



City Auditor's Office

**Audit of the
Public Works
Road Resurfacing
Contracts**

Report Issued: March 2, 2017



TO: Mayor and Council Members

THRU: Margaret L. Krym, City Auditor 

FROM: Oscar B. Claudio, Assistant City Auditor 

DATE: March 2, 2017

SUBJECT: Audit of the Public Works Road Resurfacing Contracts

This audit disclosed five audit findings. Accordingly, the audit report provided recommendations and suggestions to address these issues. Overall, we concluded that the audited Public Works road resurfacing contracts were generally properly managed and administered. In most respects, procedures for the competitive award of contracts were followed. All of the road resurfacing projects audited were completed within budget. Lastly, we observed that project progress monitoring procedures were being improved during the period reviewed.

However, opportunities for improvement exist in developing and implementing policies and procedures regarding compliance with contract terms, conditions, specifications and general project activities. In addition, management's project monitoring and review controls need to be formally established in written policies and procedures. Finally, improvement is needed to enhance and strengthen procedures for managing construction projects.

During the course of this audit, Public Works and Procurement personnel are to be commended on their proactive response to each finding as it was presented. These personnel have diligently worked to find and formulate meaningful solutions to mitigate the identified risks and are in the process of implementing corrective actions to address the reported audit findings.

We appreciate the assistance provided by the Department personnel in completing this audit. Should you have questions or need clarification, please do not hesitate to call the City Auditor's Office at (239) 242-3382 or (239) 242-3380.

C: John Szerlag, City Manager
Michael Ilcyszyn, Assistant City Manager
Dolores Menendez, City Attorney
Rebecca vanDeutekom, City Clerk
Paul Clinghan, Public Works Director
Victoria Bateman, Financial Services Director
Audit Committee

TABLE OF CONTENTS

EXECUTIVE SUMMARY	4
BACKGROUND.....	6
OBJECTIVE.....	6
SCOPE AND METHODOLOGY	7
STATEMENT OF AUDITING STANDARDS.....	8
AUDIT FINDINGS AND RECOMMENDATIONS.....	8
Finding # 1:	8
Recommendation # 1:	9
Management Response # 1:.....	9
Finding # 2:	9
Recommendation # 2:	10
Management Response # 2:.....	10
Finding # 3:	10
Recommendation # 3:	12
Management Response # 3:.....	12
Finding # 4:	13
Recommendation # 4:	14
Management Response # 4:.....	14
Finding # 5:	14
Recommendation # 5:	15
Management Response # 5:.....	15

EXECUTIVE SUMMARY

The Department of Public Works (Department) has developed a master plan for an on-going Capital Improvement Projects (CIP) program that includes local and major road resurfacing; median improvements; and alley paving program. The estimated annual funding for these projects are as follows:

- Local and major road resurfacing \$6.5 million;
- Median improvements \$300,000; and
- Alley paving \$500,000.

The master plan covers the period from fiscal year 2014 through 2018.

The audit reviewed six road resurfacing contracts dating from October 2013 through October 2015. The objectives of this audit were to determine whether:

- Contracts were properly approved, reviewed and competitively awarded in accordance with City procurement policies and procedures, applicable City Code of Ordinance and other governing laws, rules and regulations;
- Contract activities were properly monitored by appropriate City staff to ensure required work was performed in accordance with contract stipulations and conditions;
- Payments to contractors were proper, correct, supported, authorized and in accordance with contract terms and conditions; and
- Internal controls provided reasonable assurance that construction project activities complied with effective administration of capital projects.

We concluded the selected Public Works road resurfacing project contracts were generally properly managed and administered. In most respects, procedures for the competitive award of contracts were followed. All of the road resurfacing projects were completed within budget. During the period reviewed, we observed that project progress monitoring procedures were being improved.

