



**BALTIMORE CITY INFORMATION TECHNOLOGY**

**BIENNIAL PERFORMANCE AUDIT REPORT**

**Fiscal Years Ended June 30, 2018 and 2017**

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# CITY OF BALTIMORE

JOAN M. PRATT, CPA  
Comptroller



## DEPARTMENT OF AUDITS JOSH PASCH, CPA

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Honorable Joan M. Pratt, Comptroller  
And Other Members  
Of the Board of Estimates  
City of Baltimore, Maryland

### Executive Summary

We conducted a Biennial Performance Audit of selected performance measures of the Baltimore City Information Technology (BCIT) for the fiscal years (FY) ended June 30, 2018 and 2017. The objectives of our performance audit were to:

- Determine whether BCIT: (1) met its performance measure targets; and (2) has adequately designed internal controls related to the selected performance measures.
- Follow-up on prior findings and recommendations included in BCIT's previous performance audit report, dated June 28, 2018.

According to the Agency Detail Board of Estimates Recommendations (Budget Book), two of the four selected performance measures met their targets. However, we were not able to validate the accuracy of the actual results of these performance measures because all of BCIT's supporting documents were located on personal computer hard drives, which were confiscated during the May 2019 ransomware incident and for which there was no backup. Also, we were not able to verify the implementation status of prior findings and recommendations because BCIT did not provide any information and records as to the implementation status of the prior findings (See Section II). Additionally, we observed that the performance measure of "number of calls received in 311" does not reflect the productivity of the 3-1-1 Call Center.

We recommend the Chief Information Officer of BCIT:

- Require that the Services 804 and 805 periodically: (1) backup data; and (2) perform tests and recovery of historical and backup data.
- Modify the performance measure such as the percentage of calls answered by 3-1-1 (the number of calls answered by 3-1-1/the number of calls received by 3-1-1) to reasonably measure 3-1-1's productivity in serving 3-1-1 service requests.

Respectfully,

A handwritten signature in black ink that reads 'Josh Pasch'.

Josh Pasch, CPA  
City Auditor  
Baltimore, Maryland  
September 4, 2019

## Background Information

### I. Selected Performance Measures

We judgmentally selected four performance measures of BCIT, which are summarized as follows.

Table I

Summary of Selected Performance Measures' Targets and Actuals as Reported in the Budget Books for Fiscal Years 2018 and 2017

| Service          | Performance Measure   | 2018    |         | 2017    |         |
|------------------|---|---------|---------|---------|---------|
|                  |   | Target  | Actual  | Target  | Actual  |
|                  | Average time to answer a 311 call (seconds)   | 30      | 26      | 30      | 26      |
| 804 <sup>1</sup> | Number of calls received in 311   | 890,000 | 709,276 | 890,000 | 748,439 |
|                  | Percent of 311 calls answered within 60 seconds                                     | 90      | 91      | 90      | 92      |
| 805 <sup>2</sup> | Percent of Help Desk response times for critical priority tickets within 15 minutes | 99      | 97      | 99      | 96.5    |

**Note:** <sup>1</sup> 3-1-1 Call Center is responsible for the service 804.

<sup>2</sup> Enterprise Information Technology Delivery Services is responsible for the service 805.

**Source:** FY 2017, 2018, 2019, 2020 Budget Books

### II. Baltimore City Information Technology

BCIT is responsible for meeting the technological needs of the City's agencies. It is also responsible for the development, implementation and continuing support of the CitiTrack Customer Service Request System (CitiTrack), which provides a universal, standardized, inter-agency call-intake. The CitiTrack system is the Customer Relations Management tool for the City's One Call Center, which is also directly supported and managed by BCIT.

### III. Services

The following services are responsible for the performance measures discussed above.

1. **3-1-1 Call Center (Service 804):** The 3-1-1 Call Center is the City's call intake system branded as a customer's "One Call to City Hall" to request services, get general information and answer non-emergency questions. The information gathered from the 3-1-1 Call Center is utilized by all city agencies to access and measure customer responsiveness and satisfaction.

2. **Enterprise IT Delivery Services (Service 805):** This service is responsible for coordinating and supporting the management and maintenance of shared enterprise information technology delivery services and public safety technologies capabilities for the City. The key service areas include maintaining the City's 800MHz Land-Mobile Radio system, Computer Aided Dispatch system, Closed-Captioned Television System, City Fiber management and installation, Cyber-Security policy and threat mitigation, Network & System Engineering, Personal Computer Refresh Program as well as support for the City's mainframe system. This service is also responsible for all customer-centric support services in help desk and service desk capacities.

