

**FREDERICK COUNTY  
INTERAGENCY INTERNAL AUDIT AUTHORITY**

**FREDERICK COUNTY PUBLIC SCHOOLS  
CONSTRUCTION MANAGEMENT  
PHASE I**

**REPORT 11-04  
JUNE 15, 2011**





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## FCPS Construction Management – Phase I

# Executive Summary

We performed a walkthrough and comparisons of the actual percentages of completion of a sample of items from the Schedule of Values to the Application for Payment on an ongoing project. This allowed us to determine that Frederick County Public Schools (FCPS) Construction Management procedures ensure that contractors charge FCPS based on the percentage of work completed as required by the contract. Audit tests also indicated that, generally, their procedures ensure that amounts charged by contractors for change orders are in compliance with contract terms. However, we did find that improvements are needed to ensure that amounts charged by contractors for contractor-owned equipment and overhead, profit, and bond are in compliance with contract terms. We found that insufficient reviews of change orders resulted in overpayments of approximately \$27,600 for contractor-owned equipment and overhead, profit, and bond. In addition, we found that contractors were not required to itemize labor costs for lump sum change orders. We also found that documentation does not identify the total project cost on change orders before approval. Additionally, Notices to Proceed were not readily available and change orders were not consistently classified by type.

### REVIEW OF CHANGE ORDERS NEEDS STRENGTHENING

During our audit, we tested a random sample of 60 out of 794 change orders. The 60 change orders included 123 potential change orders (PCOs<sup>1</sup>) totaling approximately \$305,000 for the six projects as of August 2010. On eight of thirteen PCOs containing equipment charges, contractors did not comply with the contract and overcharged FCPS approximately \$17,900 for contractor-owned equipment. We also found that the General Conditions Contract used by the Construction Management Department is limiting because it references one local rental company's rates as a basis for charging contractor-owned equipment rather than regional or national rates. Although 88% of the PCOs we reviewed contained proper overhead, profit, and bond charges, 15 of 123 change orders sampled, or 12%, contained errors resulting in \$9,725 in overcharges. After we brought this matter to the attention of FCPS Construction Management, they prepared a negative change order to recover \$7,989 of these overcharges. We recommend they also recover the \$17,900 in equipment overcharges as well as the remaining \$1,736 in overhead, profit, and bond overcharges.

Additionally, we found that the General Conditions Contract does not specifically describe the supporting documentation or detail that contractors should provide when submitting cost proposals for lump sum changes to contracts, and does not require itemization of labor costs. However, FCPS regulations and best practices require supporting documentation and itemization of all associated costs. The costs should be segregated by labor, materials, and equipment and include line item estimates. The line item estimates should detail material prices, labor quantity take-offs, hourly labor pricing and extensions, etc.

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<sup>1</sup> FCPS uses the term PCO to mean either potential change order or an individual line item on an executed change order.

In addition to recovering the overcharges, we are also recommending that FCPS Construction Management: (1) review additional changes orders that were not included in our sample from the non-compliant contractors noted during our audit and recover any additional overcharges, (2) perform a thorough review of all future change orders to ensure compliance with their contracts, and (3) consider amending future contracts to: (a) use national or regional pricing rates for contractor-owned equipment and, (b) be consistent with FCPS Regulation #200-6 and best practices and require that support for PCOs be itemized.

**CHANGE ORDER APPROVAL POLICY SHOULD BE REVISED**

Under the construction management delivery method, PCOs that relate to a project change are prepared and processed individually by the prime contractors. Oftentimes, a project change involves numerous prime contractors. Once PCOs are submitted, the construction managers assign related PCOs the same PCO number on the change order logs. The final cost of a project change can only be calculated after all related PCOs are submitted, and related PCOs are not required to be submitted simultaneously. Furthermore, related PCOs are not always submitted prior to approval. FCPS Construction Management staff states that they are aware of the total cost of a project change prior to approval; although, documented evidence of this is not always retained.

Additionally, the total cost of a project change is not always submitted to the Board of Education (BoE) for approval. FCPS Regulation #200-6 “Change Orders to Construction Projects” only requires that the BoE approve or be informed of PCOs, or individual line items on a change order, over \$25,000. Given this regulation, the BoE may not be made aware of the total cost of a project change. We recommend FCPS require their construction managers to submit the contractors’ total proposed cost of a project change prior to approving any potential changes and determine if the change order policy should include requirements for BoE approval based on the total cost of a project change.

