UNIVERSITY OF CALIFORNIA, SAN FRANCISCO AUDIT AND ADVISORY SERVICES

UCSF
Deferred Maintenance
Facilities Investment Needs
Project #19-038

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Audit & Advisory Services

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SUBJECT: Deferred Maintenance Facilities Investment Needs Project #19-038

As a planned internal audit for Fiscal Year 2019, Audit and Advisory Services ("A&AS") conducted a review of the UCSF Facilities Investment Needs Program. The purpose of this review was to assess the internal controls surrounding the program and project management for deferred maintenance projects.

Our services were performed in accordance with the applicable International Standards for the Professional Practice of Internal Auditing as prescribed by the Institute of Internal Auditors (the "IIA Standards").

Our review was completed and the preliminary draft report was provided to department management in November 2018. Management provided us with their final comments and responses to our observations in January 2019. The observations and corrective actions have been discussed and agreed upon with department management and it is management's responsibility to implement the corrective actions stated in the report. In accordance with the University of California audit policy, A&AS will periodically follow up to confirm that the agreed upon management corrective actions are completed within the dates specified in the final report.

This report is intended solely for the information and internal use of UCSF management and the Ethics, Compliance and Audit Board, and is not intended to be and should not be used by any other person or entity.

Sincerely,

Irene McGlynn Chief Audit Officer



EXECUTIVE SUMMARY

I. BACKGROUND

As a planned audit for Fiscal Year 2019, Audit and Advisory Services (A&AS) conducted a review of the UCSF Facilities Investment Needs (FIN) Program. The objective of the review was to assess the internal controls surrounding the program and project management for deferred maintenance (DM) projects.

State funding stopped for DM projects in early 2000, creating a backlog of DM that became an organizational risk as the backlog grew. To address this risk, the FIN Prioritization Committee (FPC) was established in 2011 to identify and prioritize DM projects based on a risk assessment process that uses risk scores based on likelihood of service failure and impact on health and safety to employees and public. The FPC comprises of representatives from Risk Management, Budget Office, Real Estate (RE), Facilities Services (FS) and department representatives. Annually, the FPC meets to risk rank projects for each fiscal year as new projects are considered and prior projects are re-prioritized as necessary.

FIN projects includes DM, capital improvement, fire/life safety and code compliance. The FIN Program is currently managed by FS, which has oversight of the DM funding allocation and identifies building maintenance and renewal needs. FS partners with RE for execution of the FIN projects.

FIN projects costs are tracked in FM Track, a homegrown system. In November 2017, RE transitioned from FM Track to the Unifier Business System (UBS) for tracking capital improvement projects, including FIN projects.

The funds allocated for DM projects and actual spend over the last three fiscal years are shown below:

	DM- FIN Annual Allocation	Planned Budget	Actual Expenditure	
FY15-16	\$15.5M	\$13.9M	\$7M (50%)	
FY16-17	\$16.1M	\$14M	\$8M (57%)	
FY17-18	\$16.9M	\$16.5M	\$10M (60%)	

Source: Budget & Resource Management Services

Actual expenditure has not met RE's original anticipated forecast. Delays in addressing critical infrastructure DM repairs creates significant operational risk to the University.

II. AUDIT PURPOSE AND SCOPE

The purpose of this review was to assess the effectiveness of the internal controls and processes for FIN program management. The areas reviewed included project identification and prioritization, cost estimation, execution and timeliness of project completion, project budget and status monitoring.

The scope of the review covered transactions and activities for the period January 2014 through to October 2018 for data within the FM Track system. New FIN projects created in UBS or in Maximo were out of scope. Reports and data used for the validation and analysis in this review were from existing financial reports used by FS and RE.

Procedures performed as part of the review included interviews with FS, RE and FSC personnel, evaluation of overall FIN program processes, analysis of project status to determine causes of delays, assessment of budget variances and evaluation of soft costs compared to hard cost. For more detailed steps, please refer to Appendix B.

Work performed was limited to the specific activities and procedures described above. As such, this report is not intended to, nor can it be relied upon to provide an assessment of compliance beyond those areas specifically reviewed. Fieldwork was completed in November 2018.

III. SUMMARY

Based on work performed, FS has a formal risk assessment process for identifying critical DM projects, prioritization of projects through risk ranking and intake process of potential DM projects. The FPC is made up of relevant stakeholders. As part of UCOP ICAMP initiative, FS has recently hired building inspectors to perform a physical condition assessment of all campus buildings that will provide more comprehensive data on maintenance needs and will enable better prioritization for FIN projects. Distribution of monthly budget status report has recently resumed for monitoring project spend including projection forecasts.