However, opportunities for improvement exist in developing and implementing policies and procedures regarding compliance with contract terms, conditions, specifications and general project activities. Management's project monitoring and review controls need to be formally established in written policies and procedures. Additionally, we identified instances where improvement is needed to enhance and strengthen procedures for managing construction projects. These instances include the following:

- One of the six contracts tested was not approved, executed and reviewed in compliance with certain procedures and guidelines specified in the City Code of

Ordinance Chapter 2 Article VII. The audit showed that a Contractor's Area Manager signed to execute a contract on behalf of the Company. However, there was no certified copy of a Corporate Board Resolution authorizing this person to execute contracts on behalf of the Company.

- The Department did not have documented policies or procedures for approval, review and monitoring of payments made to contractors. For the most part, documentation of review and approval for final contract payments only evidenced review and approval by the Project Manager.
- Work change directives or written amendments for major work items that were significantly increased in excess or decreased below the original contract estimated quantity were not documented.
- Several documents that are required to support contractual transactions were missing or not located in the Department's project file folders. The lack of adequate supporting procurement documentation cannot provide assurance that purchased products and services complied with contract specifications; billed amounts were calculated correctly; unallowable or unreasonable costs were identified; and materials and services were received.
- Management internal controls and tools need to be strengthened in order to provide reasonable assurance that construction project activities complied with management directives regarding effective administration of capital projects.

BACKGROUND

The Department of Public Works is comprised of a diverse group of divisions such as Transportation, Stormwater Facilities, Engineering and Facilities Management. The Department is responsible for engineering services, and project management relating to construction and maintenance of City streets, roadways, sidewalks and other public right-of-ways. In addition, the Department is responsible for drainage maintenance relating to roadside ditches and major canals and stormwater ponds. Other responsibilities include traffic engineering and management.

The Department has developed a master plan for an on-going Capital Improvement Projects (CIP) program that includes local and major road resurfacing; median improvements; and alley paving program. The estimated annual funding for these projects are as follows:

- Local and major road resurfacing \$6.5 million;
- Median improvements \$300,000; and
- Alley paving \$500,000.

The master plan covers the period from fiscal year 2014 through 2018.

OBJECTIVE

The audit objectives were to determine whether:

- 1) The contracts were properly approved and competitively awarded in accordance with the City procurement policy and procedures and other governing laws, rules and regulations;
- 2) Contract activities were properly monitored by appropriate City staff to ensure required work was performed in accordance with contract stipulations and conditions;
- 3) Payments to contractors were proper, correct, supported, authorized and in accordance with contract terms and conditions; and
- 4) Internal controls provided reasonable assurance that construction project activities complied with effective administration of capital projects.

SCOPE AND METHODOLOGY

The scope of this audit focused primarily on evaluating the Department's road resurfacing contracts and project activities executed and implemented during fiscal years 2014 and 2015.

This audit engagement was conducted and planned accordingly and we examined relevant evidence and obtained sufficient information to provide reasonable assurance on the reported conclusions. Consequently, several methodologies were utilized to accomplish the audit objectives. Our methodologies included but were not limited to:

- Review of City's Procurement Policy and Procedures manual;
- Review of City Code of Ordinance Chapter 2 Article VII and other governing laws and regulations;
- Review and analysis of the selected road resurfacing contracts and other contract documents such as purchase orders, delivery tickets, expenditure records, change orders, payment applications, notice to proceed, bond and insurance requirements;
- Contract document review to ensure the contract files are complete and well documented;
- Analysis of required closing documents such as certificate of substantial completion, contractors' certification of completion, consent of surety for final payment, and affidavit of final payment;
- Interviews with contract administrator, legal and project management personnel;
- Review project inspection and progress reports; and
- Review of the sufficiency of the internal control system.

Sample testing was used to improve the overall efficiency of the audit. Original records were reviewed and copies were used as evidence and verified through physical examinations.

Lastly, the Department's management and personnel were inquired in order to develop an understanding of relevant internal control structures, obtain sufficient information of operations and to verify the validity of the gathered data and documents.

