City of Palo Alto

Office of the City Auditor

Construction Project Controls Assessment

October 20, 2021

Executive Summary

Purpose of the Assessment

The objectives of Construction Project Controls Assessment was to:

1) Review documented policies, procedures and processes

2) Assess the adequacy of the current controls used to avoid, manage, or mitigate project risks

3) Verify implemented procedures and processes conform to the documented policy and procedures and identify any gaps between documented procedures and implemented procedures

Report Highlights

The OCA found the documented procedures and controls adequate to manage and mitigate risks on construction projects. We did not identify any material controls gaps or deficiencies with the implemented controls; however, we have offered recommendations for improvement to further strengthen the implemented controls. This assessment did not test the controls for effectiveness. A separate construction audit engagement will be performed on the new Public Safety Building where the effectiveness of the documented project controls can be observed for an entire project.

Improvement Recommendation – Project Reporting	Pg. 8	**The OCA recommends developing project reporting that can be used to track project performance and as a risk mitigation tool.**
		The Public Works Department maintains a Semiannual Update on the Status of Capital Improvement Program Projects that reflects including project budgets, actual expenditures per the SAP system, projected completion dates and a brief narrative regarding the current status of each project. In addition, each project manager maintains their own project reporting related to the project budget and progress; however, it does not follow the same format as the Semiannual Update, or as other project managers. This is not considered a controls deficiency because the project managers are actively tracking the status of their projects and the Construction Administration Manual, which defines required procedures and does specify a reporting format. Both the Semiannual Update and project manager's reporting only reflect historical data. There is an opportunity to enhance the reporting to better track project performance and be used as a risk mitigation tool. A uniform reporting format should be considered and include the current estimate to complete the project as well as the original scheduled completion date and the current estimated completion date. Maintaining this type of reporting on a consistent basis can help to identify and mitigate potential budget and schedule overruns earlier in the project. It would also help to provide up-to-date project tracking, and could streamline the process to compile the Semiannual Update.
Improvement Recommendation – Document Control	Pg. 8	**The OCA recommends developing a consistent file management structure.**
		The individual file management systems observed were adequate and allowed for the efficient recall of project documentation; however, a consistent structure could strengthen the City's controls on document management.

Improvement Recommendation – Prevailing Wage Monitoring	Pg. 8	**The Construction Administration Manual should be updated to reflect the controls that are currently implemented to verify prevailing wage requirements.** The current implemented controls are not documented in the Construction Administration Manual.
Improvement Recommendation – Schedule Management	Pg. 9	**The Construction Administration Manual should be updated to provide guidance and standards on schedule monitoring as well as remedial procedures and escalation requirements for non-compliance.** The implemented controls related to schedule monitoring should be documented in the Construction Administration Manual.
Improvement Recommendation – Allowance Usage	Pg. 9	**The Construction Administration Manual should reflect the controls that are currently in place for allowance usage and reconciliation.** There are currently controls in place to manage allowance usage when applicable and these practices should be documented in the Construction Administration Manual.

See the Assessment Results section for additional detail on each of these highlights.

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Introduction

Objective

The purpose of this assessment was to:

1) Review documented policies, procedures and processes
2) Assess the adequacy of the current controls used to avoid, manage, or mitigate project risks
3) Verify implemented procedures and processes conform to the documented policy and procedures and identify any gaps between documented procedures and implemented procedures

Background

The City of Palo Alto Public Works department currently has approximately 150 active projects in various stages of planning and construction. Per the Semiannual Update on the Status of Capital Improvement Program Projects that reflected the status of all active projects through December 2020, the total budget for the active projects is approximately $670 million. The active projects include those identified in the Capital Improvement (Infrastructure) Plan introduced in 2014. This is a $235 million that includes ten major capital projects ranging in value from $2 million to $118 million as well as dozens of other smaller maintenance and improvement projects. Note that other departments who manage capital projects, aside from Public Works (e.g., Utilities) were excluded from this assessment.