However, delays in project completion have resulted in a number of critical FIN infrastructure projects such as water line replacements, Mission Bay power plant repairs, and fire-water pump replacements not being addressed for multiple years. This creates significant operational risks for the University if these are not addressed in a timely manner.

Other opportunities for improvement in controls and processes identified include: enhancements to the approval process for scope and budget augmentation, project monitoring and reporting, development of performance metrics to measure project progress and costs and greater clarity on expected level of soft costs for FIN projects.

The specific observations from this review are listed below.

- 1. Critical FIN infrastructure projects have not been addressed for multiple years despite funding availability.
- 2. Current funds are insufficient to complete existing approved FIN projects and will require use of future funding allocations; therefore, the funds available for new projects to address the DM backlog will be limited.
- 3. Approval processes for scope and budget augmentation and approval authority are not well defined.
- 4. Current project financial status reports do not provide complete and accurate information for effective tracking and monitoring of projects.

5. Key Performance Indicators have not been developed for measuring project progress and cost.

6. There is lack of clarity on soft cost thresholds for FIN projects or processes for when a FIN project becomes a capital improvement projects and warrants the use of existing capital improvement budget guidelines.

Further detail on the specific observations and the opportunities for improvement can be found on the next page in the section on Observations and Management Corrective Action Plans.

IV. OBSERVATIONS AND MANAGEMENT CORRECTIVE ACTIONS ("MCA")

No.	Observation					Risk/Effect	Recommendation	<u>MCA</u>
No.	Critical FIN infrastructure projects have not been completed or addressed for multiple years despite funding availability. Since FY15, UCSF has allocated significant funding to address FIN DM projects; however, critical FIN infrastructure projects such as water line replacements, power plants repairs, and fire-water pump replacements remain incomplete on the FIN list for multiple years. If not addressed, these infrastructure could fail at any time and could place UCSF operations, including critical Health operations in jeopardy. Analysis of projects in open and closed status for the period 2014 – 2018 indicates an overall project completion rate of 35%. Additionally, analysis of active projects as of October 2018 indicated that 28 projects initiated 2 or more years ago are still in scope or design stage – see table below:		Risk/Effect Untimely completion of critical FIN projects may pose safety concerns on UCSF community, and could place UCSF operations, including critical functions affecting patient care, in jeopardy. Additionally, delays in project completion can cause cost escalations that may not have been budgeted.	Priority should be given to complete existing long outstanding critical FIN infrastructure projects and a work plan should be developed.	Facilities Services (FS) Action Plans: 1. FS will schedule and lead FIN program quarterly funding update and approval meetings for the purpose of monitoring project progress to determine what additional resources are needed and/or discuss larger projects with schedule or budget issues. At these quarterly meeting, FS will provide for their projects portfolio budget updates to include total expenses to date (directly from ledgers), and forecast to year end (projections from management). FS will			
	Year Project Created	Scope Phase	Design Phase	Total		been budgeted.		consolidate this report with the
	2014	0	2	2				report provided by RE for a
	2015	1	5	6				comprehensive FIN program budget reporting. Reports will
	2016	11	9	20	<u></u>			be due 30 days after the fiscal
		12	16	28				period ends for each quarter.
	Discussion with RE management highlighted several contributing factors to the delay in completion of projects: PM staffing resource constraints has hindered progress in completing projects. RE has hired					Participants at this meeting include, at a minimum, Budget Office, RE, and FS. 2. Project portfolio assignments for the FIN Program will be determined at least once		

No.	<u>Observation</u>	Risk/Effect	Recommendation	<u>MCA</u>
	additional PMs and currently RE has a total of eight project managers (PM). Additionally, availability of Facilities engineers and Building Trade specialists to respond to design and scope inquiries contributed to delays (e.g. projects. M3635, M5620, M6616, M6617, and M6627). Expansion of project scope impacted project completion timelines. Expansion of new campus building construction created competing priorities. Expansion of funding for DM increased the number of projects to be completed. Dependency on other projects including external delays or externally imposed requirements contributed to further delays (e.g. projects # M4613B, M4622, M5605, M5655 and M6623).			annually. The assignments will be made in writing so that accountability for each project is clear and transparent to all parties. FS will be responsible for providing the written documentation of project assignments. Additionally, FS for its portfolio of projects will be responsible for procuring resources (construction managers, project managers, financial and administrative support) to ensure on time and on budget delivery of projects. 3. FS will work with RE to implement a monthly project update meeting to report out on project status, obstacles, and contingency plans for their respective FIN project portfolios. Minutes of the meetings will be distributed to appropriate parties. Target Date May 1, 2019 Responsible Party: Assistant Vice Chancellor, Facilities Services

