

Construction Contract Change Orders Audit October 2018

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City Auditor's Office

October 31, 2018

Honorable Mayor and Members of the City Council:

The City Auditor's Office has completed the Construction Contract Change Orders Audit. The purpose of the audit was to review construction contract change orders to ensure compliance with established policies, procedures, rules or other applicable guidelines.

Management's response to our audit findings and recommendations, as well as target implementation dates and responsibility, is included following the report.

We would like to thank staff from the Public Works and Transportation and Asset Management departments for their full cooperation and assistance during the audit.

Lori Brooks Jaquess

Lori Brooks Jaquess, CPA, CIA, CGAP, CRMA
City Auditor

Attachment

c: Trey Yelverton, City Manager
Jim Parajon, Deputy City Manager
Gilbert Perales, Deputy City Manager
Jennifer Wichmann, Assistant City Manager
Mindy Carmichael, Director of Public Works and Transportation
Nora Coronado, Senior Asset Officer, Asset Management

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Executive Summary

The City Auditor's Office has completed the Construction Contract Change Orders Audit. The performance audit was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. The audit objective was to review construction contract change orders to ensure compliance with established policies, procedures, rules or other applicable guidelines. Subsequent to the completion of the fieldwork for this audit, the Support Services division of Public Works was moved to the newly established Asset Management Department.

The City Auditor's Office noted strengths related to the following areas:

- Public Works has implemented a web-based software program, e-Builder, to assist in managing projects
- The Streets and Stormwater divisions review change orders to assure that pricing matches the original contract
- Change orders are subjected to a multi-level review process for reasonableness and pricing

We noted potential opportunities for improvement in the following areas:

- Reviewing and revising change order management procedures
- Expanding the use of e-Builder to eliminate duplicative processes
- Documenting the cause of a change order
- Documenting all change orders in e-Builder
- Implementing controls in e-Builder to assure segregation of duties
- Terminating e-Builder access in a timely manner
- Obtaining external construction audits

Details of audit findings, conclusions and recommendations are included in the following report.

Audit Scope and Methodology

The audit was conducted in accordance with generally accepted government auditing standards. Internal Audit reviewed a sample of construction projects that were in process during the period of October 1, 2015 to February 28, 2018. The focus of this audit was limited to a review of the processes and procedures related to managing change orders. The following methodology was used in completing the audit.

- Obtained an understanding of the change order process
- Interviewed employees responsible for processing change order proposals
- Reviewed change order proposals and backup documentation
- Reviewed original construction bid documents and the associated contract

Background

At the time of the audit, the majority of city construction projects were managed within the Public Works and Transportation Department. The Department was made up of four divisions, with each division being comprised of various units. The divisions were: Engineering and Construction, Support Services, Stormwater, and the Operations Division. The division of Public Works responsible for managing a particular construction project was dependent upon the type of project. For example, the construction and/or renovation of city buildings was managed by the Construction Management unit of the Support Services division, street projects were managed by the Construction Services unit of the Engineering and Construction division, and stormwater projects were managed by the Stormwater Engineering Operations and Education unit of the Stormwater division. Subsequent to the completion of the fieldwork for this audit, the Support Services division of Public Works was moved to the newly established Asset Management Department.

Occasionally, a contract will need to be modified during construction because the conditions in the field are different than originally thought, something was omitted from the original contract, or there are owner directed changes. These owner directed changes could be because of design changes or perhaps due to a change in the scope of the project. During the period under review, there were 70 projects with an original budgeted value of an estimated \$227 million. For those projects, there were 272 change orders that resulted in additional costs of approximately \$6.8 million (3%).

Audit Results

The focus of this audit was to review construction change orders to ensure that established policies and procedures were being followed. Internal Audit reviewed a sample of change orders to determine the reason for the change order, if the costs were in accordance with the contract (if applicable), and if the change order documents were approved by the appropriate parties. The approval process for change orders varies depending on the value of the change order. There are three levels of change orders: (1) contingency change orders, (2) change orders that add less than \$25,000 to the existing contract, and (3) change orders that add more than \$25,000 to the existing contract.

