal improvement in Table 1. Consistent and effective monitoring of actual to expected durations may identify areas for additional improvement.

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Response: The Facilities Business Office (FBO) Director and Contracts Manager has identified key duration goals for each major procurement milestone from the initial request for procurement services to the Notice to Proceed. Deviations from the goals are reviewed and discussed with the Facilities Directors. The progress for each procurement is documented in the "Procurement Status" report. This report is made available to key stakeholders (Facilities Directors and Executive Management) to provide them with real-time status on all procurements. This recommendation has been completed and was implemented in February 2018. In addition, the procurement processes are continuously being reviewed for efficiency and to meet project goals.

CIP MANAGEMENT

1. Policies and procedures.

   a. Review and update the Construction Management Manual dated July 22, 2015 for changes to processes and procedures, including changes due to the implementation of e-Builder.

   Response: The Office of Project Delivery (OPD) Director and the Construction Manager is working with their team on updating the Construction Management Manual and planned completion date is by June 2018. This manual will be continuously updated using industry best practices.

   b. Update policies and procedures to include guidance and requirements for the establishment of CIP contingencies.

   Response: OPD's current practice is to include contingencies for CIP projects and the Director's team will update the procedures to include guidance by June 2018.

   c. Update policies and procedures to address documenting and funding change orders resulting from University (owner) requests.

   Response: Currently, the Owner-generated requests resulting in change orders are recorded in e-Builder, the University's Project Management System. The procedures will be reviewed and published by June 2018.

   d. Create a standard checklist (see list for consideration in conclusions section above) of best practices to be performed during the pre-design phase (whether by the design contractor, external contractor, or University personnel), as well as guidelines for the form and content of information to be included in the Due Diligence Report or criteria package. For each CIP, each item on the checklist should be completed or documented as to why the particular activity was deemed unnecessary or cost prohibitive for the particular CIP. Additionally, consider establishing parameters in regards to the scope and/or complexity of CIPs for which the standard checklist must be used (i.e. CIP with budgets greater than

$250,000). Ensuring a consistent approach to planning may reduce the number of unforeseen conditions that are often the source of CIP not completing on time and within contract amounts.

Response: The standard checklist in the Design Manual was completed in October 2017 and is continuously updated for best practice. All procedures are being reviewed and compared with past experiences and best industry practices and the next update is scheduled by December 2018.

e. By CIP, perform a retrospective analysis of the cost of change orders due to unforeseen conditions that might have been detected during planning if additional due diligence activities had been performed. Compare to the cost of the due diligence activities that were deemed to be cost prohibitive to begin to create a database of information to be used to conduct cost-benefit analysis during the initial planning/scoping phases of future CIP.

Response: In our opinion, the cost-benefit analysis during the initial planning/scoping phases will be done if deemed necessary. The design checklist standards will be updated based on lessons learned and anticipated for June 2018.

2. OAC meetings:

Include a standing agenda item at these meetings to review progress against the overall CIP schedule. This will add to the effectiveness of the monitoring controls, as key stakeholders will be held more accountable for resolving issues before they impact the budget and/or schedule.

Response: The CIP Schedule is addressed in every OAC meeting and will be documented in the minutes. This recommendation has been completed and was implemented in February 2018.

3. Quarterly construction progress report:

Include total CIP costs (design, construction and contingency) in the quarterly reports to increase transparency with the Planning and Facilities Committee. Also include additional columns to identify and discuss CIP with significant changes to estimated costs at completion or completion dates. The discussion should include details as to the cause of unanticipated change orders and/or schedule extensions. Furthermore, management should consider incorporating additional information in the "Projects Pending Close-Out" section of the report, including the status of each project and what specific items are pending completion. Finally, identify process improvements to increase the accuracy and completeness of CIP information in quarterly reporting.

Response: Planning and Design are funded separately from Construction. The requirements to report to the Planning and Facilities consist of $1 million for Design and $5 million for Construction (both including contingencies) which is reported in the Quarterly report. Any

changes to estimated cost and completion dates are included in the report for current projects and projects pending close out. The OPD Director has assigned additional staff to assist with reporting and will work directly with the project managers and the other Facilities Directors. The next report will be as of March 31, 2018.