No.	Observation	Risk/Effect	Recommendation	MCA
				Real Estate (RE) Action Plans:
				1. RE will develop a detailed work plan on how the outstanding critical projects will be completed including adding construction management delivery resources.
				 RE for its portfolio of projects will provide to FS a quarterly budget update report that will include total expenses to date (directly from ledgers), and forecast to year end (projections from management). Reports will be due 30 days after the fiscal period ends for each quarter. RE for its portfolio of projects will be responsible for procuring resources
				(construction managers, project managers, financial and administrative support) to ensure on time and on budget delivery of projects.
				Target Date May 1, 2019
				Responsible Party: Associate Vice Chancellor, Capital Program Management, Real Estate

	Risk/Effect	<u>Recommendation</u>	<u>MCA</u>
approved FIN projects and will require use of future funding allocations; thereby limiting the funds available for new projects to address the DM backlog. The current forecast shows that all existing committed FIN projects totaling about \$117M will be completed by 2021-22 and funding allocations through that period will be required to complete those current projects. Assuming that forecast	The DM backlog may not be adequately addressed, as future funding allocations will be required to complete existing committed projects.	a. FS should improve reporting and tracking of project budget and actual expenditures. (see observation # 5 below) b. Cost escalations should be factored into the budget for projects that are likely to take several years to complete. c. FS should consider developing better cost estimate methodology in the intake process and for complex projects should consider allocating full funds only after a detailed scope study has been completed.	FS Action Plans: 1. FS will schedule and lead FIN program quarterly funding update and approval meetings for the purpose of monitoring project progress to determine what additional resources are needed and/or discuss larger projects with schedule or budget issues. At these quarterly meeting, FS will provide for their projects portfolio budget updates to include total expenses to date (directly from ledgers), and forecast to year end (projections from management). FS will consolidate this report with the report provided by RE for a comprehensive FIN program budget reporting. Reports will be due 30 days after the fiscal period ends for each quarter. Participants at this meeting include, at a minimum, Budget Office, RE, and FS. 2. FS will work with RE to implement a monthly project update meeting to report out on project status, obstacles,

No.	Observation	Risk/Effect	Recommendation	MCA
3.	Approval processes for scope and budget augmentation	Without effective	a. A formal approval	respective FIN project portfolios. Target Date May 1, 2019 Responsible Party: Assistant Vice Chancellor, Facilities Services FS Action Plans:
	and approval authority are not well defined. While there is an internal budget increase request process within RE, the process for review and approval of significant scope/budget augmentations for FIN projects does not include FPC review and approval after an initial scope study. Furthermore, no documented delegation of authority for approving scope and budget changes of FIN projects has been communicated, leading to confusion amongst the FS and RE teams on approval authority.	oversight and governance of scope and budget changes, the opportunity cost of scope changes may not be fully evaluated and may increase the risk of project budget overspends.	process, including roles and responsibilities for scope and budget augmentation, for FIN projects should be defined and documented. b. Consideration should be given to setting a budget increase threshold that requires presentation to the FPC for review and approval together with an assessment of impact on completion of other projects.	 FS will transform the FIN Prioritization Committee into a FIN Governance Committee. Membership will be confirmed and representatives from the Deans/Customers will be added. Governance documents will be presented and ratified, including documentation of the items 2-4 below. FS will develop scope development guidelines and create SOP/process for scope and funding changes. FS will implement change order process and RFI. FS will initiate project level UCSF core team kick-off meetings to increase scope accuracy. Target Date July 1, 2019

