



Audit of Construction Change Orders

Project #21-07

Prepared by
Office of the Inspector General

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SOUTH FLORIDA WATER MANAGEMENT DISTRICT

November 10, 2021

Governing Board Members

Re: Audit of Construction Change
Orders
Project No. 21-07

This audit was performed pursuant to the Inspector General's authority set forth in Chapter 20.055, F.S. Our audit assessed whether change orders were negotiated in accordance with contract terms and conditions; verified reporting of cumulative change order amounts and compared such to industry standards; and reviewed controls in the eBuilder system to gauge system integrity, as the information that was used in the audit relied heavily on this system. Alyassia Taylor and I prepared this report.

Sincerely,

A handwritten signature in blue ink, reading "J. Timothy Beirnes".

J. Timothy Beirnes, CPA
Inspector General

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BACKGROUND

A contract change order is created when a project requires an adjustment for time, scope of work, or cost of the project. Without monitoring, change orders can significantly increase a project's budget or timeline. At the request of the Governing Board, a report was created that expresses construction change orders as a percentage of original contract amounts. The Engineering and Construction Bureau of the Ecosystem Restoration and Capital Projects Division provided a reporting of the progress of construction contracts as well as the amount and percentage of change orders for projects between 2015 and 2020 to the Division Director in November 2020. This report showed an average change order amount of 4% for District contracts. Although the types of construction projects at the District are not typical of industry construction, the industry standard for change order percentages is approximately 8-14%.

Each contract is led by a project manager, who is responsible for negotiating changes with contractors and moving necessary change orders through the approval process. Currently, all the District's change orders, along with approvals and supporting documentation, are maintained in a construction project management information system, eBuilder, which the District began using in 2018. eBuilder is a cloud-based Software as a Service (SaaS) product that tracks the project's performance through the project's entire life cycle. Users access eBuilder by logging into the software online. Each user is provided a dashboard detailing their projects, outstanding tasks, and communications with other project members. Construction project documentation was migrated to eBuilder in 2018. The entire life of the project can be monitored through the software, including:

- Site visits,
- Quotes,
- Negotiations of change order amounts (documented through correspondence)
- Change order documents
- Resource management,
- Invoices, and
- Project closeout.

OBJECTIVES, SCOPE, AND METHODOLOGY

Our audit assessed whether change orders were negotiated in accordance with contract terms and conditions. Audit objectives also included verifying cumulative change order amounts as a percentage of original contract amounts and compared such to industry standards. Our work also included a review of the controls in the eBuilder system to gauge system integrity, as the information that was used in the audit relied heavily on this system. The audit scope covers the change order report which encompasses contracts between 2015 and 2020.

To accomplish our objectives, our audit methodology entailed performing the following procedures:

- Interviewing pertinent District staff;
- Testing the eBuilder system to ascertain system integrity;
- Reviewing Change Order policies and procedures;
- Reviewing controls over the Change Order process; and
- Comparing change order approvals and supporting documentation to contracts.
- Other procedures as deemed necessary

We conducted this performance audit 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 objectives.

AUDIT RESULTS

Executive Summary

Overall, the controls within the eBuilder system are working effectively to ensure that documentation kept in the system is complete and can be used for accurate reporting. The controls were tested so that we could determine system integrity, as most of the documentation for change orders is being maintained in eBuilder. The Change Order report provided to the Government Board is based largely on information in the eBuilder system. Therefore, having a system which can be relied upon is integral to the reporting function. We noted that older projects were migrated into eBuilder and there were some documents which we were unable to find for these projects. However, all documentation for newer projects was located in the system, and authorizations and other controls were tested and determined to be adequate.