Risks related to construction projects include:

- Reputational damage related to projects the public considers unsuccessful
- Budget overruns due to excessive change order activity or abusive pricing practices
- Schedule delays due to poor or improper project management

Weaknesses in project controls can magnify these risks on capital programs of this size.

Scope

We reviewed the processes and procedures documented in the City's Construction Administration Manual dated February 22, 2021. We then conducted interviews with project managers to walk through implemented controls and procedures.

The key controls areas included:
- Prime contractor bid and award control
- Contract administration and control
- Schedule management
- Communication and document control
- Contractor billing review and approval
- Change management
- Allowance and contingency management
- Verification of completed work
- Closeout activities

Compliance Statement

This audit activity was conducted in accordance with the Annual Audit Plan.

The audit activity was not performed in compliance with the generally accepted government auditing standards (GAGAS). The audit activity was not performed in compliance with GAGAS for two primary reasons:

- The individuals conducting the activity did not meet the CPE requirements. As subject matter experts in construction risk, the team members are not required to

obtain government audit CPE. Rather, multiple team members are required to be technically competent construction risk professionals and obtain CPE in construction risk topics.
  - Mitigating factor – City Auditor Kyle O'Rourke and Manager Chiemi Perry both adhere to CPE requirements and
- The City of Palo Alto Office of the City Auditor has not undergone an External Peer Review in the required 3 year cycle as required by Standards.
  - Note – the Office of the City Auditor will undergo a peer review at the conclusion of FY22.

We planned and performed the activity to obtain sufficient, appropriate evidence to provide a reasonable basis for our recommendations based on our objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit the objectives.

Organizational Strengths

During this audit activity, we observed certain strengths of the Public Works Department. Key strengths include:

- The project manager's interviewed have strong backgrounds in construction, engineering and project management.
- The procedures for construction contract bid and award contained in the Construction Administration Manual are both thorough and well defined. The Invitation for Bid (IFB) document contains adequate instructions to the bidders, criteria for selection, insurance, bonding, and prevailing wage requirements. It also includes the City's standard contract documents. The project managers interviewed had thorough understanding of the bid and award process.
- The Construction Administration Manual has a thorough process for reviewing project change orders. The project manager's interviewed follow a consistent and rigorous process to review and validate change order requests from contractors.

Additionally, Baker Tilly noted the documented controls are adequate to manage and mitigate risks on construction projects. While we have recommendations to further strengthen the City's controls, we did not identify any material controls gaps or deficiencies with the identified controls. This objective of this engagement was to assess the adequacy of documented controls. The effectiveness of the controls was not tested.

The Office of the City Auditor greatly appreciates the support of the Public Works Department in conducting this assessment.

Thank you!

Technical Assessment

To accomplish our objective, we reviewed the Public Works Construction Administration Manual to gain and understanding of documented controls related to:

- Prime contractor bid and award control
- Contract administration and control
- Schedule management
- Communication and document control
- Contractor billing review and approval
- Change management
- Allowance and contingency management
- Verification of completed work
- Closeout activities

Key processes were assessed to ensure they are adequately defined and appropriate to mitigate both general construction risks and risks specific to the City of Palo Alto.

We also performed interviews with project managers to verify documented controls have been implemented as well as to document any project controls that are not defined in the Construction Administration Manual. During these interviews we asked individuals to provide examples of documentation. This was done to gain a better understanding of controls environment and processes in place. We interviewed the following individuals/functions:

- Director of Public Works
- Airport Division
- Environmental Services
- Engineering Services

The following matrix summarizes each control area reviewed, the key risks and documented controls to address the risks. The documented controls are adequate to mitigate the key risks in most instances. Testing to confirm the effectiveness of the controls related to the project portfolio was not in the scope of this assessment. A separate construction audit will be performed on the new Public Safety Building where the effectiveness of the documented controls will be tested.

