### CITY OF CHARLOTTE OFFICE OF INTERNAL AUDIT

### *MEMORANDUM*

To: Sabrina Joy-Hogg, Deputy City Manager June 20, 2019

From: Greg McDowell, City Auditor

Re: CATS Blue Line Extension – RSM Report

### **Background**

The City of Charlotte's Internal Audit Department engaged the consulting firm RSM US LLP (RSM) to review the CATS Blue Line Extension (BLE) construction project. In May 2018, Internal Audit began a concurrent review of CATS BLE Professional Services agreements, focusing on the HNTB contract. The results of that audit were addressed in our report issued March 22, 2019.

RSM's audit, beginning in July 2018, focused on the adequacy of controls over construction management processes and controls in the following areas:

- ➤ Incentive payments and liquidated damages
- > Independent cost estimates and change orders
- > Schedule management
- > Construction management fee negotiation
- Project closeout as executed by construction management consultant

<u>Summary</u> – The attached RSM report details the results which followed the identification and testing of more than 20 key control mechanisms. Key points include the following:

- Current control environment of BLE program is strong, as project is winding down.
- Management processes are well-defined.
- Management has performed adequate tracking and assessment of liquidated damages.
- Project closeout has moved slower than desired; delays have been extensive as related to punch lists, final change orders and turnover documents.
- Strict retainage requirements of NCDOT and City contracts may have limited financial incentive for contractors and subcontractors to complete closeout activities.
- Potential cost avoidance could be achieved in the future by increasing the level of documentation provided by contractors and subcontractors in support of proposed costs.
- The City's current independent cost estimate (ICE) and change order evaluation process meets requirements of applicable guidance (e.g., Federal Acquisition Regulations), but could be tightened through increased scrutiny of source documents during the proposal process.

#### Actions Planned

In response to the March 2019 Internal Audit Report, CATS and EPM agreed to utilize City audit staff or outside expertise to supplement contract negotiation efforts in the future. Internal Audit will consider the RSM observations related to Retainage and Change Order/Contingencies, when we have the opportunity to provide input.

## INTERNAL AUDIT REPORT

CATS Blue Line Extension (BLE)



**April 2019** 



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### Transmittal Letter

April 11, 2019

Mr. Greg McDowell, City Auditor City of Charlotte, North Carolina 600 East 4<sup>th</sup> Street Charlotte, NC 28202

Pursuant to our Master Services Agreement dated May 26, 2016, and Statement of Work dated July 10, 2018, we present our BLE Audit Report. This report is structured in the following sections:

Objectives, Scope and Approach	This section includes the processes within the scope of our audit, the approach taken to performing our work, and the specific procedures we performed.							
Executive Summary	This section provides highlights and key takeaways resulting from our audit.							
Detailed Results	This section includes the details of each observation identified during our procedures.							

In connection with the performance of these services, we have not performed any management functions, made management decisions, or otherwise performed in a capacity equivalent to that of an employee of the City of Charlotte.

We would like to thank those involved in assisting our team in connection with this review.

Respectfully Submitted,

RSML US LLP

RSM US LLP



## Objectives, Scope and Approach

### **Scope and Objective**

We worked closely with the City's Internal Audit team to perform an internal audit of the CATS BLE construction project. The objective of the audit was to determine if the City has established adequate controls over certain construction management processes. The audit included:

- · Review of the process and controls for incentive payments and liquidated damages
- Review of the process and controls for independent cost estimates / change orders
- · Review of the process and controls for schedule management
- Review of the process and controls for construction management fee negotiation
- · Review of the process and controls for project closeout as executed by construction management consultant

### **Approach**

#### Risk Assessment

The risk assessment process included:

- · Interviews with CATS personnel
- · Review of BLE project data, including:
  - o Contract agreements / methodology
  - Contract values



# Objectives, Scope and Approach (continued)

### Risk Assessment (continued)

- Change orders
- o Liquidated damages & settlement agreements
- o Days of delay
- o Overhead / Labor rates
- · Co-development of audit scope with City Auditor and team

### CATS BLE

RSM performed the following procedures:

- Schedule controls:
  - o Interviews with members of CATS team
  - o Mapping of current schedule management processes / controls
  - o Risk and control matrix development
  - $_{\odot}$  Selection of sample historical periods for schedule control testing / validation
  - o Reporting of results
- Independent cost estimating ("ICE"):
  - o Meetings and documentation requests to identify population of change orders where ICE's are applicable
  - $\,\circ\,$  Risk based sample selection of historical change orders / ICEs