**FCPS CONSTRUCTION MANAGEMENT SHOULD MAINTAIN NOTICES TO PROCEED AND CLASSIFY AND TRACK CHANGE ORDERS**

For time and material change orders, we found that the General Conditions Contract does not contain a requirement to issue Notices to Proceed. As a result, 25 out of 47, or 53%, of the time and material change order files we reviewed did not contain written Notices to Proceed. Although FCPS Construction Management staff indicated that contractors could have been notified to proceed via email, these emails are not maintained in the change order files, but instead are saved on the network. Because correspondence on a project is voluminous and all emails for an entire project are filed together, it would be difficult for FCPS Construction Management staff to locate a particular email in the event of a dispute. We are recommending that FCPS Construction Management amend their General Conditions Contract to include a requirement to issue Notices to Proceed. We are also recommending that they develop a policy to maintain Notices to Proceed by change order and file them so that they are readily available. Because we believe that the use of an automated construction management project system would be a more efficient way to maintain and track project data, including Notices to Proceed, we also recommend that FCPS continue their efforts to assess the cost and feasibility of implementing an automated system.

Furthermore, FCPS Construction Management allows their construction managers and/or architects to classify change orders in accordance with their own procedures resulting in inconsistent change order classifications. Using consistent classifications such as errors and/or omissions, unforeseen conditions, and owner/user requests would give the Construction Management Department the capability to determine total dollar amounts and percentages by type of change order. This would allow them to follow-up on error and/or omission change orders where cost recoveries may exist, and would give them the ability to set parameters to limit owner/user requests as needed. Therefore, we are recommending that FCPS Construction Management develop procedures to consistently classify change orders by type.

On June 3, 2011, the Executive Director of Facilities Services provided a written response to our recommendations (see Attachment). He agreed with all of our recommendations with the exception of 4(b). We summarized his response in Section V and provided a comment to Recommendation 4(b) in Section VI. Some recommendations have already been implemented and the remaining recommendations are to be implemented by January 1, 2012.



## FCPS Construction Management – Phase I

# I. Introduction

Internal Audit (IA) 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

This report is intended to provide information to management; however, it is also a matter of public record and with the exception of any applicable disclosure exemptions, distribution should not be limited. Information extracted from this report may also serve as a method to disseminate information to the public as a reporting tool to help citizens assess government operations. Management responsible for the functional area reviews the report, and their formal written responses are incorporated into the final report per IIAA policy and generally accepted government auditing standards.

It is management's responsibility to design and implement an adequate system of internal control, and it is the Internal Audit Division's responsibility to determine if management's system of internal control is functioning properly in relation to the audit objective. It is also management's responsibility to decide if action should be taken in response to any reported audit recommendations, taking into consideration related costs and benefits. Management, therefore, assumes the risk of making the decision not to implement any reported recommendations.

# II. Background

Frederick County Public Schools (FCPS) Construction Management, a department within the Facility Services Division, is responsible for managing the design and construction of new schools, major building additions and renovations, and systemic renovation projects. According to his job description, the Director of Construction Management has primary responsibility over the "administration and supervision of the facilities design and construction function." He reports directly to the Executive Director of Facilities Services. Two Senior Project Managers and three Project Managers assist the Director of Construction Management in his duties.

The Construction Management Department utilizes both the construction management (CM) and general contractor (GC) delivery methods. The method is determined on a project by project basis, and is based on the size and complexity of the project. Under the CM delivery method, FCPS awards individual contracts to numerous prime contractors who are paid monthly based

## FCPS Construction Management – Phase I

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upon the percentage of work completed. The construction manager manages all phases of the construction project, and reports to the Senior Project Manager. Conversely, on a GC project, one contract is awarded to the GC who is then responsible for contracting with individual sub-contractors. FCPS pays the GC monthly as work is completed. The GC, in turn, pays each of the sub-contractors. The architect manages the project and reports to the Senior Project Manager. On every project, the architect is responsible for designing the project, approving all change orders, and certifying the accuracy of the monthly payments to the prime contractors or GCs prior to the owner's approval.

FCPS Central Office



West Frederick Middle School



Photographs provided by FCPS

The construction of the FCPS Central Office was managed by the Special Projects Planner who reports directly to the Executive Director of Facilities Services. The building was constructed under the design/build method of construction, and was not included in the Construction Fund. Instead, it is being paid for through a lease lease-back agreement<sup>2</sup> from the Operating Fund.