The change order report provided to us contained 99 contracts, effective between 2015 and 2020. We reviewed the documentation for a sample of 34 of these contracts, totaling \$255,655,114. Our review comprised of 60 change orders, totaling \$3,936,205. Documentation included, but was not limited to change order authorizations, correspondence, quotes, and contract terms. We concluded that the 4.0% change order percentage that was presented to the Board were accurately calculated; however, the report did not include the total calculations of all projects. Certain projects were considered outliers, and thus were excluded from the reported average percentage, which had higher percentage amounts. Had these projects been included in the reported amount, the total average change order percentage would have been approximately 6.3%, which is still well below the industry average of 8-14%.

eBuilder System Integrity is Adequate

A test of the data integrity for the system found that the controls over the system are in place and working effectively. The system works as a database of information for each construction contract and includes a task function which reminds each person on the team of outstanding tasks on the project. We performed entry and edit checks on contracts in a test environment of the system. We noted that although the dates can be backdated when uploading documents into the database, the contract documents are signed and dated, and the dates of the documents are used as the effective dates. There are audit trails in the system to tracking transactions by user type. Therefore, any changes or deletions of documents can be verified and tracked if necessary. The change orders are attached by contract number and name and signatures are kept on file.

We reconciled a sample of change orders in the sample with SAP encumbrances. There were no discrepancies noted. We concluded that the change orders in eBuilder reconciled with encumbrances in SAP and can be considered complete documentation.

Change Order Documents are Properly Maintained in eBuilder

The change order documentation housed in eBuilder appears to be complete and accurate. During testing of change order documentation, we found that employees were unable to find all the documentation to support change orders that were not uploaded into eBuilder. Contracts that were in eBuilder contained supporting documentation including negotiation correspondence, written quotes, and signed and executed change orders.

Change order documentation that was held outside of eBuilder (i.e., for older contracts) was not always available and complete when provided. Thus, we were unable to determine whether negotiations for these change orders were aligned with contract terms. However, now that documentation is maintained in eBuilder, finding supporting documentation for contracts is more efficient as everything is centrally located. Thus, implementing the eBuilder system appears to have solved the record retention issue.

Although we were not able to find complete documentation for all the contracts in the sample tested, the more recent contracts in the sample had complete documentation and supported the information as presented in the report. Moreover, we were able to determine that these change orders were negotiated within contract terms and conditions.

These contracts are generally Fixed Price contracts. Change orders on these contracts were generally fixed price and negotiated in accordance with contract terms and conditions. We noted that the negotiations for contract changes were documented for each of the projects in our contract sample. The negotiations for contract changes were completed in accordance with contract terms and were each authorized by the appropriate project manager and Division Director.

Change Order Percentage is Calculated Accurately

The reported change order percentage for the District is fairly reported. The percentage reported was 4%, which was below the 8-14% industry average for change orders for the construction industry; however, because there is no industry that is quite similar to the projects that the District undertakes for comparison, it is difficult to analyze whether variances in the change order amounts (high or low) are normal.

The report presented to the Division Director provided an average change order percentage amount of 4%. Our analysis of the report concluded that the change order percentage that was reported was properly calculated; however, the percentage of 4% excluded projects which occurred that had high amounts of change orders. During the scope of the report, there were several projects which had higher change order amounts. These change orders were excluded from the report. According to the staff who created the report, these projects had exceptional conditions and were deemed outliers for the reporting, for example:

- In one project, an equipment deduction was planned prior to contract award and actually saved the District money (sales tax on equipment purchase) that the contractor would have otherwise billed us;
- One contract had a large change order which addressed an unused contract allowance (which are used very infrequently);
- There were resolutions needed on one contract because it was a time-and-materials contract and additional funding was needed for unknown damages that occurred during a terminated contract;
- For one project the scope effectively doubled (same work but twice as long) thereby skewing the change percentage; and
- A structure started failing during dewatering, resulting in significant new scope added to the project, impacting the change percentage.

If the excluded projects with higher change order percentages were to be included in the calculation of the change order percentage, the actual percentage would be 6.3%, which is still well below the industry average of 8 to 14%. In our opinion, both percentages provide meaningful information for management and the Governing Board. To assure full disclosure, we recommend that future report to management or the Governing Board include both change order percentages with and without the outlier items, with explanations of any outlier change orders.

Recommendation

- 1. Recommend that future report to management and/or the Governing Board include both change order percentages with and without the outlier items, with explanations of any outlier change orders.**

Management Response

Agree – Future reports to management and Governing Board will include both change order percentage values, with an explanation included to set forth the exceptional/outlying reasons behind the larger of those two values.