# Objectives, Scope and Approach (continued)

- Independent cost estimating ("ICE") (continued):
  - o Testing of ICE for adherence to industry practice, sufficient level of detail, accuracy, and reasonableness
  - Reporting of results
- Incentive payments and liquidated damages:
  - o Identification of key / significant BLE contracts with incentive payment provisions and / or liquidated damages ("LD")
  - o Risk based sample selection of contracts to perform independent recalculation of incentives and / or LDs
  - o Reporting of results
- Program management project closeout:
  - o Interviews with members of CATS team and HNTB team to understand process for project closeout
  - o Mapping of current closeout processes / controls
  - $_{\odot}$  Identification of closed project population
  - o Selection of sample closed projects for analysis
  - o Timeline development and process adherence testing for sample projects
  - o Receipt validation of turnover / as-built documentation
  - $\circ \ \text{Reporting of results}$



# **Executive Summary**

### **Procedures Summary**

During our audit, we obtained access to the City's project management platform eBuilder, which houses most of the project documentation related to the BLE program. Through the use of eBuilder and assistance from the CATS management team, we were able to identify and test supporting documentation for more than 20 key control mechanisms across the various processes within our scope. Our testing procedures included sampling of control activities based upon their frequency, judgmentally diversifying our samples across the various projects within the BLE program. Our samples included:

- 12 weeks of key schedule controls
- 4 months of key schedule controls
- 25 change orders / contingency usages
- 5 projects closeout controls
- 3 projects incentives and liquidated damages recalculated

### **Results Summary**

The current control environment for the BLE program is strong, which is somewhat expected considering the project is winding down. Processes for managing construction activities and project changes are well defined, in some cases are automated within eBuilder. Management has performed adequate tracking and assessment of liquidated damages (LD) to date, and continues to actively record LDs for application to final claims / settlements.

Management indicated project closeout activities are moving slower than desired, which was confirmed during our procedures. We noted extensive delays in the scheduled timing for punch lists, final change orders, turnover documents, etc. This issue may have been exacerbated by strict retainage requirements of NCDOT and the City's contracts, limiting financial incentive for contractors and subcontractors to complete closeout activities. This, as well as ideas for creative fee structuring to increase these incentives have been expanded upon in Observation #1 below.

While testing change orders, we noted the potential for future cost avoidance by increasing the level of documentation provided by contractors and subcontractors in support of the proposed costs. The City's current ICE and change order evaluation process conforms to the requirements of applicable guidance like the FAR, but could be tightened through increased scrutiny of source documents during the proposal process.







The pages that follow contain the observations from our procedures deemed critical enough to bring to the City's attention. Each observation has been assigned a risk rating, pursuant to the chart and definitions below. These rating are judgmental, and based upon our interpretation of the facts and circumstances of each issue, and our experience with comparable clients and programs.

Observation Risk Rating Definitions								
Rating	Definition							
Low	Current state environment presents a low risk (i.e., impact on internal control environment or business operations) to the organization for the identified control and/or is of low importance to business success/achievement of goals.							
Moderate	Current state environment presents a moderate risk (i.e., impact internal control environment or business operations) to the organization for the identified control reviewed and/or is of moderate importance to business success/achievement of goals.							
High	Current state environment presents a high risk (i.e., impact, internal control environment or business operations) to the organization for the identified control and/or is of high importance to business success/achievement of goals.							



#### **Observations**

Observation Rating

1. Retainage

Moderate

During our testing of closeout activities, CATS management indicated the process for collecting all required as-built documentation, completing punch list items and closing out the project was taking longer than previously scheduled. While we noted there are many factors which contribute to achievement of final closeout, retainage (or the withholding of funds) is an approach widely used by construction owners throughout the country. The amount of retainage an owner can hold back depends on that state's respective statutes. Most states (including NC) limits retainage to 5% when the project is 50% complete. Final balances held in retainage are released at the owner's discretion, typically in conjunction with receipt of substantial completion and closeout submittals from each trade contractor. To better understand how CATS is withholding retainage from its contractors on the BLE project, we performed a review of retainage as presented on the most recent pay application for 5 of the major construction contracts in the program:

Project	Contract Sum to Date	Closeout % Complete*	Estimated Completion Date	Total Contract Retainage Held	Contract Retainage %	Prime Contract Retainage
JW Clay Parking Garage	\$28,316,224	63.33%	8/18/2018	\$30,000	.11%	\$22,892
Sugar Creek	\$23,846,850	56.67%	7//31/2018	\$291,837	1.22%	\$40,350
Civil A***	\$126,062,275	39.58%	2/21/2019	\$1,650,000	1.31%	**
Civil B/C	\$146,960,754	31.71%	7/2/2018	\$1,278,198	.87%	**
Track & Systems***	\$122,379,052	25.42%	11/29/18	\$5,822,845	4.76%	**

<sup>\*</sup> Closeout percentage of completion was computed using eBuilder data and the respective project's closeout checklist.