During the audit period, the Facilities Services Division was managing six construction projects - five schools and the Central Office. Expenditures as of January 31, 2011 on these six projects, including 891<sup>3</sup> approved change orders, ranged from \$9.9 million to \$73 million. (See table on page 3.)

A contingency budget for change orders is set during the budget process and is based on a percentage of the initial project budget. FCPS' change order goal for new schools, additions, and renovations is three, five, and ten percent of the initial project budget, respectively. Because it was a special project, a contingency budget was not set for the Central Office. As of January 31, 2011, New Market Elementary School was the only project that slightly exceeded its change order goal. (See table on page 3.) However, the total project expenditures fell within the overall final budget of \$11,673,380.

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<sup>2</sup> The lease lease-back agreement is an arrangement with a private sector lender to purchase land, and to design, construct, and furnish the Building. The Board of Education (BoE) leased the property to the lender and the lender, in turn, leased the property back to the BoE over 25 years after construction was completed. At the end of the lease term, the property will be owned by the BoE.

<sup>3</sup> Updated January 31, 2011 data provided by FCPS was not audited.

**FREDERICK COUNTY PUBLIC SCHOOLS  
EXPENDITURES AND CHANGE ORDERS AS OF JANUARY 31, 2011<sup>4</sup>**

<b>Project</b>	<b>Initial Budget*</b>	<b>Total Expenditures</b>	<b>Percent Complete</b>	<b>Cumulative Executed Change Orders</b>	<b>Change Orders as a Percent of Initial Budget</b>
Linganore High School	\$77,175,182	\$72,991,096	99%	\$1,413,994	1.8%
New Market Elementary School	9,482,000	11,648,380**	100%	541,667	5.7%
Oakdale High School	70,946,000	68,769,579	100%	2,229,456	3.1%
Walkersville Elementary School	12,867,928	9,868,079	92%	164,213	1.3%
West Frederick Middle School	43,155,467	37,134,231	99%	1,931,956	4.5%
Central Office	17,300,000	17,396,841**	99%	(198,117)	-1.1%

\* Excludes contingency amounts.

\*\* The New Market project did not exceed its total budget because there were \$1,698,380 in approved budget amendments and \$493,000 in contingencies. The Central Office project did not exceed its total budget because it earned \$216,486 in interest.

If a contractor uncovers an unforeseen condition or a condition that he feels is not covered under the contract, he issues a Request for Information with a detailed explanation of the condition. The architect makes a determination as to the validity of the condition and issues directions known as an Architect Supplemental Instructions (ASI) and the architect determines contract applicability. If the issue is a condition not covered by the contract he/she may also issue a Request for Proposal (RFP) formally requesting a price from the contractor. If an RFP is issued, the proposal from the contractor will be evaluated and categorized as follows:

- If all parties agree, the potential change order (PCO<sup>5</sup>) becomes a change order and is processed as such.
- If the parties do not agree, the following actions are possible:
  - Issue a Construction Change Directive (CCD) and obtain agreement on cost at a later date. This is considered a valid option if time is critical and the change is significant.
  - Order the work to be accomplished on a Time and Material basis. This is a form of an informal CCD used on less significant changes, especially where the contractor has significant risk.
  - Delay the start of work and continue to negotiate the costs until a resolution is found. This is done when time is not critical.
  - Consider performing the work with FCPS staff or under separate contract.

<sup>4</sup> Updated January 31, 2011 data provided by FCPS was not audited.

<sup>5</sup> FCPS uses the term PCO to mean either potential change order or an individual line item on an executed change order.

An “Owner Requested Change” follows the same path; however, most normally begins with the ASI phase and continues through the end of the described processes.

Once the form of the change, costs and timelines have been determined, the construction manager (if applicable), the architect, the Senior Project Manager, and the Director of Construction Management all approve the change order and it is fully executed. Additionally, if an individual PCO on the change order is greater than \$25,000 and is not considered an emergency, the Board of Education (BoE) approves it prior to its execution. If a PCO is considered an emergency and is over \$25,000, it is submitted to the BoE for informational purposes after its execution. Once a change order is executed, it is forwarded to Finance for payment on a future requisition.

FCPS’ “Change Orders to Construction Projects” Regulation #200-6 states, “In order to reduce paperwork, multiple unrelated PCOs for the same project can be submitted on one contract form.” Therefore, one change order could contain multiple PCOs. However, proper documentation and approvals are required for each PCO.

