



Gwinnett County
Internal Audit Division

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Audit Report for
Construction Management
Gwinnett County Government
Audit Plan Year 2021

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Background and Scope

The Board of Commissioners (BOC) initiates construction and capital improvement projects to provide or maintain buildings, facilities, and roads that serve Gwinnett County (the County). Examples include the construction of fire stations, parks, police precinct buildings, water treatment facilities, or the expansion of court facilities and roads. The County awarded approximately \$210 million in contracts for construction projects during the audit period January 2020 to September 2021.

The Departments of Community Services (DoCS), Support Services (DoSS), Transportation (DOT), and Water Resources (DWR) oversee construction projects. They select qualified architects, engineers, and building contractors through a competitive bid process for most projects. Departmental project managers, among other tasks, monitor key deliverables for compliance through each phase of construction that includes planning, design, procurement, construction, and closeout. Project managers also process pay applications, oversee change orders, and complete closeout procedures. Architects or engineers may review construction quality, project status, and change orders during the construction period. The scope of this audit included pay applications, change orders, and closeout procedures. Management's key objectives for these activities are as follows:

- Contractor pay applications are accurate, approved, and supported by detailed schedules of values with allowances for retainage.
- Change order requests are accurate, approved, and valid for pricing and scope of work.
- Closeout procedures account for contingencies, progress payments, and warranties.

The purpose of this audit was to evaluate the adequacy and effectiveness of management's control activities that are designed to provide reasonable assurance of achieving the objectives. Internal Audit (IA) interviewed employees, observed certain control activities, and reviewed construction documents on a sample basis for the audit period. Since the audit period ended September 2021, we verified there were no significant changes in control activities or business conditions after the end of fieldwork but prior to the report date that could potentially change our assessment. There were no significant changes. We believe the evidence provided a reasonable basis for our assessment. See **Exhibit A** for a summary of our audit procedures.

Assessment

Management's control activities were generally adequate and effective in providing reasonable assurance of achieving their control objectives. We found no evidence of abuse or improprieties. We made one recommendation to improve control activities. The recommendation relates to improvement opportunities rather than significant control weaknesses.

Recommendation

1. Departments may not maximize warranty benefits.

Construction contractors and equipment manufacturers often provide warranties that guarantee repair or replacement of faulty work or defective parts and products during a specified period. Warranties typically last a year after substantial completion of the project, although additional specialized warranties can last longer. Departments must monitor warranty terms, purchases, and work orders to avoid paying for repairs or replacements that should have been covered under warranty. Departments may contact contractors or vendors to correct defective products or work under warranty, or they may pay for repairs or replacements and seek reimbursement.

IA examined warranty documentation for a sample of 18 closed projects to understand terms and performed walkthroughs of departmental procedures for ensuring compliance. The number and type of procedures varied significantly by department, but DWR had the combination of control activities we considered most effective in maximizing warranty benefits. The following are best practices we observed from departments during our review:

- *List of equipment under warranty.* Project managers maintain a list of equipment under warranty to maximize warranty claims and reduce repair costs. It is very difficult to manage equipment warranties or redirect repairs to vendors without knowing which equipment is covered.
- *Warranty Management Systems.* Work order systems Lucy and Maximo can store warranty information and automatically notify users when work orders and equipment replacements may be under warranty. This helps ensure contractors and vendors perform work under warranty rather than departments.
- *Physical inspections.* Project managers inspect the integrity and functionality of buildings, other structures, and equipment to identify potential repairs or replacements prior to the end of warranty periods. This is to minimize costs that could have been avoided if defects had been identified during warranty periods.

Recommendation

We recommend departments use Lucy and/or Maximo to monitor warranty terms for work orders and repairs. Physical inspections should be completed to identify defects prior to warranty expirations. A list of equipment under warranty should be kept to track terms and promote claims.