This audit was neither designed nor intended to be a detailed study of every relevant system, procedure or transaction. Accordingly, the opportunities for improvement presented in this report may not be all-inclusive of areas where improvement may be needed. Although we exercised due professional care in the performance of this audit, this should not be construed to mean that unreported noncompliance or irregularities do not exist. The deterrence of fraud is the responsibility of management.

STATEMENT OF AUDITING STANDARDS

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 FINDINGS AND RECOMMENDATIONS

Finding # 1: One of the six contracts tested was not approved, executed and reviewed in compliance with certain procedures and guidelines specified in City Code of Ordinance Chapter 2 Article VII.

The City Code of Ordinance Chapter 2 Article VII Section 2-146 (c) states that:

- Construction contracts in excess of \$50,000 shall be executed by the City Manager, City Clerk and by either the President or Vice President of the contractor. Persons other than the President or Vice President may sign on behalf of the contractor provided there is a certified copy of a corporate resolution authorizing that person to sign.

The audit disclosed evidence that certain procedures and guidelines specified in City Code of Ordinance Chapter 2 Article VII were not appropriately followed. The non-compliance was found in the following situation:

- A Contractor's Area Manager signed to execute contract PW13-03/TM on behalf of the Company. However, there was no certified copy of a Corporate Board Resolution authorizing this person to execute the contract on behalf of the Company.

There was no documented review and monitoring policy in place to ensure that the contracts were appropriately approved, executed and reviewed to comply with certain guidelines specified in the aforementioned City Code of Ordinance. The Procurement Department indicated that a process is in place in reviewing the contracts but this process is not formally documented.

Without a well-documented review and monitoring policy, the City could be exposed to potential legal challenges and high liability insurance premiums.

Recommendation # 1:

We recommend the Procurement Department should establish documented policy and control mechanisms (possible checklist) that will ensure the construction contracts meet the compliance requirements specified in the aforementioned City Code of Ordinance and other governing laws, rules and regulations. In addition, review of the completed contract documents should be conducted and verified for compliance in order to protect the City against potential legal challenges and payment of high liability insurance premium.

***Management Response # 1:** Procurement division will update the Procurement Manual and procedure to clearly state and memorialize the process of securing the authorized signature on contracts including a requirement to add to the file the document reflecting the authorization of said signer (i.e. for Corporation - Corporate Resolution; for Sole Proprietor, Sunbiz documents, etc.) as well as a checklist denoting all aspect of the required documentation. It is expected to be finalized by July 2017.*

Finding # 2: The Department did not have documented policy or procedures for approval, review and monitoring of payments made to contractors.

Review of all payment applications provided by the Contractors for the six road resurfacing contracts tested disclosed the following condition:

- On payment application number 7 for Contract PW15-50/DS, the Contractor requested payment for \$514,279. This full amount was paid by the City on August 12, 2016. However, the supporting documentation for the invoice amount was for only \$326,154.

Upon inquiry Project Management was not able to explain the excess amount paid. It appeared that Project Management did not have a clear understanding of the various components of this invoice.

After audit fieldwork was completed the incoming Public Works Director requested the Utilities Business Analyst, who was not a part of the management of this project, to perform an analysis of all payments made on the contract. The paid amount was verified to be \$514,270.81 which was correctly billed by the vendor and included retainage that was contractually due at that point of project completion.

Best business practices and good governance require diligent review and understanding of the accuracy of billed items on invoices for compliance with contract terms and pricing agreements prior to payment. In addition, a second layer or upper management review and approval of all payments made is necessary so that potential errors can be corrected and minimized.

The process used by management to monitor and review payments made to contractors lacks adequate controls since:

- Policies and procedures governing this process are not documented and approved by management.

- There was no documented evidence that review procedures included verification of invoice calculations.
- In most cases, evidence showed that only the Project Manager reviewed and approved contract payment applications including the payout of retainage.

