City Auditor's Office

# Public Works Utilities Extension Program Management Audit

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Audit Report No. 20-04

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TO: Mayor Coviello and Council Members

FROM: Andrea R. Russell, City Auditor

DATE: January 12, 2021

SUBJECT: Public Works Utilities Extension Program Management Audit

The City Auditor's Office completed the audit of Public Works Utilities Extension Program Management. The audit was conducted in conformance with Generally Accepted Government Auditing Standards by the authority granted through City Ordinances 28-02 and 79-10.

We would like to express our sincere appreciation to City management and staff for the courtesy, cooperation, and proactive attitude extended to the team members during the audit. If you have any questions or comments regarding this audit, please contact Andrea Russell at 242-3380 or Tim DiSano at 242-3308.

C: Rob Hernandez, City Manager
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# EXECUTIVE SUMMARY

The City Auditor's Office conducted an audit of the Public Works Utilities Extension Project (UEP). The Audit was part of the FY20 approved Audit Plan.

As part of audit testing, we reviewed several different areas of UEP management, including application of payments to contractors, change orders, methodology for calculation of assessments, and project communications with citizens. We determined controls over these areas are in place and operating effectively to ensure payments are accurate, change orders are appropriately processed, assessment methodology is fair and accurate, and communications are sufficient to keep the public informed.

Based on the test work performed and the audit recommendations noted below, we concluded overall that policies and procedures are in place and controls are operating effectively to meet the stated audit objectives; however, to administer the program more efficiently we noted the following areas need improvement:

- Daily field inspection reporting and review process
- Management of citizen complaints, issues, and concerns

For further details on the findings and recommendations see the Findings and Recommendations section. No material control deficiencies were noted.

# BACKGROUND

The City of Cape Coral (City) was incorporated in 1970 and is located on the Southwest coast of Florida in Lee County. It is a coastal community with a population nearing 200,000 residents, encompassing 120 square miles, and has over 400 miles of navigable waterways. According to the 2020 Economic Development Guide, Cape Coral is the 8$^{th}$ largest city in Florida.

The City was developed as a low-density, rural community with properties utilizing septic tanks and shallow groundwater wells. If these septic tanks fail, sewage can contaminate groundwater and canals which can also lead to environmental concerns. Also, the shallow wells add to the depletion of the upper groundwater aquifers. For these reasons, extending City water, sewer, and irrigation systems to unserved areas of the City is an important and integral part of the development and growth of Cape Coral.

The Utilities Extension Project (UEP) provides the infrastructure for water, sewer, and irrigation services to previously unserved service areas, including new wastewater and irrigation pump stations. Improvements are also made to City roads and stormwater drainage systems as part of the UEP.

The City has extended utilities to nearly all of the City south of Pine Island Road and is in the process of extending utilities in two phases (North 2 and North 1) north of Pine Island Road. The City previously completed the construction of a new water treatment facility in the North Cape in 2010, with the expectation that the UEP would continue to grow in the future to serve the remaining areas. Future UEP phases are also being planned to extend services to the remaining unserved areas of the City.

Some benefits to extending the City water, sewer, and irrigations services include[1]:

- Customers will receive a dependable supply of high-quality, good-tasting drinking water.
- Public Safety - Installation of fire hydrants in the area will provide a fire-flow system with a reliable water supply and pressure. This may lower homeowner insurance premiums.
- Water conservation for irrigation - The City operates an irrigation water system that provides a separate source of treated, reclaimed water for irrigation. This decreases the use of potable (drinking) water for irrigation, which conserves the drinking water. It also eliminates the need to discharge treated wastewater.
- Enhanced property values - Properties connected to a centralized water and sewer system will have an increase in value over those with wells and septic systems.
- Economic growth - This will improve the quality of life for all Cape Coral Citizens.

These projects are typically funded by using State Revolving Funds (SRF) or municipal bonds, which the City will pay back over 20 to 30 years. Also, commercial paper or short-term financing can be utilized to accommodate cash flow requirements. The cost to connect to the water and sewer system is comprised of a land area assessment charge and a Capital Facility Expansion Charge (CFEC). For a typical 10,000 square foot lot in North 2 receiving water, sewer, and irrigation service, the total land area and CFEC assessments charged to the property owner are approximately $19,000. In addition, the homeowner is required to pay the costs to decommission the existing septic tank and connect to City water, sewer, and irrigation systems. Residents typically hire a licensed plumber to make these connections at the City street right-of-way line.