Contingency Change Orders

Contingency change orders are budget neutral. With each project, a percentage of the total budget is set aside for a contingency fund. This contingency amount is generally five percent of the total contract value that was approved by City Council. Change orders paid from the contingency fund go through a shorter approval process. The change order is initiated by the project manager and then gets routed to their supervisor for final approval.

Less than \$25,000

Change orders that will add less than \$25,000 to the overall value of the contract must get final approval by the Director of Public Works and Transportation. For these change orders, there is a lengthier approval process. The change order is initiated by the project manager, then it is routed to their supervisor; if it is approved at that level, it then goes to the Assistant Director for approval, then to the Department Director.

Greater than \$25,000

Change orders that add more than \$25,000 to the overall value of the contract must get final approval by the City Council. These change orders follow a similar approval process as the previous category. However, instead of final approval being in the hands of the Department Director, state law dictates that change orders in excess of \$25,000 be approved by City Council.

Public Works uses e-Builder, a web-based tracking and routing system, to manage projects. The e-Builder system is designed to allow entities to track the budget, route documents for approval, and store documents. Public Works processes require that all change orders be entered into e-Builder and routed for approval to the appropriate parties, based on the level of the change order. At the time of entry into e-Builder, the cause of the change order is documented in the system and all relevant documentation is scanned into the system. For the sampled projects, Internal Audit reviewed the project in e-Builder, along with any associated documentation.

Based on the review of projects, Internal Audit determined that the various divisions of Public Works do not use e-Builder in the same manner. For example, Construction Management does not enter

contingency change orders into e-Builder. It was also determined that change orders are not actually approved in e-Builder. Change orders are approved on paper documents, entered into e-Builder at a later date and then routed for approval in e-Builder. Therefore, the date of approval documented in e-Builder does not coincide with the actual date of approval. After reviewing the paper change order documents, it was determined that all change orders were approved by the appropriate parties. It was also noted that all relevant documentation is not entered into e-Builder. Some documentation is stored on the department's shared drive.

For the sampled projects that were managed by Streets and Stormwater, Internal Audit compared the costs of items that were included on change orders against the item pricing in the original contract. All items that were in the original contracts were priced at the same amount in the change order. This review could not be performed for projects managed by Construction Management because lump sum pricing is used for the majority of their projects and itemized pricing is not included in the original contract.

Internal Audit also discussed the change order review process with the individuals that review and approve change orders. It was determined that change orders are reviewed for reasonableness and pricing.

Detailed Audit Findings

Policies and Procedures

The departmental policies and procedures for change orders have not been reviewed or updated in a number of years and can be strengthened. Currently, the documents do not outline the steps that a change order should go through for approval, what documents should be attached, when a change order qualifies for the use of contingency funds, or when the change order must go through a more thorough review process and go to City Council for approval. The documents also do not identify who or which positions are responsible to review the change orders. Leading business practices dictate that departments have strong policies and procedures to ensure consistency and business continuity. Policies and procedures that do not describe processes accurately can cause new employees to incorrectly process work, which can cause duplication of work and the department to function inefficiently.

Recommendation:

- 1. The City Auditor's Office recommends that the Public Works and Transportation and Asset Management Departments review and update policies and procedures related to change orders to assure that all aspects of the change order process are included.***

Use of e-Builder

All divisions responsible for managing construction projects within Public Works are not using the e-Builder software as it was designed. Instead of routing change order documents electronically for

approval within e-Builder, reviews are completed outside of e-Builder and documented on paper documents, which are later uploaded into e-Builder. After the documents are uploaded into e-Builder, the change order goes through an electronic review process after the fact. This process is not always conducted in a timely manner.