4. E-Builder:

Although it is an effective control to require the VPA's approval of all change orders, allowing for electronic approval would improve the timeliness and efficiency of the approval process. The VPA informed Internal Audit that an enhancement was made to e-Builder in December 2017 that allowed change orders for all projects managed in e-Builder to be approved electronically.

Response: Electronic approvals for change orders were implemented in e-Builders on December 29, 2017. This recommendation has been completed.

REPAIRS AND MAINTENANCE (R&M) PROJECTS

1. Prepare written policies and procedures of the unwritten practices to review daily work logs to ensure continuity and consistency of operations.

Response: The Campus Operations and Facilities (COPF) Director has assembled a working group of section managers who meet on a weekly basis to update and consolidate the policies and procedures. This working group started meeting in January 2018 and meets weekly. We anticipate the procedures to be completed by June 2018.

2. Track the average time for each Shop to complete work orders. Successive months should then be reviewed against past months for reasonableness, and to determine whether additional investigation is required. The eventual goal should be to develop standard labor hours for recurring types of work orders at each Shop, which will assist Shop Supervisors to determine the level of performance of each Shop employee and improve the scheduling of work orders.

Response: The Lokahi system tracks the time of work orders and the Shop Supervisors manages the work performed, time required and addresses any unreasonable completion time. Management team is in the process of identifying standard labor hours for recurring type of work. The Director of COPF anticipates this recommendation to be completed by December 2018.

3. Implement a monitoring control in which the Director of COPF and Shop Manager perform a periodic (at least monthly) detailed review of open work orders with AiM to validate the accuracy of the database, as well as further mitigate the risk that open work orders are not completed in a timely manner. The review should include the aging of open work orders and the investigation of any aged greater than a pre-determined standard (at least 30 days). All work orders investigated should be tracked, resolved if possible, and documented as part of the

review. According to the Director of COPF, a work order committee was established in October 2017 and meets at least twice a week to discuss and monitor open work orders.

Response: The Director of COPF, Managers and Shop Supervisors are monitoring the work order status to completion through the Lokahi system. This system provides a report of open, closed and new work orders for each month. In addition, the Trade Shop Supervisors review the work orders daily. All work orders greater than 30 days are reviewed with the Supervisors and Managers to identify any issues and resolutions. The Work Order Committee was established in July 2017 and meets twice a month to review all open work orders. This recommendation has been completed.

4. Implement a greater level of oversight over the Key Shop, requiring personnel to follow the same processes and procedures, including submitting a daily work log to the Shop Manager for review and approval. This will ensure key-related work is monitored, reducing the risk that such activities are not completed in a timely and effective manner. It will also provide a mechanism for reducing the risk that completed work orders are not updated in the AiM system in a timely manner.

Response: The Key Shop has oversight from the Shop Supervisor (monitors weekly) and the Shop Superintendent (monitors monthly). This recommendation has been completed.

5. As noted in the prior APPA report, customer service can be improved if the COPF provides a work order performance date at least a day in advance of the work being performed to all customers with a work order that is specific to their workspace or office. In instances when an external contractor is used, the WCC or the Shop Supervisor should ensure all schedules are coordinated.

Response: All work performed by an external contractor is coordinated by the Facilities Office who will inform the customers. The general practice is to contact the affected customer at least one-day prior to the planned performance date. This recommendation has been completed.

6. Review the COPF e-mail notification template to determine if additional information would be valuable in providing customer service, such as including the date(s) that the work was performed and completed, a description of the work performed, etc.

Response: The COPF Director and managers are reviewing the notification e-mail to determine if additional information or improvements are needed. We anticipate completion by June 2018.

7. Train employees on all policies and procedures and add controls for the Shop Manager to monitor that all Shops are in compliance with inventory policies and procedures. This will provide comfort that the key inventory monitoring control is functioning effectively at each of the Shops.

Response: Once the new policies and procedures are completed, training will be provided. We anticipate the training will begin by December 2018.

IN CONCLUSION

In February 2017, the University reorganized the Facilities Departments (Office of Project Delivery, Campus Operations and Facilities, Planning and Sustainability and the Facilities Business Office). The new Administration has assumed a stronger centralized leadership role and has made improvements in procurement, construction management of CIP and repairs and maintenance of existing buildings. We will continue to collaborate ideas and strive to improve our Facilities campuses.