

Columbus City Schools Office of Internal Audit



Buildings and Grounds Work Order Process Audit Report

Report Date: January 23, 2020

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Executive Summary

The Columbus City Schools (District) Office of Internal Audit (OIA) has recently completed an audit of the work order process. OIA examined various activities used in the work order process. These activities included:

- Initiation of the work order;
- Assignment of work order;
- Completion of work order;
- Status of work order;
- Communication of this status to District staff; and
- Reporting of work order resolution.

Based on the results of our work during this audit, we found areas where improvements could be made to strengthen the internal control environment and enhancements could be made to current processes to increase the efficiency of the Buildings and Grounds – work order process.

Our audit was conducted in accordance with the *International Standards for the Professional Practice of Internal Auditing* established by the Institute of Internal Auditors. Our audit included such procedures as we deemed necessary to provide reasonable assurance regarding the audit objectives. Internal Auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. Internal Auditing helps an organization accomplish its objectives through a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

OIA's audit focused on gaining an understanding of the work order activities, their governance, and their internal controls. OIA also performed testing to ensure proper recording of the work completed.

OIA reported six issues and eight recommendations. OIA rated the risk associated with the six issues as follows:

High	Moderate	Low
2	3	1

During the course of our audit, we made management involved in the Buildings and Grounds – work order process aware of our issues, comments and recommendations for improvement. Good discussion took place regarding the recommendations. OIA appreciates the cooperation extended to us and the assistance of all staff we came into contact with as we performed our audit.

The following are OIA issues noted during the review:

Risk Ratings, defined:

1 – High/unacceptable risk requiring immediate corrective action;

2 – Moderate/undesirable risk requiring future corrective action; and

3 – Low/minor risk that management should assess for potential corrective action.

Issues	Risk Rating		
	1	2	3
Objective 1: To determine written business objectives/goals, metrics and risk assessment exist for the work order process.			
Issue 1 – Buildings and Grounds Management does not have written business objectives/goals, metrics, and/or risk analysis for the work order process.	X		
Objective 2: To determine that appropriate guidance exists for the work order process.			
Issue 2 – Management did not establish comprehensive rules (Administrative Guidelines) for the work order process as required by BOE policy 7410.		X	
Issue 3 – Management could benefit from BOE policy enhancements relating to the work order process.			X
Issue 4 – Lack of written procedures regarding the work order process.		X	
Objective 3: To determine that sufficient internal controls are in place for the work order function including initiation, assignment, completion, progress recording, communication with district staff, and reporting and ensure they are operating as management intends.			
Issue 5 – Lack of sufficient internal controls for the work order process.	X		
Issue 6 – Data integrity issues within the current computerized maintenance management system (CMMS).		X	

Audit Objectives

The objectives of the audit were to determine:

- Written business objectives/goals, metrics and risk assessment exist for the work order process;
- Appropriate guidance exists for the work order process; and
- Sufficient internal controls are in place for the work order function including initiation assignment, completion, progress recording, communication with District staff, and reporting and ensure they are operating as management intends.

Audit Scope

OIA established the scope of the audit to include a review of basic operational aspects of the processes and evaluation of internal control environments as they relate to the noted objectives. The period of time for the audit included all activity relating to the FAMIS work order process from July 1, 2018, through July 31, 2019. Additionally, the aging analysis of the work orders included the period from July 1, 2016, through June 30, 2019.

Methodologies

To accomplish our stated objectives, OIA performed the following tasks as they related to those objectives:

- Reviewed various authoritative literature governing work reviewed;
- Obtained and reviewed relevant District Board of Education policies;
- Obtained and reviewed relevant District procedures;
- Review of prior audits;
- Interviewed CCS personnel that handle Buildings and Grounds – FAMIS work order activities including staff within Buildings and Grounds as well as staff throughout the District;
- Observation and documentation of key processes;
- Review of various files;
- Review of management reports, support documentation, and other relevant information; and
- Review of best practices used by other entities performing similar functions.

