

**FREDERICK COUNTY
INTERAGENCY INTERNAL AUDIT AUTHORITY**

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

**Report #12-03
September 21, 2011**





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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 objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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 objectives. 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 Senior Project Managers develop and monitor project schedules, secure required project/plan approvals, and manage project design and construction including scheduling, quality control, budget, staff coordination, FCPS use and occupancy, and

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project closeout and claims. The Project Managers assist the Senior Project Managers in design, review and field supervision; monitor and report on project schedule and budget statuses; enforce BOE policies, procedures, and guidelines in the field; and, serve as the FCPS representative to the contractors, architects and engineer.

The Construction Management Department utilizes the construction management (CM) or general contractor (GC) delivery method depending 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 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.

The construction of the FCPS Central Office, however, was not managed using a CM or GC delivery method. Instead, it was managed by a Special Projects Planner who reported directly to the Executive Director of Facilities Services. This building was constructed under the design/build¹ method of construction, and was not paid for from the Construction Fund. Instead, it is being paid for through a lease lease-back agreement² from the Operating Fund.

During the audit period, the Facilities Services Division was managing construction projects for four schools and the Central Office, which had a total budget of approximately \$230 million.

FCPS Central Office



Walkersville Elementary School



Photographs provided by FCPS

¹ Design-build is a method to deliver a project in which the design and construction services are contracted by a single entity.

² The lease lease-back agreement is an arrangement with a private sector lender to purchase land, 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.

III. Objectives, Scope and Methodology

At the end of the planning phase of this audit, we decided to divide the audit into two phases. Phase I's objective was to determine if FCPS' procedures ensured that amounts charged by contractors were in compliance with contract terms. We issued the report on Phase I in June 2011. This report focuses on the objectives of Phase II, which are to determine if FCPS procedures ensure that the projects are 1) completed on time; 2) within budget; 3) constructed in accordance with contract specifications and laws/regulations; and 4) properly closed out. The scope of the audit included FCPS capital construction projects between contract award and substantial completion as of August 31, 2010. These projects included Linganore High, Oakdale High, Walkersville Elementary, West Frederick Middle, and the Central Office. We also reviewed Urbana Middle, Middletown Primary and New Market Elementary, the projects that have closed since July 1, 2008.

To determine if FCPS' procedures ensure that projects are completed on time,³ we reviewed estimated and actual completion dates and determined if any slippage delayed an opening of a school. For Linganore High, Oakdale High and West Frederick Middle, which were CM projects, we randomly selected a sample of three contractors for each project. For Walkersville Elementary, the only GC project of the five we reviewed, we compared the estimated schedule for each phase per the contract to the actual completion date noted on the Certificate of Substantial Completion. Since the construction of the Walkersville Elementary addition was behind schedule, we performed additional testing to determine why delays occurred, the extent of the delays, and actions taken and planned by FCPS' Construction Management to hold the contractor accountable.

Walkersville Elementary School Mid-Construction



Photograph provided by FCPS

³ On time is defined as having received Use & Occupancy Certificates allowing the building to be used for its intended purpose (opening of school) and achieving Substantial Completion within contracted deadlines.

For the Central Office, we compared the Certificate of Substantial Completion date to the completion date in the contract. We asked FCPS' Construction Management staff to explain the reasons for any differences between estimated and actual completion dates.

To determine if FCPS' procedures ensured that the five projects were completed within budget, we compared total expenditures to the approved budgets, including any budget amendments.

To determine if FCPS' procedures ensured that projects were constructed in accordance with contract specifications and laws/regulations, we sampled six internal inspection reports and three external inspection reports to ensure that work performed passed any necessary inspections. We reviewed progress meeting minutes or third party inspection reports to determine if corrective action was taken on issues identified by FCPS' Construction Management staff, their contractors, and/or their architects.

To determine if projects were properly closed out, we reviewed FCPS' close-out procedures and obtained a list of contracts awarded to sub-contractors for Urbana Middle, Middletown Primary and New Market Elementary. We selected the five largest contracts for each school, testing 15 out of a total of 51 close-out files.⁴ We tested compliance with the contract terms in Article 6 (Final Payment) and FCPS's written close-out procedures.

IV. Audit Results

Our audit found that FCPS' procedures, which include specific contract terms, ensure that projects are constructed on time; within budget; in accordance with contract specifications and laws/regulations; and, are properly closed-out. Their policies, procedures, and contract terms which include on-site monitoring; the use of performance bonds; the ability to backcharge⁵ contractors and charge liquidated damages helps protect FCPS against contractors who fail to comply with contract terms or complete projects on time.

As shown on the following chart, our audit found that all FCPS projects reviewed were completed within budget and, with the exception of the Walkersville Elementary School project, all projects were completed on time.

⁴ Contract close-out documents included Final Release of Liens, As-Built Plans or Specs, Warranties and/or Guarantees, Waiver of Debts and Claims, Completion of Punch List, and FCPS Evaluations. Additional documentation required per FCPS' procedures included Certificate of Substantial Completion, Surety Company Consent, Use & Occupancy Permit, and Operation & Maintenance Manuals.

⁵ Billings for work performed or costs incurred by FCPS that, in accordance with the agreement, should have been performed or incurred by the contractor. Construction Glossary from Home Building Manual. Web. 23 Aug. 2011. <<http://www.HomeBuildingManual.com>>.