Management Response (DoCS): *DoCS agrees with the recommendation. Lucy is currently being used to manage most of the warranty items made available to the Lucy DB team. Project managers and our skilled trades units retain hard copies of inspections and applicable supporting information for warranties or store electronic warranty information in Lucy.*

Because documentation is not centralized and must be manually entered, this could result in errors and omissions of warranty information. In the future, we would like to fully integrate Lucity with e-Builder, the project management software we use, to improve automation. However, this is dependent on the implementation of the SAP upgrade. Once the upgrade occurs, we will be able to integrate Lucity with e-Builder.

Management Response (DoSS): *DoSS agrees with the recommendation and with the comments provided by DoCS, as the two departments implemented the Lucity system at the same time. DoSS standard project protocol requires an 11-month walkthrough prior to the completion of the warranty period. Additionally, DoSS implemented an Internal Closeout Process in February 2022 to formally manage any warranty issue as a work order through Lucity. This provides the ability to track each warranty item, determine if the item is still under warranty, and determine the appropriate response to addressing the issue by a contractor or by staff. This process also allows DoSS to track warranty issues to identify any reoccurring manufacturer issues with a product.*

Management Response (DOT): *DOT is currently in the process of hiring an Asset Manager and will evaluate the cost effectiveness of incorporating warranty monitoring controls into asset management procedures. This would take into account the asset lifecycle of traffic signals and related equipment in comparison to warranty terms.*

Other Considerations

IA observed opportunities to improve certain business activities based on best practices and included advisory comments for management consideration only. Management is not required to provide written responses or corrective action plans. The advisory comments are as follows:

- Pay applications and change orders had several forms of signatures to evidence review and approval. There were wet ink, digital with encryption, electronically drawn, pasted image, and typed signatures. Some documents had unprotected text or signature fields. The risks associated with wet ink and typed signatures are unauthorized approvals. Departments should use digital signatures with encryption to enhance authentication and prevent tampering.
- There was considerable variability in who authorized pay packages. We recommend departments standardize delegations of authority. At a minimum, architects or engineers, departmental managers or above, and contractors should approve pay packages.
- Construction closeout processes should ensure construction work is complete per contract terms and the County has all required documents and knowledge. We were unable to evaluate the completeness of closeout procedures due to inconsistent or incomplete documentation. For example, closeout procedures include, among others, a list of incomplete work contractors and subcontractors must complete to finalize construction. Typically, the project manager or engineer uses a punch list to verify the work was completed to specifications. Departments did not always keep approved punch lists or other confirmation. We suggest departments standardize construction closeout procedures and documentation for third party inspections.

Exhibit A
Summary of Audit Procedures

IA performed the following procedures to evaluate the adequacy and effectiveness of control activities:

- Interviewed departmental management to identify key control activities. Walked through key activities to confirm understanding and validate procedures.
- Reviewed 48 monthly pay applications from a judgmental sample of 23 construction projects for mathematical accuracy, adherence to contract terms, supporting documentation, and management approval. Reviewed external approvals by contractors, engineers, and architects. In addition, vouched unit pricing per contract to pay application detail to ensure accuracy. Compared pay amounts, including retainage, to SAP disbursement transactions for accuracy.
- Reviewed recent list of contractor complaints kept by the Purchasing Division. There were no complaints for contractors in our sample.
- Obtained change order data from FileNet for the audit period and analyzed the information for anomalies such as excessive change orders by contractors, high change order costs as a percentage of total contract values, and duplicates. The results were reasonable.
- Confirmed accuracy, authorization, and supporting documentation for a judgmental sample of 21 change order packages.
- Reviewed documentation for 18 closeouts to validate execution and completeness.
- Inspected four construction sites to confirm work per pay applications and change orders.
- Reviewed management's warranty management procedures (**Recommendation 1**).
- Verbally confirmed management sought public input on major construction projects.
- Reviewed Occupational Safety and Health Administration or OSHA violations per website for any enforcement issues associated with County contractors without exception.