Background

The Buildings and Grounds (B&G) operations are positioned as a direct report of the Chief Operating Officer. The B&G staff of 100 is comprised of Carpentry, Controls/HVAC, Customer Service, Electrical/Electronics, Energy Management, Environmental Health & Safety, Landscape, Preventative Maintenance (PM), and Plumbing employees. The District's B&G responsibilities are primarily responsible for maintaining the District's approximately 10 million square feet of 134 school buildings and support facilities which includes:

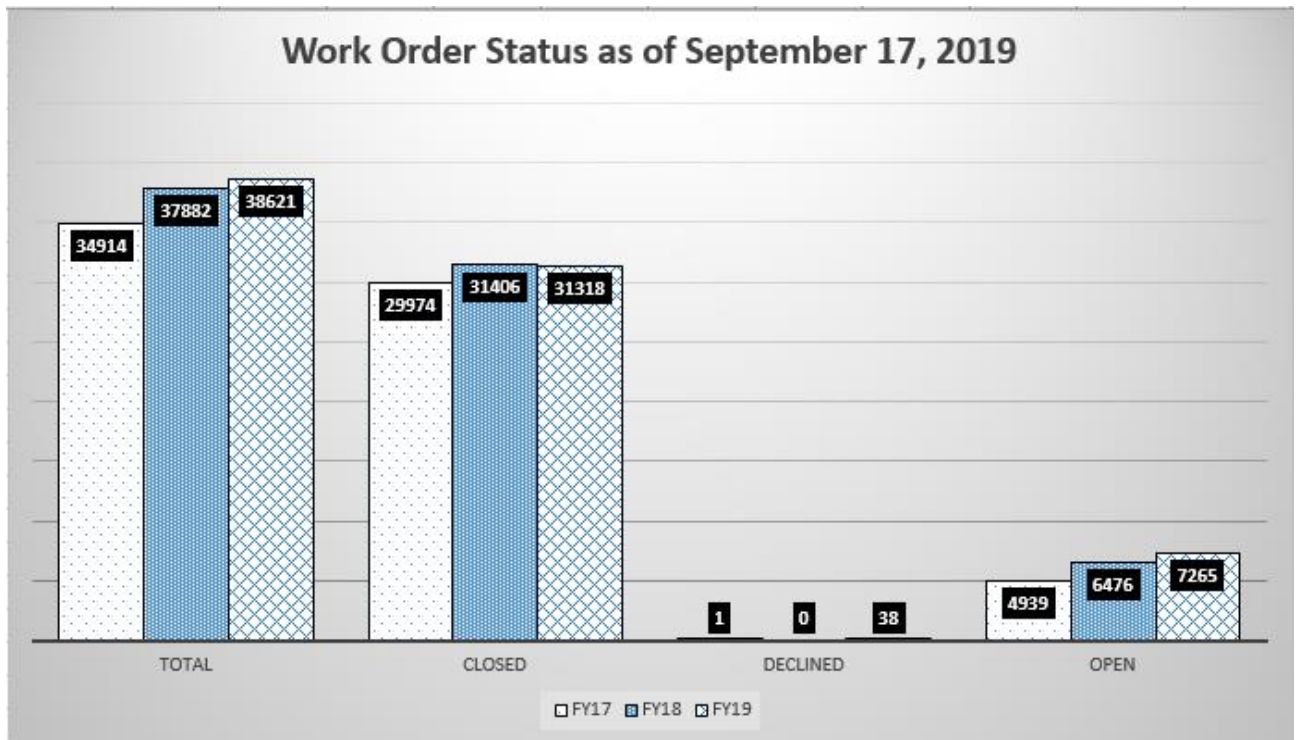
- Maintenance and repair of the District's schools, offices, and other facilities;
- Maintaining District grounds, including athletic fields;
- Performing preventative maintenance of district buildings and assets;
- Supporting the District's electrical, plumbing, HVAC, and mechanical systems;
- Following the District's energy and environmental health & safety practices; and
- Handling district repair and maintenance service requests.

Annually, per the B&G District web page, their staff processes an average of 26,000 maintenance service requests.

In November 2015, B&G entered into an agreement with Accruent for their FAMIS software solution. FAMIS is the District's computerized maintenance management system (CMMS). The CMMS allows B&G to manage the District's work orders by scheduling and allocating jobs for repairs, inspection, or breakdown, and tracking progress from job open to job closeout. The current contract with Accruent ends June 30, 2020.