To help assist residents of the City with the cost of the UEP, several programs are available such as low financing costs, discounts on the CFEC, and prepayment options. Also, the City has offered hardship programs for residents who may have difficulty paying for these assessments. The hardship programs offered consist of a method of deferral of annual payments, applicable to the amortized method only and based on income qualification.

The Utilities Extension Project Division consists of one Division Manager, one Principal Engineer, one Senior Engineer, one Project Manager, four Senior Construction Inspectors, and one Contract Administrator.

[1] https://www.capecoral.net/department/utilities_department/utilities_extension_projects/index.php

## AUDIT OBJECTIVES

The audit objectives were:

- To determine if controls are in place over the Utilities Extension Project program to ensure projects are managed in accordance with contract terms, project plans, and to minimize adverse effects on the community.
- To determine if labor and indirect cost rates for professional engineering service contracts are accurate.[2]

## STATEMENT OF AUDITING STANDARDS

We 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.

## FINDINGS AND RECOMMENDATIONS

**FINDING 2020-01:** Improvements to daily field inspection reporting and review process
**Rank: Medium**

All 13 construction contracts of the North 2 UEP must have daily inspections performed. In order to accomplish these inspections, the City contracts with a Construction, Engineering, and Inspection (CEI) firm to provide inspection services. The firm provides these services in accordance with negotiated contract terms and conditions and allocates at least one construction inspector per contract. In addition, four City construction inspectors are assigned to the project to provide additional oversight of the contractors' work on the UEP contracts.

As part of their daily inspection duties, CEI inspectors complete Daily Field Reports (DFRs) which are maintained in the consultant-provided, Project Management Information System (PMIS) software program called Aconex. This program includes a Field module for maintaining and documenting required project inspections. The CEI firm also has a construction engineer that manages multiple contracts, including providing supervision for the CEI inspectors. The CEI construction engineers are responsible for reviewing the DFRs and transmitting them to the City.

[2] Due to data availability, testing for this objective will be released under separate cover.

City inspectors also monitor contractor work to determine compliance with contract plans and specifications. Also, they are responsible to coordinate Direct Purchase Order (DPO) of material deliveries used within the project. City inspectors play an important role in keeping the projects on schedule, within budget, and operating within the requirements of the contract. Inspections of construction, material testing, and general project oversight help to ensure the quality of construction meets the project specifications.

City inspectors typically document daily conditions in a logbook, track materials on an excel spreadsheet, and/or notate directly onto engineering plans. This information is then recorded into the Daily Field Report form within the Aconex Field module. Each inspector is assigned a City issued laptop or iPad with MiFi and a cell phone. The cell phone is not a smartphone and is not compatible with the laptop or iPad. Public Works is considering replacing the “flip” phone with a smartphone to provide improved functionality, including the ability to more easily upload photographs to Aconex.

City inspectors report to one of two City project engineers and the UEP Manager. The City’s UEP engineering and management staff are responsible for reviewing the DFRs periodically, typically weekly, and to address any significant issues or concerns identified in the reports. These reviews consist of, but are not limited to, reviewing construction activity/progress, documented issues/claims, types of machines/equipment used, number of staff present, and any photos attached to the reports. Should any questions or concerns arise, City management utilizes the Aconex system to communicate with responsible individuals for clarification. However, we noted as part of our testing, it is difficult to verify this monitoring occurs because there is no formal sign off to document the review and there is not a clear audit trail being used and/or present within the Aconex system.

Inspections, either at the individual project location or program level are the primary method used by the City’s engineering firm and the City to fulfill its construction program oversight responsibilities. Construction inspection reports help to provide documented evidence that monitoring is completed, support for invoicing and payment, and serve to record observations and findings such as claims and other project-specific topics of interest or requirements.

Currently, City Inspectors can be assigned up to three contracts for inspection and must move between the contract areas throughout the day which makes devoting significant time to a project when needed almost impossible without neglecting other duties or inspections. The North 2 project covered approximately six square miles, 8,900 tax parcels, and approximately 96 miles of City roads. In addition, outdated or inefficient equipment can add more time to regular inspection duties. Insufficient monitoring can lead to non-compliance with contract terms and specifications and could increase costs as well as liability to the City. As the City continues to develop and expand, it is imperative that the infrastructure keeps pace with growth.

**RECOMMENDATIONS:**

**2020-01a.** Formalize and document City Management Staff monitoring of the construction and engineering firm's daily field inspection reports.