### **III. Objective, Scope and Methodology**

At the end of the planning phase of this audit, we decided to divide the audit into two phases. As a result, two separate reports will be issued. The objective of this phase of the audit was to determine if FCPS procedures ensure that amounts charged by contractors are in compliance with contract terms. The scope of the audit included FCPS capital construction projects between contract award and substantial completion as of August 31, 2010, and projects closed since July 1, 2008. It did not include a determination of the reasonableness of materials included on change orders. Phase II will determine if projects are: (1) completed on time and within budget, (2) constructed in accordance with contract specifications and laws/regulations, and (3) properly closed out.

We interviewed the Executive Director of Facilities Services, the Special Projects Planner, the Director of Construction Management, the Senior Project Managers, the Project Managers and Finance staff to determine their processes and internal controls. We also reviewed FCPS’ General Conditions Contract and their standard agreements with the contractors and construction managers. We conducted walkthroughs of the payment and change order review processes. Additionally, we performed a physical walkthrough of one of the projects to ensure that there was a clear correlation between the amount billed and the percentage of work completed.

To test change orders, we randomly selected a sample of 60 out of 794 change orders. The 60 change orders included 123 PCOs totaling approximately \$305,000 for the six projects as of August 2010. The sample was a statistically valid sample size based on a maximum tolerable error rate of 5 percent and a desired reliability of 95 percent.

## **IV. Audit Results**

We performed a walkthrough and comparisons of the actual percentages of completion of a sample of items from the Schedule of Values to the Application for Payment on an ongoing project. This allowed us to determine that FCPS Construction Management procedures ensure that contractors charge FCPS based on the percentage of work completed as required by the contract. Audit tests also indicated that, generally, their procedures ensure that amounts charged by contractors for change orders are in compliance with contract terms. However, we did find that improvements are needed to ensure that amounts charged by contractors for contractor-owned equipment and overhead, profit, and bond are in compliance with contract terms. We found that insufficient reviews of change orders resulted in overpayments of approximately \$27,600 for contractor-owned equipment and overhead, profit, and bond. In addition, we found that contractors were not required to itemize labor costs for lump sum change orders. We also found that documentation does not identify the total project cost on change orders before approval. Additionally, Notices to Proceed were not readily available and change orders were not consistently classified by type.

### **REVIEW OF CHANGE ORDERS NEEDS STRENGTHENING**

The change order review process requires approvals from FCPS Construction Management’s Senior Project Managers and the Director of Construction Management as well as from their construction managers and architects. The Construction Management Director and the Executive Director of Facilities Services both stated that they rely on the construction managers and architects to perform detail reviews of change orders to ensure that amounts charged are in compliance with contract terms. However, they also agreed that the ultimate responsibility lies with the owner because they are responsible for funding the project. According to the Agreement Between the Owner and Construction Manager, Sections 14.2.4h and 2.3.11, respectively, the construction manager is required to...“provide reviews and recommendations for all change orders” and “...develop and implement procedures for the review and processing of applications by Contractors for progress and final payments.” Additionally, according to the job description, an essential function of FCPS Construction Management’s Senior Project Manager is to “manage project design and construction” which “includes, but is not limited to,...budget...claims” and “approving contractor payments.”<sup>6</sup>

During our audit, we found that FCPS overpaid contractors for contractor-owned equipment on change orders. This occurred because insufficient reviews of change orders did not ensure compliance with the terms of the General Conditions Contract. Section 7.2.3(C) of the General Conditions Contract states that the “total charge to the Owner for the use of equipment owned in whole or in part by the Contractor... shall not exceed seventy-five percent (75%) of the Rental’s Unlimited appropriate duration price for the piece of equipment.” Our sample contained thirteen approved change orders that included equipment rental charges. In eight of these, seven separate

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<sup>6</sup> Change orders are one part of the monthly contractor payment requisition.

contractors did not comply with the contract and overcharged FCPS by approximately \$17,900 for contractor-owned equipment. This amount included approximately \$14,500 in overcharges made by one contractor.