Aging of Work Orders

OIA performed an aging analysis of the work order process from the data available in Accruent FAMIS and found 17% (18,680 of 111,417) of the work orders initiated from July 1, 2016, through June 30, 2019 were still Open (not Closed or Declined) as of September 17, 2019, with the oldest open work order from July 2016. OIA spot checked several of the work orders that were not closed and found evidence the outside vendor was paid for work completed, work orders assigned to employees who are no longer with the District, and work orders in which the last activity noted in the comments is over a year. OIA was unable to determine systematically which of the 18,680 work orders were incorrectly classified and should have been updated to closed.



(Source: Accrurent FAMIS Logbook Dashboard as of September 17, 2019) Note: Open was defined as all categories except Closed and Declined.

The following table is a breakdown of the number of work orders in each category from each fiscal year as of September 17, 2019:

Work Order Status	FY17	FY18	FY19	Total
Open	4,802	6,133	6,370	17,305
In Progress	19	69	254	342
Work Complete	3	81	385	469
Closed	29,974	31,406	31,318	92,698
On Hold	88	174	240	502
Back Logged	24	16	10	50
Deferred	2	1	4	7
Approved	1	2	2	5
Declined	1	0	38	39
Total	34,914	37,882	38,621	111,417

The data available in the FAMIS system report does not include Canceled or Entered in Error work orders. Additionally, OIA is unable to validate the completeness and accuracy of the data as noted in Issue 6.

Buildings and Grounds Work Order process – Issues and Recommendations:

Issue 1 – Buildings and Grounds Management does not have written business objectives/goals, metrics, and/or risk analysis for the work order process. (High)

The District's B&G work order process does not have business objectives (i.e. accuracy, completeness, consistency, and timeliness) guiding the tasks that involve FAMIS work order processes and activities. Furthermore, there are no metrics compiled for Buildings and Grounds work order process that are routinely obtained to identify successes or how efficient and effective the B&G work order process is operating. There is no risk analysis to identify areas where problems could occur.

Without business objectives, goals and metrics, it may be difficult to determine how successful the office of B&G is during a particular time period and whether their work aligns with the District's strategic goals. Also, without the above listed items, it would be more difficult to identify employees who are exceeding or meeting expectations with those who might need additional training.

Without risk assessment activities, the impact and likelihood of risks associated with significant business operations and activities are unknown. As a result, management cannot assure the effective use of resources to mitigate risks determined to be significant and likely.

Recommendations

- 1A** Written business objectives/goals should be established for the B&G work order processes, that correspond to the District's strategic goals. These objectives should address: accuracy, completeness, consistency, cost-effectiveness, and timeliness of operations. Communication of B&G status regarding their accomplishment of these objectives and goals should be made at regular intervals to Senior Management.
- 1B** Metrics (i.e. aging of all work orders, timeliness of response and communication to customer, ratio of backlog work orders to total work orders, etc...) should be established to measure the work performed that relates to each business objective. These metrics should be compared to defined benchmarks on a periodic basis (i.e. monthly, quarterly, etc...).
- 1C** Risk analysis should be performed for the B&G work order to identify areas where problems can occur given the current environment. Once the risks are identified, steps should be taken to minimize the likelihood that this risk will become problematic.

Management Response: 1A) The Office of Buildings of Buildings & Grounds work order SOP will be updated to include the metrics surrounding the objectives including "accuracy, completeness, consistency, cost effectiveness, and timeliness of operations". The Office of Buildings & Grounds will select KPIs recommended by the Council of Great City Schools to track and measure performance against peer organizations.

The Office of Buildings & Grounds SOPs will be updated with the current organizational and departmental goals.

1B) The Office of Buildings & Grounds will be utilizing the current CMMS to develop reports on aging of all requests, tech time on task, response times of requests, comparison of requests based on status, activity, and type.

1C) The Office of Buildings & Grounds will solicit the services of a third party SWOT analysis on the implemented work order system improvements (contingent upon budget allocation).

Process Owner: DeJuan Hood

Implementation Date: 1A: 5/29/20, 1B: 8/31/21, 1C: 11/31/21

Issue 2 – Management did not establish comprehensive rules (Administrative Guidelines) for the work order process as required by BOE policy 7410. (Moderate)

A review of the existing BOE Administrative Guidelines found no rules for the ongoing maintenance and good order of the physical building and for the expeditious repair of those conditions which threaten the safety of the occupants or the integrity of the building.