## Objectives, Scope, and Methodology

We conducted our performance audit in accordance with *Generally Accepted Government Auditing Standards*, except for peer review requirements. 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.

The objectives of our performance audit were to:

- Determine whether BCIT: (1) met its performance measure targets; and (2) has adequately designed internal controls related to the selected performance measures.
- Follow-up on prior findings and recommendations included in BCIT's previous performance audit report, dated June 28, 2018.

The scope of our audit is four performance measures (see Background Information) reported in the periods of FY 2018 and 2017.

To accomplish our objectives, we interviewed key individuals to obtain an understanding of internal controls such as input, processing, output, and monitoring of selected performance measures.

Management responses are included in Appendix I.

## SECTION I

### Findings and Recommendations

#### **Finding #1: Documentation was not sufficiently provided to support actual amounts reported**

The BCIT was not able to provide documentation to support actual amounts of the four selected performance measures reported in the Budget Books. Performance measures data were saved electronically in responsible personnel's hard drives. One of the responsible personnel's hard drive was confiscated and the other responsible personnel's selected files were removed due to the May 2019 ransomware incident. Due to the lack of data backup, the supporting data for the four selected measures were unavailable.

Performance measurement serves a number of external, as well as internal, agency purposes. Performance measures are integrated into the City's external accountability and fiscal decision-making systems. Successful agencies are also able to use performance information to effectively and efficiently monitor their operations. Without any supporting documentation, BCIT cannot demonstrate whether the actual amounts were accurately reported in the Budget Books resulting in loss of confidence in data reliability presented.

According to the *Standards for Internal Control in the Federal Government* issued by the United States Government Accountability Office by the Comptroller General of the United States,

- “Documentation is a necessary part of an effective internal control system. The level and nature of documentation vary based on the size of the entity and the complexity of the operational processes the entity performs. Management uses judgment in determining the extent of documentation that is needed. Documentation is required for the effective design, implementation, and operating effectiveness of an entity's internal control system.”
- “Management designs control activities needed to maintain the information technology infrastructure. Maintaining technology often includes backup and recovery procedures, as well as continuity of operation plans, depending on the risks and consequences of a full or partial power systems outage.”

National Institute of Standards and Technology's *Security and Privacy Controls for Federal Information Systems and Organizations, Special Publication 800-53 Revision 4* regarding contingency plan, alternate processing, and storage site states that “the organization plans for the transfer of essential missions and business functions to alternate processing and/or storage sites with little or no loss of operational continuity and sustains that continuity through information system restoration to primary processing and/or storage sites.”

Control Objectives for Information Technology (COBIT 5)<sup>1</sup> *Process Reference Guide Contents* states management maintain availability of business-critical information by backing up systems, applications, data and documentation according to a defined schedule.

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

We recommend the Chief Information Officer (CIO) of BCIT require that the Services 804 and 805 periodically: (1) backup data; and (2) perform tests and recovery of historical and backup data.

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<sup>1</sup> COBIT is a globally recognized framework for the governance and management of enterprise information and technology. COBIT defines the components and design factors to build and sustain a best-fit governance system.

**Finding # 2: The performance measure does not reflect the productivity of the 3-1-1 Call Center**

Although the performance measure “number of calls received in 311” is included in the City’s Budget Book, a target for this measure cannot be reasonably established because such target and its achievements are beyond BCIT’s control. Specifically, the number of calls received by the 3-1-1 Call Center is solely based on residents’ calls for any given period and is not controllable by the 3-1-1 Call Center. As a result, this performance measure does not effectively measure the 3-1-1’s productivity in serving 3-1-1 service requests. In addition, there is no clear link of action to be taken as a result of this metric.

According to the Association of Government Accountants’ Corporate Partner Advisory Group Research Series: Report No. 29, *Using Performance Information to Drive Performance Improvement*, one of the three purposes of performance measures are to drive performance improvement, that is, provide the impetus and insight for monitoring the delivery of services and making adjustments, if necessary, to assure programs achieve the desired results. The relevant information<sup>2</sup>:

- Needs to have a close logical relationship to the performance goals.
- Helps management gain an understanding of the goals and objectives being sought.
- Provides a basis for determining the levels of accomplishment and can make a difference in the assessment of a problem, condition or event.
- Relates to the concerns that are important to the users.