Some of the contractors charged for equipment that was not included in the Rentals Unlimited price book. For example, a contractor charged \$2,040 for the use of a grader, which is not carried by Rentals Unlimited. The FCPS Construction Management Director and Senior Project Manager stated that they did not compare this charge against a source that carried this piece of equipment because they did not believe that would have been in compliance with their contract. However, we found that this grader could have been rented from other locations making it possible to verify the reasonableness of the charge. As a result, FCPS was overcharged about \$270 a day for two and one half days, or \$675 on this one change order. Amending future contracts to reference a national or regional price book such as the Associated Equipment Distributors (AED) Green Book would allow for comparisons of more equipment at reasonable rental rates.

Although we found that 88% of the PCOs we reviewed contained proper overhead, profit, and bond charges, 15 of 123 PCOs sampled, or 12%, contained errors resulting in \$9,725 in overcharges. Section 7.2.3(B) of the General Conditions Contract states that "...Additive Changes must comply with the...Mark-Up schedule for Overhead, profit and bond." Additionally, "...For decreases in the Work or credits, the Contract shall be decreased 100% of the value of the deleted Work plus overhead, profit and bond as applicable for the Contractor and subcontractor(s) work or credits, in accordance with the...mark-up schedule." After we brought this matter to the attention of FCPS Construction Management, they prepared a negative change order to recover \$7,989 of the identified overhead, profit, and bond overcharges. The remaining \$1,736 should also be recovered.

The following table shows that thirteen contractors included in our sample submitted change orders to FCPS Construction Management containing overcharges for contractor-owned equipment and/or overhead, profit, and bond.

<b>SUMMARY OF CHANGE ORDER OVERCHARGES</b>		
	<b>Equipment Overcharge</b>	<b>Overhead, Profit, and Bond Overcharge</b>
Contractor #1	<b>X</b>	
Contractor #2	<b>X</b>	
Contractor #3	<b>X</b>	
Contractor #4	<b>X</b>	
Contractor #5	<b>X</b>	
Contractor #6	<b>X</b>	<b>X</b>
Contractor #7	<b>X</b>	<b>X</b>
Contractor #8		<b>X</b>
Contractor #9		<b>X</b>
Contractor #10		<b>X</b>
Contractor #11		<b>X</b>
Contractor #12		<b>X</b>
Contractor #13		<b>X</b>

As a result, FCPS Construction Management should review the additional change orders that were not included in our sample from these non-compliant contractors and recover any additional overcharges relating to equipment and/or overhead, profit, and bond. They should also perform thorough reviews, in conjunction with their construction managers, of all future change orders to ensure charges are accurate and in accordance with contract terms.

The General Conditions Contract does not specifically describe the supporting documentation or detail that contractors should provide when submitting cost proposals for lump sum changes to the contract. It is also silent regarding the itemization of labor costs on these types of change proposals. Section 7.2.3(4) states only that contractors are required to “include supporting documentation that satisfactorily justifies to the Owner overhead, profit, insurance, sales or payroll taxes and incorporate a detailed quantity survey for all work added and deleted.” During our testing of change orders and discussions with the Director of Construction Management, we noted that the Construction Management Department and their contracted construction managers did not require the contractors to itemize the labor costs or provide detailed line item estimates on their lump sum change proposals.

FCPS Regulation #200-6, “Change Orders to Construction Projects,” however, does require that all changes include “Supporting documentation that itemizes the associated costs.” In addition, best practice guidelines state that “The Contractor will submit a properly itemized Lump Sum Change Order Proposal...This proposal will be itemized for the various components of work and segregated by labor, materials, and equipment...Details to be submitted will include line item estimates showing detailed material and labor quantity take-offs, material prices by item and related labor hour pricing information and extensions...”<sup>7</sup>

To be consistent with their own regulation and to follow best practices, we recommend that FCPS add similar language to their contract. The additional contract language will also provide the Construction Management Department with the means to obtain the properly itemized support necessary to determine the reasonableness of their contractor’s lump sum change proposals.

Accordingly, we recommend that FCPS Construction Management:

**Recommendation 1:** Recover the \$17,900 in equipment overcharges and the remaining \$1,736 in overhead, profit, and bond overcharges.

**Recommendation 2:** Review additional change orders that were not included in our sample from the non-compliant contractors noted during our audit and recover any additional overcharges relating to equipment and/or overhead, profit, and bond.

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<sup>7</sup> Courtenany Thompson & Associates, and R.L. Townsend & Associates, Inc., Effective Auditing of Construction Activity, A Two and One Half-Day Seminar, November 2000.

**Recommendation 3:** In conjunction with their contracted consultants, perform a thorough review of all future change orders ensuring charges are accurate, in accordance with the contract, and required documentation is included.