Additionally, it was noted that not all documents related to a project were uploaded into e-Builder. These documents were stored on the department's shared drive. It appears that all processes were not revised with the implementation of e-Builder. This results in inefficiencies in project management due to the duplicative process. Also, e-Builder cannot adequately serve as the complete record of a project, due to the incomplete documentation. Leading business practices dictate that, to the extent possible, when new systems are implemented, all processes should be reviewed and streamlined to take advantage of efficiencies gained by transitioning manual processes to computerized processes.

Recommendation:

- 2. The City Auditor's Office recommends that the Public Works and Transportation and Asset Management Departments eliminate the manual process of reviewing change orders and use e-Builder to facilitate an electronic review and approval of change orders. Additionally, all project documents should be stored within e-Builder.***

Cause of Change Orders

The cause of the change order is not always identified appropriately in e-Builder. Individuals creating change orders in e-Builder are required to select the cause of the change order. Some of the available causes include:

- Owner Directive
- Design Change
- Field Conditions
- Contingency

These options are not always descriptive enough to determine the actual cause of a change order. The contingency option is not actually a cause, but a funding source.

Recommendation:

- 3. The City Auditor's Office recommends that the Public Works and Transportation and Asset Management Departments change the options listed in e-Builder from which the cause for the change order is chosen. The options should only include actual reasons for the change, not what funding source is being used to pay for the change order.***

Contingency Change Orders

Construction Management, unlike the two other units that manage construction projects, does not enter change orders that are paid through the Owner's contingency into e-Builder. All change orders should be entered into e-Builder, so they can be properly tracked. By failing to enter the change orders being paid via the contingency funds, a full accounting of the funds used on the project is not shown.

Recommendation:

- 4. The City Auditor's Office recommends that the Asset Management Department enter all change orders into e-Builder, regardless of the source of funds being used to pay them.***

Single Reviewer

It was noted that for some of the change orders reviewed, the same employee had signed off on multiple steps, including the last review. This occurred because an employee was promoted and the roles within e-Builder were not revised. Leading business practices require segregation of duties; that is, individuals creating a change order should not have the ability to approve the change order. Without adequate segregation of duties, an individual could create and approve a fictitious change order. This did not create a problem with the change orders reviewed, due to the fact that the actual review process does not occur in e-Builder. However, when the process is revised, this weakness must be addressed.

Recommendation:

- 5. The City Auditor's Office recommends that the Public Works and Transportation and Asset Management Departments update controls in e-Builder to assure that an employee cannot approve change orders that they created.***

Termination of e-Builder Access

According to the e-Builder Administrator, Public Works and Transportation does not notify the IT department in a timely manner when an employee either leaves the city or no longer needs access to e-Builder. This could result in an individual who is no longer with the city still having access to e-Builder since it is a web-based software, which could possibly cause harm to the city. To address this issue, the Administrator performs a quarterly review to assure that those with access to e-Builder are still City employees. Leading business practices dictate that access be revoked in a timely manner when an employee no longer needs access or upon termination.

Recommendation:

6. *The City Auditor's Office recommends that the Public Works and Transportation and Asset Management Departments notify the IT Department when an e-Builder user either no longer needs access to e-Builder and/or ceases employment with the city.*

Construction Audits

The City does not obtain external audits of construction projects. Best practices dictate that for larger projects, construction audits conducted by a professional construction auditor be obtained. These audits would assure the City that the contractor met the requirements outlined in the contract and that all costs were appropriate and billed in accordance with the contract. Generally, the costs for these types of audits are covered by recoveries from the contractor.

Recommendation:

7. *The City Auditor's Office recommends that the Public Works and Transportation and Asset Management Departments consider obtaining professional construction audits for larger projects.*

CITY ARLINGTON
Construction Contract Change Orders Audit
AUDIT RECOMMENDATIONS AND RESPONSE