Note: for our controls methodology we follow the Construction Audit and Cost Controls Institute (CAACCI) and the Project Management Institute (PMI).

Prime Contractor Bid and Award	
Key Risks	Summary of Documented Controls
Bid and award process is circumvented	Policy and procedures related to bid are thoroughly documented in Sections A and B of the Construction Administration Manual Purchasing compiles the Invitation for Bid (IFB) and handles the solicitation and summarizes the bids (Review of Purchasing not in this assessment scope)
Collusion and bid rigging	IFBs are advertised on the City's procurement system, PlanetBids, and can be accessed by all registered contractors
Incomplete bid documents leading to misinterpreted award criteria and contract requirements	Projects managers review and compile the technical specifications and drawings Purchasing compiles the Invitation for Bid (IFB) and handles the solicitation and summarizes the bids (Review of Purchasing not in this assessment scope) The IFB document contains adequate instructions to the bidders, criteria for selection, insurance, bonding, and prevailing wage requirements. It also includes the City's standard contract documents
Low bid response	IFBs advertised on PlanetBids and can be accessed by all registered contractors
Response from unqualified contractors	Larger projects involve a pre-qualification process to ensure prospective contractors have the financial strength and qualifications to perform the work Contractors are required to provide valid licensing to perform work to be considered a responsive bidder

Contract Administration	
Key Risks	Summary of Documented Controls
Non-compliance with insurance and bonding requirements	Procedures related to insurance are defined in Section B.1 of the Construction Administration Manual. Purchasing contract manager (in consultation with the awarding department and the City's risk manager as needed) defines the insurance requirements that are applicable to the project The contractor awarded the work needs to provide all certificates of insurance and proof of bonding prior to the contract being executed Project managers monitor the expiration dates of the documents and obtain current documents when needed
Non-compliance with prevailing wage requirements	Section 4.0 of the IFB defines the certified payroll requirements (**No controls are documented in the Construction Administration Manual – see Recommendations for Improvement**) When certified payroll is required to be provided to the City under the contract, it is collected weekly Project managers verify wages are compliant with prevailing wage requirements Project managers perform spot checks with trade and craft workers to verify rates and hours reflected in the certified payroll are accurate
Billing non-compliance	See contractor billing and approval
Failure to deliver the project as specified	See verification of complete work

Schedule Management	
Key Risks	Summary of Documented Controls
Project delays leading to cost escalation and delayed placed in service	Project managers interviewed conduct regular schedule reviews with the contractor at weekly, bi-weekly or monthly meetings depending on the size and magnitude of the project The schedule review involves checking the current physical progress of the project against the project schedule and major milestones, verifying long lead items are being procured in a timely fashion, and reviewing look-ahead schedules The status of current projects are discussed internally at monthly Public Works project manager meetings If a project falls behind schedule, project managers issue written notice to the contractor and require a recovery plan **See Recommendations for Improvement related to documenting the current procedures**

Communication and Document Control	
Key Risks	Summary of Documented Controls
Budget overruns and schedule delays that could have been mitigated with timely and accurate reporting	Each project manager has their own project tracking and progress reporting document. The documents track amounts expended against the contract values and have basic information on progress Public Works compiles a semiannual report reflecting the progress of all CIP Project budgets and progress are discussed internally at monthly Public Works project manager meetings **See Recommendation for Improvement related to project reporting**
Poor document management can result in an inability to: • Support and defend key decisions on the project • Verify installed quantities and physical progress in order to validate contractor payment applications • Validate change orders • Resolve contractor disputes and defend against claims	Section C8 of The Construction Administration Manual defines the principal types of documentation that should be maintained on each project Project Managers' document management systems were observed during interviews. They were organized and allowed them to access needed documents. When asked to provide documents as a follow up to the interviews, the requests were fulfilled within one day **See recommendation for Improvement related to document control**