**Recommendation 4:** Consider amending future contracts to: (a) use national or regional rates, such as the AED Green Book, for the pricing of equipment charges instead of using Rentals Unlimited rates; and (b) be consistent with FCPS Regulation #200-6 and best practices and require that support for PCOs be itemized, specifically describing the detail to be provided for lump sum change orders.

## **CHANGE ORDER APPROVAL POLICY SHOULD BE REVISED**

Under the CM delivery method, PCOs are prepared and processed individually by the prime contractor and construction manager. Oftentimes, a project change involves multiple PCOs and various prime contractors. Related PCOs are not required to be submitted simultaneously. Once PCOs are submitted, the construction managers assign related PCOs the same PCO number on the change order logs. Using these procedures, the total cost of a project change cannot be finalized until all related PCOs have been submitted. However, related PCOs are not always submitted prior to approval. FCPS Construction Management staff states that they are aware of the total cost of a project change prior to approval; although, documented evidence of this is not always retained. Standard internal control practices state, “Internal control and all transactions and other significant events need to be clearly documented, and the documentation should be readily available for examination...All documentation and records should be properly managed and maintained.”<sup>8</sup>

Additionally, the total cost of a project change is not always submitted to the BoE for approval. FCPS Regulation #200-6 “Change Orders to Construction Projects” states that “A PCO that involves expenditures of \$25,000 or more...shall be brought before the board of education for action following review by the Construction Management Department and the Facilities and Finance Committee.” Given this regulation, the BoE is only made aware of individual PCOs greater than \$25,000 and may not be made aware of the total cost of a project change. If the owner requests an addition under the construction management delivery method, PCOs are submitted individually by prime contractor. Hypothetically, if all related PCOs for this addition total \$100,000, but involved numerous prime contractors with change orders that were individually less than \$25,000, the current policy would not require that the BoE be informed and would not give them approval authority over the total cost of the addition.

Although it is not required, we found that one of the construction managers from a project within our sample created a cover page for each project change. The cover page listed a description of the project change as well as a breakdown of each of the contractors involved in the change and

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<sup>8</sup> United States General Accounting Office (now the United States Government Accountability Office). 1999. *Standards for Internal Control in the Federal Government*, [November, 1999]. Washington, D.C.: Government Accountability Office., pg.15.

their proposed amounts. It also included the total cost of the project change so that this amount was available to management during the review and approval process. In our opinion, this is a good management tool.

Accordingly, we recommend that:

**Recommendation 5:** FCPS Construction Management require their construction managers to submit the contractors' total proposed cost of a project change for review prior to approving any potential changes.

**Recommendation 6:** FCPS determine if the "Change Orders to Construction Projects" policy should be revised to include requirements for Board approval based on the total cost of a project change.

## **FCPS CONSTRUCTION MANAGEMENT SHOULD MAINTAIN NOTICES TO PROCEED AND CLASSIFY AND TRACK CHANGE ORDERS**

For time and material change orders, we found that FCPS Construction Management's standard General Conditions Contract does not contain a requirement to issue Notices to Proceed. As a result, 25 out of 47, or 53%, of the time and material change order files we reviewed did not contain written Notices to Proceed. Best practice standard contract guidance states, "directions to the Contractor by the Owner shall be confirmed in writing by a "Notice to Proceed on Changes" letter within seven (7) calendar days."<sup>9</sup>

Discussions with FCPS Construction Management staff indicated that contractors could have been notified to proceed via email. Change orders are processed manually and emails are not maintained in the change order files, but are saved on the network. Notices to Proceed, however, are not saved in a separate file by change order or titled in such a manner that would allow them to be easily located when necessary. According to FCPS Construction Management staff, it is difficult to locate a particular email because correspondence on a project is voluminous and all emails for an entire project are filed together. At times, disputes may arise regarding issues such as scope of work, budget, timeline, and/or completion date, etc. Therefore, FCPS Construction Management should have Notices to Proceed readily available by change order in the event of disputes between FCPS Construction Management and their contractors.

FCPS Construction Management also allows their construction managers and/or architects to classify change orders in accordance with their own procedures resulting in inconsistent change order classifications. We found that one of the construction managers used code issue, design, field condition and owner requested change order classifications, while another used those same classifications plus unforeseen conditions and contractor suggestions. A third construction

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<sup>9</sup> Courtenany Thompson & Associates, and R.L. Townsend & Associates, Inc., Effective Auditing of Construction Activity, A Two and One Half-Day Seminar, November 2000.

manager did not use any defined classifications, but instead listed the responsible party for the change order.