FREDERICK COUNTY PUBLIC SCHOOLS TESTING FOR ON TIME AND WITHIN BUDGET AS OF JUNE 30, 2011⁶					
Project	Estimated/ Actual Completion Date (Month/Year)	Project Completed in Time for School Opening	Budget	Total Expenditures	Project Within Budget
Linganore High School (Tear Down & Rebuild)	6/10 & 6/10	Yes	\$80,348,000	\$74,381,917	Yes
Oakdale High School (New Construction)	6/08 & 7/08	Yes	73,864,000	68,862,741	Yes
Walkersville Elementary School (Addition)	12/10 & 2/11	No	13,563,000	10,779,042	Yes
West Frederick Middle School (Modernization)	8/10 & 8/10	Yes	45,140,657	38,399,963	Yes
Central Office (New Construction)	4/10 & 6/10	N/A ⁷	17,516,607 ⁸	17,470,557	Yes
Totals			\$230,432,264	\$209,894,220	

Substantial completion on the Walkersville Elementary School project slipped only two months from December 29, 2010 to February 24, 2011. However, during the project, FCPS was forced to delay the transition of the kindergarten students from Glade Elementary and increase their on-site monitoring to ensure that the contractor continued to complete the work in accordance with contract terms.

The Architect, in a letter dated June 14, 2010, brought significant concerns to the attention of the Director of Construction Management who stated that he forwarded the letter to the bonding company. The Architect cited that “The construction at Walkersville Elementary has been in the process for approximately one year with numerous concerns regarding the ability of the GC to deliver a quality project within the deadlines established in the contract documents.” In addition, he stated that “The GC has missed the specified substantial completion dates for phases 1A [mechanical] and 1B [electrical], and appears to be approximately 60 calendar days behind schedule for delivery of the Classrooms and Gymnasium (Phase 1C). FCPS has already made plans in advance to delay the transition of kindergarten students from Glade Elementary to Walkersville with the chance that the work is not completed and ready for occupancy.”

To address issues relating to the quality of work and slippage during the project, FCPS hired their own sub-contractors to speed up the timeline and ensure that the work was completed in accordance with the contract specifications. In addition, FCPS used their own inspector to be on

⁶ Unaudited June 30, 2011 data was provided by FCPS.

⁷ The Central Office was not a school project; therefore, it was not crucial to open in April. The schedule was verbally extended by the Special Projects Planner and the Executive Director of Facilities Services during progress meetings. This was due to delays in obtaining permits from the City of Frederick and unprecedented winter snow storms.

⁸ The Central Office project’s initial budget was \$17,300,000 plus interest earned of \$216,607.

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site full-time to monitor the contractor’s work. According to the Director of Construction Management, daily inspectors are not normally needed full-time on GC projects of that size.

The following chart shows slippages by phase of the project:

Walkersville Elementary-Analysis of Delays by Phase:

Walkersville Elementary- Phases		Completion Date Per:		
		Contract	Certificate of Substantial Completion	Use & Occupancy Certificate
1A	Electrical	12/28/2009	N/A	2/10/11
1B	Administrative Area	5/3/2010	7/3/2010	7/2/10
1C	Classrooms and Gymnasium	8/9/2010	11/3/2010	2/10/11
1D	Mechanical	8/9/2010	N/A	2/10/11
2A	Art and Music Rooms	9/6/2010	11/3/2010	2/10/11
2B	Cafeteria/Kitchen Area	12/29/2010	2/24/2011	2/24/11

FCPS’ Construction Management took additional actions to hold the contractor accountable for issues related to substandard work and schedule slippages in accordance with their policies, procedures and contract terms. For example, the Director of Construction Management drafted a letter to the bonding company to officially notify them of the contractor’s failure to resolve change order issues, perform work required by the contract, and pay their subcontractors for work performed. FCPS provided the draft to the contractor. FCPS also plans to charge the contractor for expenses they incurred for work required by the contract. Additionally, FCPS intends to charge the contractor liquidated damages in accordance with Section 3.4 of the contract. Most significantly, FCPS Construction Management has not reduced retainage and continues to hold the last payment until all work is finished, subcontractors have been paid, and the contractor supplies the Release of Liens, Waiver of Surety and Claims, and other required closeout documents.

In our opinion, the actions taken and planned by FCPS Construction Management to hold the contractor accountable for non-compliance with contract terms sufficiently protect FCPS’ interests. Accordingly, no recommendations are being made.

FCPS’ response is attached.

Interagency Internal Audit Authority

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September 21, 2011

FCPS Construction Management – Phase II

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Ray Barnes, Executive Director
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September 8, 2011

Richard Kaplan, Director
Frederick County Internal Audit Division
North Market Street
Frederick, Md. 21701

Re: FCPS Construction Management Audit, Phase II

Dear Richard,

This office is in receipt of the 8/29/11 Draft Report in connection with the above referenced audit. This report represents the second step in what has been a comprehensive evaluation of our FCPS construction management program. This program is managed by the FCPS Facilities Services Division with support from the FCPS Fiscal Services Division.

We are very pleased with the conclusions of the Phase II report. This report states in part, that *"FCPS procedures, which include specific contract terms, ensure that projects are constructed on time; within budget; in accordance with contract specifications and laws/regulations; and, are properly closed out."* Our staff has worked very diligently to reach this level of performance, and we are gratified by this recognition by your agency.

Since the Phase II Report has no recommendations for changes to the construction management program, we have no additional comments at this time.

On behalf of the FCPS Facilities Services staff and the Fiscal Services staff, we appreciate your efforts in connection with this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Ray Barnes", is written over the word "Sincerely,". The signature is fluid and cursive.

Ray Barnes

Cc: Leslie Pellegrino, Executive Director, FCPS Fiscal Services Division
Joe Dattoli, Director, FCPS Construction Management Department
Beth Pasierb, FCPS Facilities Planner