Contractor Billing Review and Approval	
Key Risks	Summary of Documented Controls
Billing errors	The following controls are applicable to each key risk:
Overpayments to contractors	Section C5 of the Construction Administration Manual defines contractor billing review procedures
Payment for work that has not been completed	Project managers observe physical progress to verify work and/or quantities installed
	Project managers review the Project Inspectors daily inspection reports as additional confirmation of physical progress
	Project managers check the math and confirm any unit rate billings comply with the bid documents
	If errors are noted, billings are sent back to the contractor for revisions

Change Management	
Key Risks	Summary of Documented Controls
Overpriced change orders	Section C9 of the Construction Administration Manual defines change order procedures
	Change orders are checked for arithmetic accuracy
	Where applicable labor rates and materials rates are compared to the bid documents to ensure consistency with bid amounts
	When applicable labor rates are compared to certified payrolls
	If needed, the project management team may do an independent take off to verify the quantities and pricing are reasonable
Change orders for duplicate scope and rework	Section C9 of the Construction Administration Manual defines change order procedures
	Change order scope of is compared to the bid documents to confirm it is a change in scope
	RFIs related to the change order scope are reviewed
Unauthorized change orders	Section C9 of the Construction Administration Manual defines change order procedures
	The Construction Administration Manual contains an authorization matrix detailing approval limits

Allowance and Contingency Management	
Key Risks	Summary of Documented Controls
Unauthorized allowance usage Allowance costs co-mingling	The following controls are applicable to each key risk: Project Managers track project contingency (this is a requirement in Section C9 of the Construction Administration Manual) Allowances are broken out as separate line items in the bid documents All allowance usage requires an Allowance Usage Request. This is documented using a process similar to change order review and approval **See Recommendations for Improvement related to contingency management.**

Verification of Completed Work	
Key Risks	Summary of Documented Controls
Work not installed per specifications Failure to deliver the contracted scope	The following controls are applicable to each key risk: Section C1 and C8.1 of the Construction Administration Manual define procedures related to verification of completed work Each project has a project inspector that reviews progress and verifies compliance with specifications The project inspector completes daily inspection reports Project managers review the daily inspection reports to confirm progress Project managers perform regular site visits to verify the work in place

Closeout Activities	
Failure to deliver the contracted scope	Section C11 of the Construction Administration Manual defines procedures related to closeout activities A punch list is generated by the project manager once the contractor notifies the project manager the work has been completed A Letter of Acceptance is issued to the contractor once all work is certified complete
Subcontractor claims or stop payment notices against the contractor	Section C11 of the Construction Administration Manual defines procedures related to closeout activities The contractor is required to provide an affidavit certifying all subcontractors and material suppliers have been paid along with stop payment notice waivers
Inability to operate manage and maintain the asset	Section C11 of the Construction Administration Manual defines procedures related to closeout activities Article 9.8.2 of the General Conditions document stipulates that O&M Manuals, as built drawings and manufacturer warranties need to be submitted prior to final payment

Assessment Results

Improvement Recommendation – Project Reporting

The OCA recommends developing project reporting that can be used to track project performance and as a risk mitigation tool.

In our initial request to the Public Works Department on March 22, 2021, we asked for a schedule of construction projects in progress along with projects completed in the past 12 months, including a description of the project, the initial project budget and the current or final budget. The Public Works Department provided the most recent Semiannual Update on the Status of Capital Improvement Program Projects that reflected the status of all active projects through December 2020. This report reflected each project's budget, actual expenditures per the SAP system, projected completion dates and a brief narrative regarding the current status of each project. In addition we reviewed the individual project reporting from eight projects with approximate expenditures of $48 million (see Appendix A). We noted each project manager maintains their own project reporting related to the project budget and progress; however, it does not follow the same format as the Semiannual Update, or as other project managers. This is not considered a controls deficiency because the project managers are actively tracking the status of their projects. However, the reporting produced only reflects historical data and there is an opportunity to enhance the reporting to better track project performance.