In our opinion, using consistent classifications such as errors and/or omissions, unforeseen conditions, and owner/user requests would give the Construction Management Department the capability to determine total dollar amounts and percentages by type of change order. This would allow them to follow-up on error and/or omission change orders where cost recoveries may exist. It would also give them the ability to set parameters to limit owner/user requests as needed.

We also believe the use of an automated construction management project system would be a more efficient way to maintain and track project data, including Notices to Proceed. Change orders could be automatically classified by type and all correspondence related to the project could be stored in the system. Additionally, staff, construction managers, and architects would have instant access to change order logs and would also be able to track critical path progress and the budget.

Accordingly, we recommend that FCPS Construction Management:

**Recommendation 7:** Strengthen the General Conditions Contract to include a requirement to issue Notices to Proceed.

**Recommendation 8:** Develop a policy to maintain Notices to Proceed by change order and file them so that they are readily available in the event of disputes between FCPS Construction Management and their contractors.

**Recommendation 9:** Develop procedures to consistently classify change orders by type.

**Recommendation 10:** Continue efforts to assess the cost and feasibility of implementing an automated system to help maintain and track project data, including Notices to Proceed and change orders.

## V. Summary of Response

On June 3, 2011, FCPS's Executive Director of Facilities Services provided a written response to our June 1, 2011 draft report and agreed with our recommendations with the exception of 4(b). While some recommendations have already been implemented, the remaining recommendations are to be implemented by January 1, 2012. See Attachment for FCPS' written response.

Regarding Recommendation 4(b), FCPS acknowledged the requirements of Regulation 200-6. However, they noted that their contract allows for negotiations that must be done quickly to protect project schedules and the budget. They also noted that when, in the limited

circumstances, PCOs are approved in this way they do not require detailed descriptions and backup in advance of the work being performed. FCPS will seek to resolve the inconsistency between their contracts and Regulation 200-6 by January 1, 2012.

## VI. Auditor Comment

FCPS' response did not specifically address amending future contracts to require that support for PCOs be itemized. However, based on a subsequent discussion with the Executive Director of Facilities Services, FCPS intends to take the matter to the BoE for a decision to either amend future contracts and/or Regulation 200-6. While we recognize that original contractor estimates can be negotiated, we continue to recommend that FCPS' contracts be amended to require that the original proposals include detailed itemization of all labor and material costs.

June 15, 2011

*Interagency Internal Audit Authority*

Interagency Internal Audit Authority

## FACILITIES SERVICES DIVISION

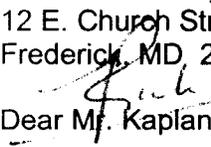
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June 3, 2011

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12 E. Church Street  
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Dear Mr. Kaplan:

This letter is in response to the Draft Frederick County Public Schools Construction Management Phase 1 audit report prepared by the Frederick County Internal Audit Division and dated June 1, 2011.

We are pleased that, in general, audit tests indicate that our procedures ensure that amounts charged by contractors for change orders are in compliance with contract terms with only a few minor exceptions associated with equipment rental, overhead and profit. The FCPS Facilities Services Division strives to implement best construction management practices and provide first class stewardship of the taxpayers' money.

We have carefully reviewed your ten recommendations with regard to strengthening our change order procedures and approval process, and offer the following comments:

**Recommendation 1:** Recover the \$17,900 in equipment overcharges and the remaining \$1,736 in overhead, profit and bond overcharges.

*FCPS Response: FCPS agrees. We are in the process of recovering overcharges from all open contracts. This will amount to \$22,897.17. This amount represents overcharges recovered from those contractors in the audit sample as well as additional charges from the non-compliant contractors that were not included in the sample. Recovery from closed contracts is not feasible.*

**Recommendation 2:** Review additional change orders that were not included in our sample from the non-compliant contractors noted during our audit and recover any additional overcharges relating to equipment and/or overhead, profit and bond.

*FCPS Response: FCPS agrees. All additional change orders from the non-compliant contractors have been reviewed. Identified overcharges were recovered and are reflected in the dollar amount included in response to Recommendation 1.*

**Recommendation 3:** In conjunction with their contracted consultants, perform a thorough review of all future change orders ensuring charges are accurate, in accordance with the contract, and required documentation is included.