Recommendation # 2:

We recommend the Department develop and implement written policy and procedures for reviewing mathematical accuracy of progress billings for all payment applications prior to payments and all payments are adequately and properly supported. Also, the policy should have procedures that will identify the individuals responsible for the payment review process; compliance with contract terms and pricing agreements; as well as specific procedures required to ensure payments are authorized by a second level of management authority, i.e.; Division Manager and/or the Department Director.

Management Response # 2: Comments on the audit results: 1) The audit indicates that payment approvals were only reviewed by the Project Manager. However, payment requests are submitted to the Contract Specialist for verification of mathematical accuracy prior to obtaining approval by the Project Manager. In the specific case of pay application #7 for Contract PW15-50/DS, the contractor requested a payment of 5% retainage in accordance with the contract. In previous paving contracts, typically all retainage (10%) is returned upon completion of all punch list items. While all the paving work was completed, the final resolution of punch list items was not complete. 2) The Project Manager indicated that the contractor requested the 5% retainage payment after a mutual agreement on the invoice amount for pay application #7.

Response to Recommendation: A project manager's Standard Operating Procedure (SOP) for construction is under development. It will cover all aspects of managing a construction project from initial pre-construction meeting to substantial completion and final approval. It will include monitoring reporting requirements, payment processes and approvals and required supporting documentation. In addition, it will include guidelines for documenting changes to contracts, change authorization levels for staff and record keeping requirements. It is expected that the SOP will be completed by October 2017.

Finding # 3: Work change directives or written amendments were not documented for major items of work that were significantly increased in excess or significantly decreased below the original estimated contract quantity.

Management has stated that the road paving contract bid process begins with estimated quantities for identified line items or work. These estimates are prepared by department staff. The quantities are subject to change once work begins and actual road conditions are identified. Therefore, "Unit Price" contracts are utilized allowing for quantity variations after the

contract has been executed. In addition, management stated that it is often the case that road conditions will vary from original estimates and cause significant changes in line item quantities.

For these reasons, it is best practice and industry standard for unit price bidding to be used for paving contracts. In a unit price contract the City will only be required to pay for actual quantities performed or supplied on the project. Therefore, the most significant risk when using a unit priced contract is that actual quantities used may vary from billed quantities. Best practice mitigation of this risk would require that detailed records of the actual work performed be maintained in order to ensure accurate invoicing and payment.

The Invitation to Bid General Conditions Article 11 – Changes in the Work states that without invalidating the Agreement and without notice to any Surety, Owner may at any time or from time to time order additions, deletions or revisions in the work. Such additions, deletions or revisions will be authorized by a written amendment, change order or work change directive. Also, the Contractor is required to notify the Owner of any changes in the work within five days of said change.

Also, the Florida Department of Transportation Standard Specifications for Road and Bridge Construction Section 4-3 Alteration of Plans or Character of Work defines significant change applies only when a major work item is increased in excess of 125% or decreased below 75% of the original contract quantity. A quantity change of this magnitude could allow a contractor and/or Owner the opportunity to consider a unit price adjustment however this did not occur with any of the contracts examined. All unit prices remained at the original contract amount.

During the audit we observed quantity changes made above 125% or below 75% of the original contracted quantity. Management indicated that they were aware of the line item quantity changes but other than progress invoices, they could not provide documentation to evidence this awareness or to evidence their prior consent. In some but not all cases, emails of communication between management and contractor were provided but these were not maintained in a project file to provide a complete record of management and control of the project.

Without documentation of work change directives, there is no evidence that changes were authorized and changes affecting the general scope of work may not be addressed accordingly in resolving errors and discrepancies. In addition, appropriate directions may not be communicated accordingly when work directives or task amendments are not provided to contractors.

It should be noted that all of the road resurfacing projects reviewed were completed within the original approved contract amount.