Without establishing these comprehensive rules for maintaining district buildings they could fall into disrepair sooner which may lead to health, safety or building integrity issues for the occupants.

Recommendation

2. Administrative Guidelines should be established to govern and guide the work order process to make the best use of district funds while maintaining a quality education environment and protecting district assets. The guidelines should include, but not be limited to:
 - a. A continuous program of inspection, maintenance, and rehabilitation for the preservation of all school buildings and equipment.
 - b. The rules necessary for the ongoing maintenance and good order of the physical building.
 - c. The expeditious repair of those conditions which threaten the safety of the occupants or the integrity of the building in order to address the requirements in existing board policy.

Management Response: The Office of Buildings & Grounds agrees that there are no existing administrative guidelines to go with board policy 7410. In our preliminary research we have been unsuccessful in identifying peer organizations that have this guideline published and BoardDocs was unable to accommodate our request for assistance.

Buildings & Grounds is not the only office that is responsible for maintenance. Custodial Services and Capital Improvements are also intertwined with maintenance responsibilities. Because of this, Buildings & Grounds recommends that we have a collaborative process in building administrative guidelines.

The Office of Buildings & Grounds proposes that a committee made up of representative of senior leadership, representation from our customer base, and the directors and supervisors of the Business & Operations Departments collaborate on clear demarcation of duties. Buildings & Grounds then intends to elaborate on the applicable parts so that a clear process is documented. These guidelines will reference multiple standard operating procedures within Buildings & Grounds, such as the forthcoming work order system procedure.

Should the committee not be successfully formed, Buildings & Grounds will propose a set of administrative guidelines that they believe will suit the organizational goals.

Process Owner: DeJuan Hood

Implementation Date: Administrative Guidelines will be submitted to COO for review by 2/26/21.

Issue 3 – Management could benefit from BOE policy enhancements relating to the work order process. (Low)

OIA research of other school district board policies on maintenance found several possible enhancements to the existing District BOE policy including adding an in-house technical training program for tradespersons; establishment of goals and procedures for building evaluation, building renovation, and infrastructure maintenance of school facilities and other School Board-owned buildings; and conduct routine assessments of all district facilities and affect needed preventative maintenance and repairs.

Without these enhancements to BOE policies, the District may not be maximizing their resources to be as efficient as possible. For example, routine assessments would identify the work that needs to be completed at each building. This work can then be matched with existing resources. Steps can be taken to mitigate any shortage in resources to maintain district buildings appropriately.

Recommendation

3. BOE policies relating to maintenance should be reviewed and the below enhancements should be considered for incorporation:

- a. A requirement for goals and procedures for building evaluation, building renovation, and infrastructure maintenance of school facilities and other district-owned buildings.
- b. A requirement for a routine assessment of district facilities and communication of the status of all work orders for each of the buildings to all parties involved in the work order process.
- c. A process to address succession planning of existing tradespersons due to retirements or attrition which could include the establishment of an in-house technical training program.

Management Response: The Office of Buildings & Grounds searched for board policies and administrative guidelines at 26 districts, ranging from districts in Central Ohio to large districts around the nation in order to determine a peer baseline. This research lead B&G to determine that our Board Policy 7410 "Maintenance" is consistent with peer districts. The Office of Buildings & Grounds agrees that board policy should be reviewed and proposed changes should be submitted for approval by the board. Buildings & Grounds proposes a joint committee of the supervisory staff of Building & Grounds, Capital Improvements, and Custodial Services with the inclusion of a representative from Senior Leadership to properly improve the policies along with the administrative guidelines as described in Issue 2's response.

Process Owner: DeJuan Hood

Implementation Date: Board Policy recommendations submitted to the COO for review 2/28/21.

Issue 4 – Lack of written procedures regarding the work order process. (Moderate)

A review of the existing B&G written guidance for the work order process found the guidance was out of date with the current process and there were not sufficient written procedures regarding the work order process.

Without comprehensive documented procedures of the work order process, staff may treat similar tasks differently. For example, staff may assign the priority of the work orders differently, assignment of jobs may not be consistent, communication with building administrators may not occur as thought, documentation of the job costs (employee time, vendor costs, etc.) could be inconsistent.

Recommendation

- 4. Written procedures used to govern and guide the work order process should be updated to mirror the current work order process.