**Recommendation #2:**

We recommend the CIO of BCIT modify the performance measure such as the percentage of calls answered by 3-1-1 (the number of calls answered by 3-1-1/the number of calls received by 3-1-1) to reasonably measure 3-1-1’s productivity in serving 3-1-1 service requests.

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<sup>2</sup> This is based on an attribute “relevant” which is drawn from the pronouncements of the *Government Accounting Standards Board*.



## Section II Implementation Status of Prior Audit Findings and Recommendations

Table II

Summary of Implementation Status of Audit Findings and Recommendations from the Performance Audit Report for Fiscal Years Ending 2016 and 2015

| Selected Service                                       | Prior Year Findings  |  | Management's Self-reported implementation status | Auditor Comments  |
|--|--|--|--|---|
|  | Finding Summary  | Recommendation   |  |   |
| 1 Enterprise Innovation and Application Services - 803 | No written policies and procedures to document FY 2016 and 2015 targets and actual results for the number or percent of applications removed from the mainframe.   | Establish written policies and procedures to document the methodology for developing and reporting actual results for targets and reporting actual results of the performance measures.  | Unknown  | Auditors were not able to verify the implementation status of prior findings and recommendations because BCIT did not respond to the auditors request for that information. |
| 2 Enterprise IT Delivery Services - 805                | The target for average resolution time per ticket for FY 2013 was not met.   | Evaluate targets from year to year based on actual performance results to ensure targets represent the goal for improving performance.   | Unknown  | Auditors were not able to verify the implementation status of prior findings and recommendations because BCIT did not respond to the auditors request for that information. |
| 3 Enterprise Innovation and Application Services - 803 | Many target points were not reported year to year. Supporting documentation for the target performance was not available or unable to determine performance of the prior years. Actual performance measure data during the period was not available or complete. | <ul style="list-style-type: none"> <li>• Revise current measures to prescribe realistic targets or create sources for reliable data which can be managed more efficiently.</li> <li>• Integrate performance data into its decision making process.</li> <li>• Develop policies and procedures for recording, reviewing, maintaining or reporting performance measurement.</li> </ul> | Unknown  | Auditors were not able to verify the implementation status of prior findings and recommendations because BCIT did not respond to the auditors request for that information. |

**Note:** Finding 1 related to audit period for FY 2016 and 2015.

Findings 2 and 3 related to audit period for FY 2014 - 2010. This audit was performed by a certified public accounting firm.

## Management's Response

Date: September 4, 2019

To: Josh Pasch, City Auditor

Subject: Management Response to Audit Report:

Audit of the Baltimore City Information Technology Biennial Performance Audit Report

Our responses to the audit report findings recommendations are as follows:

### **Recommendation # 1**

We recommend the Chief Information Officer (CIO) of BCIT require that the Services 804 and 805 periodically: (1) backup data; and (2) perform tests and recovery of historical and backup data.

### **Management Response/Corrective Action Plan**

Agree

Disagree

BCIT concurs with the recommendation. However, while BCIT does perform routine backups of its server environment and was able to recover server data; we realize that more rigorous processes and testing are needed. Additionally, BCIT realizes that the backup process of PC's is needed as well, to address this need earlier this year BCIT began testing of Microsoft O365 for Citywide implementation. Funding for O365 was already requested in the FY20 capital budget, to begin in July 2019. Upon successful testing and configuration, of the project a phased implementation will begin.

### **Implementation Date**

Microsoft O365 implementation, will begin after successful testing and configuration, within the next several months.

### **Responsible Personnel**

Frank Johnson, CIO, 443-741-3268

## Biennial Performance Audit Report on Baltimore City Information Technology

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### **Recommendation #2**

We recommend the CIO of BCIT modify the performance measure such as the percentage of calls answered by 3-1-1 (the number of calls answered by 3-1-1/the number of calls received by 3-1-1) to reasonably measure 3-1-1's productivity in serving 3-1-1 service requests.

### **Management Response/Corrective Action Plan**

Agree

Disagree

BCIT concurs that this measure may not give much insight into 311's performance to our Citizens and partners as we would like. As a result, we will work to consider additional performance measures that are more impactful and informative to our Citizens, partners, and stakeholders. Implementing the above suggested performance measure may give a more accurate assessment of how healthy 311 call center response team is performing. BCIT will present a new performance measure to address this

### **Implementation Date**

January, 2020

### **Responsible Personnel**

Lisa Allen, 311 Call Center Director, 410-545-3650

### **Management's Response**

### **Section II**

BCIT concurs with the recommendations and acknowledges that some performances measures may need to be changed in the future to better reflect the current agency objectives and performance.