Below are examples of line item quantity changes:

	Contract Completion Quantity	Original Contract Quantity	Quantity Increase or (Decrease)	Unit Price	Dollar Value of Change	Percentage quantity increase or (decrease)
PW13-03/TM (Total Contract amount = \$1,099,454)						
Milling	19,062 sq. yd.	29,000 sq. yd.	(9,938 sq. yd.)	\$.85	(\$ 8,447)	(34%)
Asphalt S-III	7,811 tons	12,670 tons	(4,859 tons)	\$54.05	(\$262,629)	(38%)
Structural	2,707 sq. yd.	100 sq. yd.	2,607 sq. yd.	\$148.90	\$388,182	2,607%
Repairs						
Leveling	33.39 tons	100 tons	66.61 tons	\$142.20	(\$ 9,472)	(67%)
Surface repairs	0	10,000 sq.yd.	10,000 sq.yd.	\$10.65	(\$106,500)	(100%)
PW15-50/DS (Total Contract amount = \$4,542,886)						
Milling	249,033 sq.yd.	154,176 sq.yd.	94,857 sq. yd.	\$1.40	\$132,800	62%
Structural	230 sq. yd.	576 sq. yd.	(346 sq. yd.)	\$93	(\$ 32,178)	(60%)
Repairs						
Valve Box	55 each	123 each	(68 each)	\$225	(\$ 15,300)	(55%)
PW15-56/DS (Total Contract amount = \$3,316,291)						
Milling	166,083 sq.yd.	127,534 sq.yd.	38,549 sq. yd.		\$108,345	49%
Structural	873 sq. yd.	2,285 sq. yd.	(1,412 sq.yd.)		(\$107,390)	(64%)
Repairs						

Recommendation # 3:

We recommend the Department develop and implement policies and procedures to document approval and authorization of Item of Work quantity changes when a major bid item is significantly increased or decreased from the original contract quantity estimate. The Department policies and procedures should specifically define what is “significant” using agreed upon variance dollar amounts and variance percentages. In addition, management should have a review and oversight process in place that will monitor the often changing work item quantities within the contracts and a complete project file should be maintained to evidence all approved modifications to the work in progress.

Management Response # 3: Comments on audit results: 1) Common practice in unit price contracts is to adjust quantities as necessary during the project. Frequently these changes occur in real time, with staff determining the changes needed based on field discussions with the contractor. In these situations, written documentation is on the inspector’s daily report. This documentation is sufficient to verify the quantity adjustments and follows the intent of the contract. 2) In the specific contracts identified in the audit, it should be noted that all the work required in the contract (the roads to be paved) were completed as contracted.

Response to Recommendation: A project manager's Standard Operating Procedure (SOP) for construction is under development. It will cover all aspects of managing a construction project from initial pre-construction meeting to substantial completion and final approval. It will include monitoring reporting requirements, payment processes and approvals and required supporting documentation. In addition, it will include guidelines for documenting changes to contracts, change authorization levels for staff and record keeping requirements. It is expected that the SOP will be completed by October 2017.

Finding # 4: Several documents that are required to support contractual transactions were missing or not located in the Department's project file folders.

Review of the six selected road resurfacing project file folders disclosed that several documents necessary to support contractual transactions were not located or missing. Examples include:

- Procurement records;
- Change orders, work change directives or written amendments;
- Delivery tickets;
- Notice to proceed;
- Certificate of insurance liability;
- Consent of surety for final payment;
- Affidavit of final payment;
- Certificate of substantial completion;
- Contractor's certification of completion.

The majority of these documents had to be requested from the contractors in order to: 1) verify and validate the information indicated on the applications for payments; 2) determine compliance with the contract documents general conditions; and 3) compliance with government record keeping requirements.

The Department had not performed a customary review of the project file folders on a regular basis to ensure file documents are maintained properly. For this reason, incomplete or missing documents were not immediately detected and placed in their respective folders. Procedures had not been established to effectively monitor and ensure that complete and appropriate records are maintained in the project file folders.

Insufficient and inaccurate documents do not provide adequate support and are not in accordance with government record keeping requirements. The lack of or missing documents supporting contractual transactions potentially hinders management's ability to determine whether:

- Contract deliverables were in compliance with agreed construction design specifications;
- Purchased materials and services were actually received and delivered;
- Unallowable or unreasonable costs were identified;
- Billed amounts were calculated correctly;
- Contractors provided the necessary closing documents required for final payments;

- Construction projects were in compliance with the required insurance coverage; and
- Revisions, additions and deductions in contracted work items were authorized.