We recommend enhancing the current report format to include the current estimate to complete the project as well as the original scheduled completion date and the current estimated completion date. Maintaining this type of reporting on a consistent basis can help to identify and mitigate potential budget and schedule overruns earlier in the project. It would also help to provide up-to-date project tracking, and could streamline the process to compile the Semiannual Update.

Additionally, this type of project reporting can be used to assess the performance of specific contractors or project types. This would allow the Public Works Department to identify trends such project as projects or contractors that consistently incur a high magnitude of change orders or consistently fall behind schedule.

This type of reporting can be maintained manually using readily available tools such as Microsoft Excel; however, the City would benefit by exploring project management software options that could generate this reporting more efficiently. Use of a project management software could also help with consistent file management as well (see Document Control recommendation).

Improvement Recommendation – Document Control

The OCA recommends developing a consistent file management structure.

Each project manager has their own file management structure. We observed the different file structures during our interviews by asking project managers to share their screens and navigate through their file systems with us. The individual file management systems were adequate and allowed for the efficient recall of project documentation; however, a consistent structure

could strengthen Public Works' controls on document management. As noted in the Project Reporting recommendation, the City could consider a project management software option that would also act as a project file management system.

Improvement Recommendation – Prevailing Wage Monitoring

The Construction Administration Manual should be updated to reflect the controls that are currently implemented to verify prevailing wage requirements.

The contractor's requirements for prevailing wage and certified payroll submission are defined in Section 4.0 of the Invitation For Bids (IFB) document. The procedures performed related to collection and review of certified payrolls by the project managers, which is required if the project is grant funded, are not reflected in the Construction Administration Manual. In circumstances where a project is grant funded, the City policy requires that the project manager verifies compliance with prevailing wage requirements. This process should be reflected in the Construction Administration Manual. Additionally the Construction Administration Manual should detail the City's remedies for non-compliance.

Improvement Recommendation – Schedule Management

The Construction Administration Manual should be updated to provide guidance and standards on schedule monitoring as well as remedial procedures and escalation requirements for non-compliance.

The project managers interviewed all conduct regular schedule reviews with the contractor at weekly, bi-weekly or monthly meetings depending on the size and magnitude of the project. Typically the schedule review involves checking the current physical progress of the project against the project schedule and major milestones, verifying long lead items are being procured in a timely fashion, and reviewing schedule look-ahead schedules. The remedies currently used by the project management team if a project falls behind schedule is to issue written notice to the contractor and require a recovery plan. In addition, progress on current projects is discussed internally at Public Works meetings that occur each month. These practices should be documented in the Construction Administration Manual.

Improvement Recommendation – Allowance Usage

The Construction Administration Manual should reflect the controls that are currently in place for allowance usage and reconciliation.

Projects may contain budgeted scopes of work the City is considering, but the City has not yet finalized the design. Such scopes are broken out in the bid documents as an allowance line item. The City can then elect to buy these items at a later date once the design is completed. The project manager's interviewed stated charging against the allowance requires an allowance usage request. There is a specific document for this request and the review process follows the same procedures as executing a change order. These practices should be documented in the Construction Administration Manual.

Appendices

Appendix A: Project Reporting

The OCA reviewed the project reporting for the following projects:

Project	Project ID	Area	Total Project Budget	Actual Expenditures
Highway 101 Pedestrian/Bicycle Overpass Project	PE-11011	Council Infrastructure Plan	$ 22,889,453	$ 14,142,494
High and Bryant Street Garages Waterproofing and Repairs	PE-18002	Building and Facilities	$ 443,376	$ 257,431
Cubberley Roof Replacements	CB-16002	Building and Facilities	$ 860,400	$ 569,606
Rinconada Park Improvements	PE-08001	Parks and open spaces	$ 8,742,375	$ 2,350,551
Street Maintenance	PE-86070	Street and Sidewalks	$ 11,055,995	$ 5,226,631
Airport Apron Reconstruction	AP-16000	Airport Projects	$ 44,573,110	$ 23,736,439
Primary Sedimentation Tank Rehabilitation	WQ-14003	Wastewater Treatment	$ 20,681,849	$ 738,257
Plant Repair, Retrofit and Equipment Replacement	WQ-19002	Wastewater Treatment	$ 7,332,834	$ 760,983
Total			**$ 116,579,392**	**$ 47,782,392**

