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**Pavement Reconstruction,  
Water and Sanitary Sewer  
Replacement Construction  
Audit**

**Bideker Avenue, Bright Street and Burton  
Avenue**

January 30, 2015



**City of Fort Worth  
Department of Internal Audit**

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Fort Worth, Texas 76102

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**The Pavement Reconstruction, Water and Sanitary Sewer Replacement Construction Audit for Bideker Avenue, Bright Street and Burton Avenue was conducted as part of the Department of Internal Audit's Fiscal Year 2014 Annual Audit Plan.**

### **Audit Objective**

The objective of this audit was to determine whether the construction project was completed in accordance with the contract terms.

### **Audit Scope**

Our audit covered the period from July 12, 2011 (contract inception date) through April 30, 2013 (contract completion date)

### **Opportunity for Improvement**

Reconciliation of project cost information within the general ledger and the construction project management system

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## **Executive Summary**

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The Department of Internal Audit has conducted an audit of the City of Fort Worth's construction contract with Conatser Construction TX, LP for pavement reconstruction, and water and sanitary sewer replacement on Bideker Avenue, Bright Street and Burton Avenue. Our audit covered the period July 12, 2011, (contract inception date) through April 30, 2013 (contract completion date).

We concluded that the project was finished 67 days sooner than initially projected and 112 days sooner than the revised date. The revised date included an additional 45 calendar days authorized via change order.

The City of Fort Worth (CFW) spent \$2,158,559 on the referenced project - \$66,094 more than the initial cost projection of \$2,092,465, but \$86,009 less than the revised contract amount (\$2,244,568).

We identified a \$152,757 variance between project cost information recorded within the City's general ledger and that recorded within the City's construction project management system (CPMS). Payments totaling \$2,158,559 were recorded in the general ledger, while only \$2,005,802 was recorded in CPMS.

This finding is discussed in further detail within the [Detailed Audit Finding](#) section of this report.

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## Background

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One of the neighborhood street improvement projects included in the 2007 Critical Capital Program was pavement reconstruction and water and sewer replacements for a three-street project consisting of Bideker Avenue, Bright Street and Burton Avenue. The pavement reconstruction work was managed by the City of Fort Worth's (CFW) Transportation and Public Works Department (TPW), and the water and sewer replacements were managed by the CFW Water Department (Water). The project was approved by the Mayor and City Council on July 12, 2011.

A contract was executed with Conatser Construction TX, LP in the amount of \$2,092,465. Two change orders totaling \$152,103 were approved in September 2011 and February 2013 for additional paving work, sewer pipe modification and additional water piping and paving, bringing the total authorized contract amount to \$2,244,568. The total completion cost of the Bideker Avenue, Bright Street and Burton Avenue construction project was \$2,158,559. This resulted in a project cost under-run of \$86,009.

- Construction on this project began on August 5, 2011.
- The CFW's Acceptance Letter (which documents the City's acceptance of the project completion and final inspection date) was signed by the Project Manager on July 26, 2012.
- The Notices of Project Completion ("Green Sheets") were approved on April 30, 2013. The Notice of Completion confirms that the final project cost agrees with the total amount paid to the contractor. Notices of Completion are signed by the Assistant Director or Director of the Water and TPW Departments, and by the Assistant City Manager to whom TPW and Water report.
- The reason management processed a change order after the City's acceptance of the project completion was accepted (and thus the reason for the significant difference in dates between the two aforementioned documents) was a disagreement in the propriety of certain unanticipated costs for restoring water service to an area not included in the original plans. This concern was settled in February 2013 with the issuance of a \$27,923.00 change order.

CPMS is used to manage construction projects. MARS, the City's general ledger, is the official accounting record of the City. These two systems interface with each other on a nightly basis to input payment information into CPMS.

Another software product used for managing construction projects is Buzzsaw. Buzzsaw is a project document management tool used by TPW and Water to manage certain aspects of the construction process such as preparing bid specifications and writing contracts.



## Objective

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The objective of this audit was to determine whether the construction project was completed in accordance with the contract terms.

## Scope

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Our audit scope covered the period from July 12, 2011 (contract inception date) through April 30, 2013 (project completion date).