Management Response: The Office of Buildings & Grounds will enhance the current standard operating procedure that will identify user profiles and their respective roles in the process. The developed SOPs will be reviewed for revisions on a biennial basis.

Process Owner: DeJuan Hood

Implementation Date: 8/31/21

Issue 5 – Lack of sufficient internal controls for the work order process. (High)

The current computerized maintenance management system (CMMS) and work order processes have insufficient controls in place for the work order functions:

- a. The Accruent FAMIS system setup is insufficient to effectively and efficiently process the District work orders. These include lack of password protocols; lack of periodic access reviews; all district assets requiring maintenance not entered into the current CMMS; the current CMMS required fields being insufficient to identify the issue requiring maintenance; and inconsistencies in the user role setup.
- b. The preventative maintenance (PM) process is inefficient and ineffective. B&G supervisors are manually tracking the required PM tasks for some processes instead of utilizing the existing CMMS; and PM work orders are not monitored to ensure the work orders are completed as scheduled.
- c. Work orders are not consistently processed based on established guidelines and/or vendor specifications. CCS Technicians and/or vendors are not updating the status of the work order as work is performed or placed on hold awaiting materials; contract vendors are not consistently providing detailed invoices of the work completed, the location where the work was completed and materials utilized; service-level agreement requirements are inconsistent between B&G, Food Service, vendor contracts, and building administrator requests resulting in varied expectations for work completion.
- d. Lack of documented monitoring and oversight of the work order process. There is no systematic tracking of work orders that were reviewed by the B&G Supervisors or the CCS Technicians based on invoices they are approving; aging of work orders for timeliness of completion is not being monitored; and multiple submission of work orders for same issue is not being monitored by B&G management.
- e. The current CMMS training lacks sufficient detail to accurately and completely submit a work order request. B&G management was unable to provide support that all current CMMS users received training on processing work orders.

Without a robust internal control environment, the B&G staff may not be as effective and efficient as they could be because they are handling multiple work orders for the same issue, work orders closed without sufficient work being completed, etc.

Recommendation

5. B&G management should enhance the current work order internal control environment to maximize its effectiveness and efficiency. This would include making certain the current CMMS is implemented and maintained with fidelity, developing project benchmarks to help identify bottlenecks or staff that may need additional training, establishing communication with clients regarding closed work orders to ensure they have been appropriately completed, etc.

Management Response: The Office of Building & Grounds will seek to partner with the Office of Information of Technology system password protocol improvements.

The Office of Buildings & Grounds will work on developing a system training platform for end users. The training offered will be offered on an annual basis for new users and it available upon request for refreshment purposes.

The Office of Buildings & Grounds is also working with our work system service provider to update the building asset information.

The forthcoming standard operating procedure for work orders will include specific instructions for supervisors on how to maintain data quality. Part of this will include instructions for confirming that work had actually been performed. Another part of this is a process for verifying that financials are accurate.

Process Owner: DeJuan Hood

Implementation Date: 8/31/21

Issue 6 – Data integrity issues within the current computerized maintenance management system (CMMS). (Moderate)

During detail testing of the District work orders, OIA discovered numerous issues with the data and reports in the current CMMS.

- a. Reports ran for a specific time period had gaps in the work order numbers raising questions as to the completeness of the data contained within the CMMS.
- b. Some work orders reviewed during the detail testing were marked as “canceled” or “entered in error” without documentation explaining why.
- c. Preventative maintenance work orders were manually entered by B&G supervisors as reactive work orders creating inconsistencies in the reporting of preventative vs reactive work orders.

- d. Work orders were missing supporting evidence of work completion: notation of what work was completed, CCS Technician hours attached to work order, detailed vendor invoice attached to work order, etc.

Without having complete and accurate reports generated from the CMMS, it's possible the work order process will not be as effective and efficient as possible because decisions made by management may be based on these reports.

Recommendation

6. The B&G management should review the current CMMS to determine if the system is meeting the District's needs. Additionally, steps should be taken by management to ensure sufficient information is entered into the CMMS that results in complete and accurate reporting. This will assist management in making quality decisions regarding the allocation of resources.

Management Response: The Office of Buildings & Grounds believes the current system meets the needs of our operations but we will work on strategies to capture the system needs from our customer's perspective.

Process Owner: DeJuan Hood

Implementation Date: 8/31/21