The State of Florida General Records Schedule GS1-SL for State and Local Government Agencies Item #136 requires documents for capital improvement projects in progress and/or project proposals sent out to bid should be kept in the project file folders for 10 years after completion of the project. These documents may include, but are not limited to, drawings, correspondence, construction and contract specifications, budget revisions, change orders, notice to proceed and reports. Additionally, Item #340 requires procurement records such as requisitions, purchase orders, contracts, vendor invoices, acceptance of deliverables, expenditure records and related documents are to be retained for five fiscal years.

Recommendation # 4:

We recommend the Department should develop and implement written procedures that will ensure necessary and appropriate documents are maintained in the project file folders. Management should ensure these documents are maintained in accordance with the government record keeping requirements. Lastly, customary review of project files should be performed on a regular basis to ensure file folders are up to date.

***Management Response # 4:** Comments on audit results: Many of the documents requested by the auditor are prepared and processed by multiple City departments and provided to the Project Manager for reference during the term of the contract. In the specific case where the auditor requested information from the contractor, the documents were available to the Project Manager at the time of the contract but were placed in storage and not easily accessible at the time of the audit.*

***Response to Recommendation:** The project management software program, recently acquired by the City, provides a method to retain all records and documents for a single project in a central location. Access is available to all staff associated with a project including the Project Manager, Accounts Coordinator, Inspectors and management. All documentation associated with the project beginning with the contract, notice to proceed and pre-construction meeting notes to project completion will be added to the file folder.*

Finding # 5: Management internal controls and tools need to be strengthened in order to provide reasonable assurance that construction project activities complied with management directives regarding effective administration of capital projects.

In order to successfully lead and complete capital projects, the Department's project management process allows Project Managers certain latitude to oversee projects. However, unclear expectations caused by this flexibility may create unintended consequences in the construction process.

The audit disclosed that the Department lacks the following project management tools to effectively manage capital projects:

- Project management manual to provide specific procedures and guidelines on how to efficiently manage capital projects;
- Project management electronic data system;
- Use of project risk analysis;
- Use of change order or work change directive information to analyze underlying issues – no root-cause analysis is performed on change orders or work change directives to determine key learnings from projects and how to apply them to future projects;
- Complete documentation of final walk-through inspections – documentation is not sufficiently maintained to accurately reflect final walk-through of complete construction projects.

Good management practices suggest the establishment of effective program procedures so that management can provide guidance to personnel and implement the application of knowledge, skills, tools and techniques to projects in order to meet the project expectations and requirements and to obtain benefits and control.

Recommendation # 5:

We recommend the Department should develop and implement formal written construction project management procedures that will serve as management guidelines for its personnel when managing projects. The project management procedures should be used as standardized processes that would include the above mentioned management tools. Well-defined policies and procedures will provide management and staff information needed to effectively make decisions at the most appropriate level, streamline administrative processes and provide the basis for individual and departmental accountability.

We further recommend the Department employ information technology applications to document their construction management processes and most importantly field inspections.

Management Response # 5: Response to Recommendation: A project manager’s Standard Operating Procedure (SOP) for construction is under development. It will cover all aspects of managing a construction project from initial pre-construction meeting to substantial completion and final approval. It will include monitoring reporting requirements, payment processes and approvals and required supporting documentation. In addition, it will include guidelines for documenting changes to contracts, change authorization levels for staff and record keeping requirements. It is expected that the SOP will be completed by October 2017.

The project management software program, recently acquired by the City, provides a method to retain all records and documents for a single project in a central location. Access is available to all staff associated with a project including the Project Manager, Accounts Coordinator, Inspectors and management. All documentation associated with the project beginning with the contract, notice to proceed and pre-construction meeting notes to project completion will be added to the file folder.