No.	Observation	Risk/Effect	Recommendation	MCA
				Responsible Party: Assistant Vice Chancellor, Facilities Services
4.	Current project financial status reports do not provide complete and accurate information for effective tracking and monitoring of projects. FS and RE currently have various financial status reports that are used for monitoring project expenditures. Additionally, the two teams have regular monthly and quarterly meetings. Review of the reports and monitoring process highlighted the following issues: A. FM Track: 1. Total project budget is not easily discernible from the status report and cannot be used to monitor cost variances as the project budget can be a moving target due to the initial scope not being fully defined. As such, it is a challenge to determine true budget variances. For example, project # M1622 shows a total project cost as \$2.4M but a total committed cost of \$15M, and the budget worksheet for the funding request indicated \$21M in estimated project cost through completion. The initial \$2.4M was specific to the completion of a scope study only, and the financial status report had not been updated accordingly. 2. Additionally, project status is not always updated on the monthly or quarterly reports including reasons for project delays. For example, we identified three projects (M2612, M6641 and M3543A) that were showing as "financially closed," but upon further	The lack of complete and accurate data hinders effective monitoring of projects and may cause issues to go undetected or may not be addressed timely.	 a. FS to work with RE and FSC to identify the specific data elements needed for better tracking and monitoring of projects, including project status and delay reasons, and to develop reports accordingly. b. RE should develop a plan to resolve the data integrity issues for the UBS so that more complete and accurate reporting can occur to facilitate effective monitoring of projects and allow performance metrics to be developed. c. RE should establish a process for keeping financial data updated so that reports provide current information. 	1. FS will schedule and lead FIN program quarterly funding update and approval meetings for the purpose of monitoring project progress to determine what additional resources are needed and/or discuss larger projects with schedule or budget issues. At these quarterly meeting, FS will provide for their projects portfolio budget updates to include total expenses to date (directly from ledgers), and forecast to year end (projections from management). FS will consolidate this report with the report provided by RE for a comprehensive FIN program budget reporting. Reports will be due 30 days after the fiscal period ends for each quarter. Participants at this meeting include, at a minimum, Budget Office, RE, and FS. Target Date May 1, 2019

No.	<u>Observation</u>	Risk/Effect	<u>Recommendation</u>	MCA
	inquiries, were found to be cancelled after initial scoping.3. The project risk category is not captured and reported to identify projects that are in or approaching active failure to help facilitate prioritization.		d. Track the four different sub-FIN projects to provide more clarity on overall program.	2. FS will work with RE to provide separate tracking of budgets for the four sub-programs identified within FIN. RE and FS will get approvals of the sub budgets by appropriate senior leadership members.
	B. UBS:1. Data reliability and integrity are limiting the usage of the reports due to data inaccuracies that require manual manipulation of the data to correct.			3. FS will create customer checklist (conditions of financial satisfaction for each project).
	Effective November 2017, the FIN projects are tracked in the new UBS. General ledger data is uploaded to UBS, but it was reported that the formula used for uploading is contributing to incorrect data, which then requires manual correction. The resolution of these errors has been at the transactional level as opposed to the global level. Additionally, the forecast data is manually compiled due to current data integrity issues which hinders the use of the functionality in UBS.			4. FS will create a FIN library/website with processes and forms. Target Date October 1, 2019 Responsible Party: Assistant Vice Chancellor, Facilities Services
	 There is a limitation on UBS reporting capability that impacts efficiency in extracting data for monitoring purposes. For example, current reporting capability does not enable exporting a report for specific data fields or for specific project populations, so producing a desired report requires manual manipulation of data and analysis of data to ensure accuracy. Timeline and Forecast: 			RE Action Plans: 1. RE for its portfolio of projects will provide to FS a quarterly budget update report that will include total expenses to date (directly from ledgers), and forecast to year end (projections from management. Reports will be due 30 days after the fiscal period ends for each quarter.

<u>No.</u>	<u>Observation</u>	Risk/Effect	Recommendation	<u>MCA</u>
	Project timeline and accurate expenditure forecasts were not reported, creating lack of visibility on the project progress. Effective September 2018, RE began reporting a three year forecast. D. Tracking of sub-FIN projects: There is not an effective tracking process for sub-FIN projects allocations. Current process for tracking of allocations for sub-FIN projects such as ADA; Fire Life Safety and Emergency repairs is not well defined to provide clarity of the allocations.			 Target Date May 1, 2019 2. RE will correct accounting inconsistencies in all UBS business processes to assure accurate financial data for reporting and forecasting of FIN project costs. 3. RE will develop appropriate UBS reports and processes to enable accurate and updated project performance reporting that show current information. 4. RE will work with FS to develop separate means of identifying, budgeting, tracking, implementing and reporting the four different sub-FIN project types. Target Date October 1, 2019 Responsible Party: Associate Vice Chancellor, Capital Program Management
5.	Key Performance Indicators (KPIs) have not been developed for measuring project progress and cost.	Without measurable KPIs, potential risks may	FM in conjunction with RE should consider developing key	FS & RE Action Plans: 1. All Project delivery teams (FS
	While various budget status and other financial reports are produced and discussed monthly by FS and RE, key	not be identified early to take	performance measures including:	& RE) to provide quarterly the following KPI's for all projects:

<u>No.</u>	<u>Observation</u>	Risk/Effect	Recommendation	MCA
	performance metrics, such as schedule variance, cost variance, project completion rates and cost performance, have not been developed to provide transparency to all stakeholders on project progress. Additionally, postevaluations following project completion are not performed. Good project management standards require use of KPIs to monitor project progress to provide clarity of direction for the team as well as transparency of progress for other stakeholders.	corrective actions and project performance and progress may not be visible to all stakeholders.	 a. Schedule Variance to indicate how much ahead or behind of planned budget and scheduled work the project is running. b. Cost Variance to measure planned budget vs actual spend to identify scope changes and approval for budget increase. c. Project Completion Rate including percentage of projects completed on schedule. d. Number of canceled projects and cost incurred. e. Cost of managing processes to measure soft costs as percentage of hard costs. 	 Schedule and budget updates and projections, including relevant variances Project completion rate Number of canceled projects and costs associated with projects being canceled Hard costs and soft costs. KPIs will be reported out to the FIN Governance Committee at least annually. Target Date October 1, 2019 Responsible Party: Assistant Vice Chancellor, Facilities Services in conjunction with Associate Vice Chancellor, Capital Programs
6.	There is lack of clarity on soft costs thresholds for FIN projects or processes for when a FIN project becomes a capital improvement project and warrants the use of existing capital improvement budget (CIB) guidelines.	Lack of project management cost guidelines for FIN projects limits any evaluation and monitoring of the	RE and FS should work together and agree on a standard threshold for soft costs for FIN projects and to develop procedures for	FS Action Plans: 1. FS will determine how to treat FIN projects as maintenance and not capital projects and will set KPI's for soft cost.

No.	<u>Observation</u>	Risk/Effect	Recommendation	<u>MCA</u>
	Analysis of closed projects shows an average of 27% soft costs for projects initiated since 2014. UCOP Facilities Manual guidelines stipulate that internal and external design and administration fees (soft costs) should be limited to 13% of construction costs for capital improvement projects valued at \$750K or greater.¹ Upon discussion with RE Capital Projects team, it was stated that FIN projects are not subject to "CIB" guidelines, even though some projects have construction costs or project sizes greater than \$750K. Also, RE communicated that the UCSF soft cost limit for capital improvement projects is set at 18-21% based on a verbal recommendation from UCOP. There is no process or mechanism in FM Track or UBS to flag when a FIN project has expanded to become a capital improvement project and indicate when CIB guidelines will be applicable.	effectiveness of cost performance, including identification and analysis of causes of outliers.	notification when circumstances dictate a higher level of PM time due to complexity and additional coordination of the project.	Processes and procedures will match the processes for maintenance projects, except where a project does in fact become a capital project. 2. FS will clarify that FIN projects are governed by the FIN Governance Committee in its written documentation. Documentation will include when FS must inform the FGC. Target Date October 1, 2019 Responsible Party: Assistant Vice Chancellor, Facilities Services

¹ The 13% limit include cost line items 5 (design services); 6 (project management) and 7 (survey, tests, printing & advertising) on the CIB worksheet

Appendix A: Table illustrating the forecast spend for completion of existing committed projects and respective funding.

	Total	Actual	2018-19	2019-20	2020-21	2021-22
	Budget	Expenditure	\$	\$	\$	\$
	Committed	through	Ψ	*	Ψ	Ψ
	FIN Projects	2017-18				
	\$ 1	\$				
	117,737.084	14,495,524				
C/fwd Funding			44,359,450	23,817,890	6,686,890	5,372,410
Annual Funding			20,500,000	21,084,000	21,670,520	22,000,000
DM State funding			5,600,000	3,000,000	3,000,000	3,000,000
Less: Emergency Reserve			(3,000,000)	(3,000,000)	(4,000,000)	(4,000,000)
Less: Spending forecast for existing committed projects in progress			(43,841,560)	(38,215,000)	(16,985,000)	(4,200,000)
Less: New FIN Projects					(5,000,000)	(22,172,410)
Balance			23,817,890	6,686,890	5,372,410	

APPENDIX B

To conduct our review the following procedures were performed for the areas in scope:

• Interviewed FS, RE and FSC personnel to gain an understanding of DM process for identifying, approving and execution of projects;

- Reviewed prior DM audits and external audits for understanding guideline and best practices relevant to the scope of this review;
- Review UCOP DM document and APPA to understanding guideline expectations;
- Review UCSF FIN risk assessment process for soundness;
- Evaluated monitoring processes for budget status revenue and outstanding receivables;
- Assess FIN Monthly report for variances of key performance including project delays and durations, total committed to total budget and soft cost to hard cost percentage; and
- Requested PM fees/hours report to assess PM charge percentage to construction or total project cost compared to UCOP guideline.