**2020-01b.** Review and identify more efficient means to conduct inspection and oversight. Consider increasing field inspection staffing and provide adequate equipment to improve monitoring of the construction process.

**Management Response and Corrective Action Plan**:

**2020-01a.** Create an additional PMIS workflow to supplement current review procedures for DFR review and tracking of completion and approval.
**2020-01a. Responsible Person:** UEP Manager
**2020-01a. Anticipated Completion Date:** June 1, 2022

**2020-01b.** Propose additional City construction inspectors and/or CEI Inspectors and appropriate equipment based on projected number of contracts, size of contracts, and anticipated production rates.
**2020-01b. Responsible People:** UEP Manager
**2020-01b. Anticipated Completion Date:** March 1, 2022

**FINDING 2020-02: Improve management of citizens' concerns**
**Rank: Medium**

Currently, portions of Cape Coral do not have City water and sewer available. It is the intent of the City to provide utility services within the geographical boundaries of Cape Coral through the UEP. In order to manage the vast extension area, the program is divided into phases. The most recent phase, which is nearly complete, is North 2. Southwest 6 and 7 UEP has already been completed and the North 1 phase is currently in design. Utility services provided by the UEP include drinking water, sewer, and irrigation, as well as other general improvements to area infrastructure when pavement is removed for the UEP construction.

The City contracts with a CEI firm to manage the construction process, including management and coordination of the public information process through a Public Information Officer (PIO). One of the responsibilities of the contract PIO is to address citizens' concerns during the construction phase. Once the UEP phase is substantially complete, City staff assumes responsibility for the contract PIO role and responsibilities. The CEI firm utilizes a proprietary project management information system (PMIS) program called Aconex to manage phases of the UEP. The construction team set up a test project within Aconex for managing, documenting, and responding to citizens' concerns. According to UEP information on the City's

website, citizens can reach the PIO through a unique phone number dedicated to UEP, a special UEP email, or by calling the City's 311 Call Center.

The 311 Call Center is not specific to UEP and offers citizens a way to obtain information about city services, ask questions of city staff, report problems within the City, and submit requests for services. It also provides a status of questions and requests on the cases received. The Call Center is accessed by dialing 3-1-1 or through a website link. Concerns are recorded in the City's customizable management system called TRAKiT. During the 3-year audit period between October 1, 2017, through September 30, 2020, over 9,000 communications between residents/contractors/City staff/PIO were recorded in Aconex, which is not uncommon for a project of this magnitude. Approximately 800 of those communications were also recorded in TRAKiT.

Per UEP staff, calls received through the UEP Hotline are logged into Aconex as an issue when the call is received. The PIO forwards the issue to the CEI construction engineer or applicable contractor for a response. The issue is investigated, and the contractor submits response in Aconex. If the matter is not resolved immediately, it remains on the list of the outstanding issues and is added to the contractor's punch list and must be resolved before final completion and reduction of retainage. If the issue involves damages, an inspection is scheduled with the resident and is attended by the contractor, the CEI, and the City inspector. If necessary, the contractor may forward the issues to his insurance carrier for evaluation. Damage complaint resolution is often a lengthy process and can take several months to schedule various inspections and negotiate a settlement with the resident.

Calls that are received through the 311 Call Center are handled initially by City staff. If the issue can be addressed by City staff, the response is logged into TRAKiT and closed. If it involves follow-up with the CEI and/or contractor, it is forwarded to the PIO and it is logged into Aconex and processed as if the call came in through the UEP Hotline.

At times, issues are forwarded to UEP staff by City administration and/or the City Council. These issues are handled in a similar fashion as issues from the 311 Call Center. UEP provides a response including status or resolution on the item to all Council members.

The City, CEI, and contractors hold monthly progress meetings for each contract. One of the standing topics on the agenda is the review of outstanding PIO issues. Contract requirements for handling contractor damage complaints are addressed in Volume 1, Section 01100, Paragraph 3.1 of the Contract Documents. The City withholds payment for PIO issues that are not resolved within 30 days of the insurance company or independent professional engineer review.

A document prepared by the Northwest Cape Coral Neighborhood Association (NWNA) identified some concerns related to the handling of resident concerns and damage complaints.

That document, titled “North 2 Lessons Learned”, suggested improvements were needed in communication; damage claims process; scheduling; safety; assessment calculation methodology; and quality of resident life during construction.