Appendix B: Management Response

Recommendation	Responsible Department(s)	Agree, Partially Agree, or Do Not Agree and Target Date and Corrective Action Plan
The OCA recommends developing project reporting that can be used to track project performance and as a risk mitigation tool, including enhancing the current report format to include the current estimate to complete the project as well as the original scheduled completion date and the current estimated completion date. Maintaining this type of reporting on a consistent basis can help to identify and mitigate potential budget and schedule overruns earlier in the project.	Public Works	Public Works Department appreciates the audit observations which affirm strong project management and controls that manage and mitigate construction risks. The audit recommendations generally seek to enhance or further document existing practices, and the department is confident that they can be addressed with a modest investment of staff resources. Concurrence: Partially Agree Target Date: 7/1/2022 Action Plan: 1. Review current project tracking practices and formats in use: by 2/1/2022 2. Standardize updated project tracking formats, including some potential differences between approaches due to factors such as project size and recurring vs. one-time project: by 4/1/2022 3. Update Construction Administration Manual and complete staff training and implementation of updated practices: by 7/1/2022
The OCA recommends developing a consistent file management structure. Each project manager has their own file management structure. A consistent structure could strengthen Public Works' controls on document management. As noted in the Project Reporting recommendation, the City could consider a project management software option that would also act as a project file management system.	Public Works	Concurrence: Partially Agree Target Date: March 1, 2022 Action Plan: Public Works has a standard file management structure for capital project documentation. The department will confirm and make any potential updates to the existing file management structure, document the file management structure in the Construction Administration Manual, and complete staff training and implementation of the updated practice. Note: Additional supplemental filing systems will also be maintained as required by grants (e.g. Caltrans, FAA).
The Construction Administration Manual should be updated to reflect the controls that are currently implemented to verify prevailing wage requirements. The contractor's requirements for prevailing wage and certified payroll submission are defined in Section 4.0 of the Initiation For Bid (IFB) document. The procedures performed related to collection	Public Works	Concurrence: Agree Target Date: March 1, 2022

Recommendation	Responsible Department(s)	Agree, Partially Agree, or Do Not Agree and Target Date and Corrective Action Plan
and review of certified payrolls by the project managers are not reflected in the Construction Administration Manual. This process should be reflected in the Construction Administration Manual. Additionally the Construction Administration Manual should detail the City's remedies for non-compliance.		Action Plan: Public Works is in the process of updating the Construction Administration Manual and will include this information in the current update.
The Construction Administration Manual should be updated to provide guidance and standards on schedule monitoring as well as remedial procedures and escalation requirements for non-compliance. The remedies currently used by the project management team if a project falls behind schedule is to issue written notice to the contractor and require a recovery plan. In addition, progress on current projects is discussed internally at Public Works meetings that occur each month. These practices should be documented in the Construction Administration Manual.	Public Works	Concurrence: Agree Target Date: March 1, 2022 Action Plan: Public Works is in the process of updating the Construction Administration Manual and will include this information in the current update.
The Construction Administration Manual should reflect the controls that are currently in place for allowance usage and reconciliation. Projects may contain budgeted scopes of work the City is considering but has not yet finalized the design. These are broken out in the bid documents as an allowance line item. The City can then elect to buy these items at a later date once the design is completed. The project manager's interviewed stated charging against the allowance requires an allowance usage request. There is a specific document for this request and the review process follows the same procedures as executing a change order. These practices should be documented in the Construction Administration Manual.	Public Works	Concurrence: Agree Target Date: March 1, 2022 Action Plan: Public Works is in the process of updating the Construction Administration Manual and will include this information in the current update.