## Methodology

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To achieve the audit objectives, the Department of Internal Audit performed the following:

- interviewed key personnel within TPW and Water regarding authorization and supervisory construction management procedures;
- reviewed contract between the City of Fort Worth and Conatser Construction TX, LP.;
- reviewed change orders and the impact of such change orders on the initial contract;
- reconciled authorized pay items to pay items billed upon project completion;
- performed visual inspections;
- examined engineering drawings and inspector documentation to verify that dimensions documented on engineering drawings were in agreement with dimensions and quantities specified in the contract;
- examined invoices supporting materials purchased by the contractor;
- compared wage rates the contractor paid to construction employees to wage rates specified in the contract;
- obtained proof of contract completion and project acceptance;
- established the contractor was fully paid by CFW; and,
- compared bonding and insurance documentation with contract requirements.

We conducted this audit in accordance with generally accepted government auditing standards, except for peer review. 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

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The Department of Internal Audit concluded that the construction project was both started and completed timely, and with a final cost less than that allowed by the contract.

	<b>Approved</b>	<b>Actual</b>
Start Date	08/05/2011	08/05/2011
Completion Date	11/15/2012	07/26/2012
Project Duration		
Initial	424 days	
Change Order #1	<u>45 days</u>	
Total Duration	<b>469 days</b>	<b>357 days</b>
Project Cost:		
Initial Projection	\$ 2,092,465.45	
Change Order #1	124,180.00	
Change Order #2	27,923.20	
Final Total Cost	<b>\$ 2,244,568.65</b>	<b>\$2,158,559.17</b>

Project costs, per our review of final pay items, agreed with project costs documented in the City's general ledger. In our review of vendor invoices paid by Conatser Construction, no discrepancies were noted between the quantities required by the contract and those paid by Conatser Construction.

Insurance and bonding requirements appear to have been met as outlined in the contract. Also, forms required to support satisfactory project completion (e.g., Letter of Acceptance and Notice of Project Completion) were properly authorized and retained within the project files.

Payment information recorded in CPMS did not agree with payment information recorded in the City's general ledger for this project. Additional information on this issue is documented in the Detailed Audit Finding section of this report.



## Overall Evaluation

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High	Medium	Low
	<a href="#"><u>Reconciliation of project cost information within the construction project management system and the general ledger</u></a>	



## Detailed Audit Finding

### **Payment information recorded in CPMS does not agree with payment information recorded in the general ledger.**

The General Ledger and the CPMS are intended to mirror one another. The two systems are supposed to interface with each other on a nightly basis. As a result, the payment invoices documented within MARS should agree with those within CPMS.

During our reconciliation of these systems, we documented a difference of \$152,757 between project-related payments reported in CPMS and MARS. MARS included payments totaling \$2,158,559, while CPMS included payments totaling \$2,005,802.

There was no specific explanation as to why or how the difference between the two systems occurred. However, the missing transactions have since been added to the project in CPMS.

It is the responsibility of TPW and Water personnel to reconcile the information in CPMS to the City's general ledger prior to project close-out. Without a formal and timely reconciliation of payment and cost information performed, significant errors could occur and not be corrected timely.

#### **Recommendation 1A:**

*The Transportation and Public Works and Water Department Directors should consider utilizing the CPMS to track payments, by project, so that project under and over-runs and the reapplication of project under-runs to other projects can be captured within the CPMS system.*

**Auditee's Response:** Concur. The respective Project Managers are responsible for tracking the status of payments for their projects and will be reminded to monitor for discrepancies between CPMS and MARS and will work with fiscal staff to reconcile any differences that occur. As CPMS is phased out and the new ERP systems are put in place, the need for an approach to reconciliation may change, but the assigned responsibilities will remain the same.

**Target Implementation Date:** February 27, 2015

**Responsibility:** Project Managers

#### **Recommendation 1B:**

*The Transportation and Public Works and Water Department Directors (in conjunction with the Chief Technology Officer) should determine how this error occurred and develop a permanent "fix" to the problem, or ensure that a solution is incorporated into the ERP system now under development.*





**Auditee's Response:** Concur. To the extent possible, and in light of the change from the CPMS system, we will work with Information Technology Services to resolve the issue that resulted in the discrepancy.

**Target Implementation Date:** February 27, 2015

**Responsibility:** Project Managers



## Acknowledgements

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The Department of Internal Audit would like to thank Traffic and Public Works and Water Department staff for their cooperation and assistance during this audit.