AUDIT RECOMMENDATION	CONCUR/DO NOT CONCUR	MANAGEMENT RESPONSE	RESPONSIBLE PARTY	DUE DATE
<p><i>1. The City Auditor’s Office recommends that the Public Works and Transportation and Asset Management Departments review and update policies and procedures related to change orders to assure that all aspects of the change order process are included.</i></p>	Concur	Public Works will update its policies and procedures for change orders to assure that all aspects of the change order process are included.	Keith Brooks/Amy Cannon	11/16/2018
	Concur	Asset Management’s Building Design and Construction team is currently working to update its policies and procedures and will assure that all aspects of the change order process are included.	Alf Bumgardner/Stefanie Spivey	January 2019
<p><i>2. The City Auditor’s Office recommends that the Public Works and Transportation and Asset Management Departments eliminate the manual process of reviewing change orders and use e-Builder to facilitate an electronic review and approval of change orders. Additionally, all project documents should be stored within e-Builder.</i></p>	Concur	Public Works already is using e-Builder to facilitate an electronic review and approval of change orders.	N/A	N/A
	Concur	Asset Management will use e-Builder to facilitate electronic review and approval of change orders, and make sure back-up documents are saved in e-Builder. (This will involve working with	Alf Bumgardner	January 2019

AUDIT RECOMMENDATION	CONCUR/DO NOT CONCUR	MANAGEMENT RESPONSE	RESPONSIBLE PARTY	DUE DATE
		the City Attorney's Office which has required the team to obtain original signatures on all contract documents.)		
3. The City Auditor's Office recommends that the Public Works and Transportation and Asset Management Departments change the options listed in e-Builder from which the cause for the change order is chosen. The options should only include actual reasons for the change, not what funding source is being used to pay for the change order.	Concur	Public Works will work with IT to remove "Contingency" from the drop-down list.	Keith Brooks/Amy Cannon	3/31/2019
	Concur	Asset Management agrees with Public Works' response.	N/A	N/A
4. The City Auditor's Office recommends that Asset Management Department enter all change orders into e-Builder, regardless of the source of funds being used to pay them.	Concur	Asset Management will enter all change orders into e-Builder.	Alf Bumgardner	Now and moving forward

AUDIT RECOMMENDATION	CONCUR/DO NOT CONCUR	MANAGEMENT RESPONSE	RESPONSIBLE PARTY	DUE DATE
<p><i>5. The City Auditor's Office recommends that the Public Works and Transportation and Asset Management Departments update controls in e-Builder to assure that an employee cannot approve change orders that they created.</i></p>	<p>Concur</p>	<p>Public Works will update roles and controls in e-Builder and add a statement in its policy and procedures prohibiting this action.</p>	<p>Keith Brooks/Amy Cannon</p>	<p>11/16/2018</p>
	<p>Concur</p>	<p>Asset Management agrees with Public Works' response and will do the same.</p>	<p>N/A</p>	<p>January 2019</p>
<p><i>6. The City Auditor's Office recommends that the Public Works and Transportation and Asset Management Departments notify the IT Department when an e-Builder user either no longer needs access to e-Builder and/or ceases employment with the city.</i></p>	<p>Concur</p>	<p>When an employee leaves the City, a list is distributed by HR to multiple recipients; including the e-Builder administrator who then removes access for the users that have left the City's employment. Also, twice a year the e-Builder Administrator removes users who haven't logged into the system within that six-month period. PWT will update its policies and procedures to notify IT when users change positions within the City.</p>	<p>Keith Brooks/Amy Cannon</p>	<p>11/16/2018</p>

AUDIT RECOMMENDATION	CONCUR/DO NOT CONCUR	MANAGEMENT RESPONSE	RESPONSIBLE PARTY	DUE DATE
	Concur	Asset Management agrees with Public Works' response and also will do the same.	N/A	January 2019
<i>7. The City Auditor's Office recommends that the Public Works and Transportation and Asset Management Departments consider obtaining professional construction audits for larger projects.</i>	Do Not Concur	Public Works constructs horizontal projects consisting of paving, drainage, water and sewer line placement. The work is inspected by PW for workmanship and measured for payment at the time it is placed. Since utilities are placed underground and covered with pavement, it would be unreasonable to audit this installation after the fact.	N/A	N/A
	Concur	Asset Management will consider this moving forward.	Alf Bumgardner	N/A