<sup>\*\*\*</sup> Civil A and Track & Systems have not yet reached substantial completion, and therefore are not classified by management as being in the closeout phase.





<sup>\*\*</sup> Unit price contract, pay application does not provide visibility into prime vs subcontractor retainage balances, only contract totals.

#### **Observations**

Observation Rating

### 1. Retainage

Moderate

City staff, their vendors, and RSM performed in depth review of the retainage history on the JWC Clay Parking Garage project to better understand how retainage was released. Management and their 3rd party design professional noted that retainage was released in compliance with the contract, after substantial completion was reached in late 2017. Management and their vendor teams asserted to us that As-Builts had been received and final punch list items had been completed prior to the draw down of retainage from \$572,547 to \$30,000. In an attempt to validate this assertion, RSM reviewed the closeout checklist for the project as of June 2018, which included uncompleted items pertaining to the receipt of As-Builts (which was yet to be delivered in CAD file form), as well as the consent from the Surety to release retainage (which management indicated was to be obtained at final payment). Regardless, the \$30,000 of financial incentive that remained in the contract was not sufficient to expedite the presentation of a final change order and pay application, which has taken more than 17 months (duration from substantial completion to final payment):

- Substantial completion August 2017
- Final pay application submitted October 2018
- Final pay application approval by CATS January 2019

We understand the strict guidelines and limitations that NCDOT and many other states apply to the release of retainage. We also understand that statutes in Virginia and Florida are more flexible, and while they allow for 5% to be held throughout the project, they generally advocate for as little retainage to be held as possible.

Considering these limitations, we encourage the City to consider the application of financial incentive/discincentive strategies, to aid in closing out future jobs in a timely manner. To mitigate future projects from the risk of delayed closeout, we would advise including language in your contracts that tie financial incentives toward timely receipt of a final, accurate, pay application. The US Department of Transportation has provided some interesting guidance on incentive/disincentive strategies (<a href="https://www.fhwa.dot.gov/programadmin/contracts/etgpayment.cfm#s05">https://www.fhwa.dot.gov/programadmin/contracts/etgpayment.cfm#s05</a>), and one or more of these could be adopted as an approach to incentivizing more timely close out of future projects.

New approaches might include scheduled draw downs of the construction manager's fee at various stages of the project, with a portion tied to final payment. In practice, we have seen construction management fee broken down into various components including a portion of fee which was paid out proportionately over a warranty period.





#### **Observations**

Observation Rating

2. Change Order / Contingency Review

Moderate

During our testing of change management controls, we noted BLE contractor's did not consistently provide invoices, quotes or other 3<sup>rd</sup> party supporting documentation to evidence the reasonableness of pricing included within proposed change orders or contingency usages. In 10 of 19 change events we reviewed, the contractor's proposal included a cost breakdown with unit prices for equipment, but no 3rd party documentation was provided in support of the equipment rates used. Further, in 12 of 19 change events we reviewed, the contractor's proposal included a cost breakdown with rates and quantities for labor, but no payroll documentation was provided in support of the rates used.

As a means assessing the reasonableness of change event pricing the City's Construction Management Consultant (CMC) prepares an independent cost estimate whenever a change event is budgeted to have an impact to the contract of greater than \$10,000. Further, if the change event will increase the contract value by more than \$100,000, it must be approved by the City's Change Control Board. It is our understanding that the ICE process uses historical City pricing and aggregated industry pricing data (ex. RSMeans, Blue Book, Green Book, Rental Yard, etc.) to develop an independent estimate for the work. If the ICE is greater than, or within a reasonable range of the contractor's proposal, the City will accept the proposal.

RSM performed detailed testing to verify that an ICE was prepared for each change order, that the change order was properly incorporated into the pay application, and that review and approval followed the appropriate workflow process (including Control Board approval when applicable). An ICE was prepared for each of the samples we selected evidencing the control is operating.

While we understand the use of historical, RSMeans, Blue / Green Book, Rental Yard, and other generic market data can provide a practical expedient to the change process, obtaining a quote or an invoice from the contractor actually performing the work provides the most reliable pricing information.

We recommend the City require contractors to support unit prices used in change proposals with 3<sup>rd</sup> party documentation, or only use rates that were previously agreed upon in their contract.



RSM US LLP 4725 Piedmont Row Drive Suite 300 Charlotte, North Carolina 28210 P: (252) 672 7722

+1 800 274 3978 www.rsmus.com

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