*FCPS Response: FCPS agrees and will address the issues identified by this audit. We will modify the Change Order cover page to ensure standard submission of information and consistent review of all change orders. The Change Order cover page will be included in all newly executed AIA and CM contracts after January 1, 2012.*

**Recommendation 4:** Consider amending future contracts to: (a) use national or regional rates, such as the Associated Equipment Distributors (AED) Green Book, for the pricing of equipment charges instead of using Rentals Unlimited rates; and (b) be consistent with FCPS Regulation #200-6 and best practices and require that support for PCOs be itemized, specifically describing the detail to be provided for lump sum change orders.

*FCPS Response: FCPS agrees with part (a) of this recommendation. We have purchased the AED Green Book and will modify our standard contract to reference the AED Green Book as well as to better define our allowable costs.*

*With respect to part (b) of this recommendation, we acknowledge the requirements of Reg. 200-6 and comply with them in nearly every case. However our AIA contracts also allow for negotiated costs for PCO's that must be done quickly in order to protect project schedules and budget and that address a specific indentified problem. In the limited circumstances that PCO's are approved in this way, we do not require detailed descriptions and backup in advance of the work being performed. We will seek to resolve the inconsistency between our contracts and Regulation 200-6 by January 1, 2012.*

**Recommendation 5:** FCPS Construction Management should require their construction managers to submit the contractors total proposed cost of a project change for review prior to approving any potential changes.

*FCPS Response: FCPS agrees. Whenever possible calculate total costs for a PCO from all contractors prior to approving change orders. We also agree that the FCPS will use the CM estimate based on the contractors total proposed cost when project schedule and cost are primary considerations.*

**Recommendation 6:** FCPS determine if the "Change Orders to Construction Projects" policy should be revised to include requirements for Board approval based on the total cost of a project change.

*FCPS Response: The FCPS Construction Department will consult with our Board of Education by end of calendar year to determine their interest in revising the policy.*

**Recommendation 7:** Strengthen the General conditions Contract to include a requirement to issue Notices to Proceed.

*FCPS Response: FCPS agrees. Current practice is to authorize changes before work begins. This is primarily accomplished by email. We agree that that the current AIA documents need to be strengthened to match current practices. In addition, as provided in #8 below, we will ensure that Notices to Proceed and backup will be filed in the FCPS project files along with the change order. We will modify our current AIA contracts to implement these changes for all newly executed contracts after Jan 1, 2012.*

**Recommendation 8:** Develop a policy to maintain Notices to Proceed by change order and file them so that they are readily available in the event of disputes between FCPS Construction Management and their contractors.

*FCPS Response: FCPS agrees. FCPS will improve procedures to ensure that Notice to Proceed documents are filed with the Change Order.*

**Recommendation 9:** Develop procedures to consistently classify change orders by type.

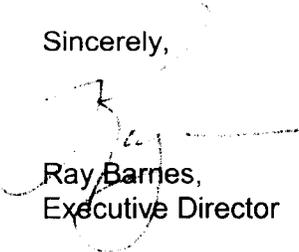
*FCPS Response: FCPS agrees. FCPS will establish standard change order classifications and include them in all newly executed AIA and CM contracts after January 1, 2012.*

**Recommendation 10:** Continue efforts to assess the cost and feasibility of implementing an automated system to help maintain and track project data, including Notices to Proceed and change orders.

*FCPS Response: FCPS agrees. We are currently evaluating several software products that will provide an automated process of project management including design review, construction submittal review, PCO and CO review, etc. FCPS will implement the selected software as funding becomes available.*

We are available to discuss our responses with you and look forward to the approval of the report by the Interagency Internal Audit Authority.

Sincerely,



Ray Barnes,  
Executive Director

- Cc: Dr. Linda Burgee, FCPS, Superintendent  
Ms. Kelly Hammond, Frederick County IIAA  
Ms. Genetta Miller, Frederick County IIAA  
Ms. Elizabeth Pasierb, FCPS, Facilities Services  
Mr. Joe Dattoli, FCPS, Facilities Services  
Mr. Hal Keller, FCPS, Fiscal Services  
Ms. Leslie Pellegrino, FCPS, Fiscal Services  
Ms. Amanda Baugher, FCPS, Fiscal Services  
Ms. Melissa Rollison, FCPS, Fiscal Services