Audit staff found that several of these concerns have merit, particularly in the follow-up and closeout of issues. Defined policies and procedures are an essential management tool that provides a roadmap for day-to-day operations. Most importantly, policies and procedures manuals help to ensure business continuity; identify specific methods and standards for how work is performed and documented; provide process consistency and structure; and define roles and responsibility. These are all essential items needed to manage a large project like UEP.

A lack of clearly defined policies and procedures can lead to confusion especially given the size of the project and the fact that multiple database reporting systems are in use (Aconex and TRAKiT). Without adequate monitoring of citizen issues or damage complaints, cases may not be addressed in a timely manner which can lead to frustration for those residents in the UEP areas.

**RECOMMENDATIONS:**

**2020-02a.** Improve policies and procedures for addressing citizen’s concerns. These updated policies and procedures should be in place for the next phases of the UEP and at a minimum should include:

- Clearly defined roles and responsibilities for the City and consultant
- Time standards for initial complaint/concern response, follow-up, and closeout
- Definition of what constitutes adequate resolution for closing out cases

**2020-02b.** In order to eliminate duplication or confusion by using two systems of record (UEP Hotline and 311 City-wide system), determine the feasibility of utilizing only one management system for oversight of citizens’ questions, concerns, and damage complaints.

**Management Response and Corrective Action Plan**:

**2020-02a.** Update CEI agreement and construction contract documents, as applicable, regarding tracking, documentation, and closeout procedures for citizen issues and damage complaints. Create a workflow process in PMIS, including a requirement of closeout by PIO of all citizen communications, including questions, concerns, and damage complaints.

**2020-02a. Responsible Person:** UEP Manager

**2020-02a**. **Anticipated Completion Date:** June 1, 2022

**2020-02b.** Coordinate with IT to determine the feasibility of cross-referencing the UEP Hotline (PMIS) and 311 (TRAKiT) to verify that one of these systems is tracking response to citizen issues within UEP areas.
**2020-02b. Responsible People:** UEP Manager
**2020-02b. Anticipated Completion Date:** March 1, 2022

## SCOPE AND METHODOLOGY

Based on the work performed during the planning and the assessment of risk phase, the audit covered the UEP from October 1, 2017, to September 30, 2020 (FY18, FY19, FY20). To evaluate the UEP management operations, we reviewed policies and procedures, applicable laws, regulations, and associated processes. We interviewed the UEP staff, completed walkthroughs of those processes, and reviewed available documentation to gain an understanding of the UEP management practices.

To achieve the audit objective, we sampled transactions, reviewed supporting documentation, and evaluated processes in the following areas:

- Monthly payment applications
- DFR's completed by CEI and City inspectors
- Documented citizens' concerns and questions within the project management Aconex system and the City's TRAKiT system
- City's efforts to keep the public informed
- Determination of assessments

Sample size and selection were based on the City Auditor's Office sample methodology. We used a judgmental and random sampling methodology for sample selections.

To achieve the audit's objectives, we relied on information from the City's Accounting and TRAKiT systems, and the engineering and inspection firms Aconex management program. Through previous audits, the Accounting and TRAKiT system were deemed reliable and no reliability testing was conducted. For the purpose of audit information obtained from Aconex, since the system was only serving as a document repository, no reliability testing was deemed necessary.

# APPENDIX A

**Finding Classification**

Findings are grouped into one of three classifications: High, Medium, or Low. Those findings that are categorized as low are not included in the report but rather are communicated separately to management. Classifications prioritize the findings for management to address and also indicate the level of testing required to determine if a finding's Corrective Action Plan is fully implemented in accordance with recommendations and Management's Response.

**High**: A finding that is ranked as "High" will have a significant impact on the organization. It is one that *prevents* the achievement of a substantial part of significant goals or objectives, or non-compliance with federal, state or local laws, regulations, statutes, or ordinances. Any exposure to loss or financial impact for a High finding is considered *material*. Examples include direct violation of City or Department policy, blatant deviation from established policy and procedure, such as actions taken to circumvent controls in place, material non-compliance with federal, state or local laws, regulations, statutes or ordinances, or an area where significant cost savings could be realized by the Department or the City through more efficient operations.

High findings require immediate management attention and should take management's priority when considering implementation for corrective action.

**Medium:** A "Medium" finding is one that *hinders* the accomplishment of a significant goal or objective or non-compliance with federal, state or local laws, regulations, statutes, or ordinances, but can't be considered as preventing the accomplishment of the goal or objective or compliance with federal, state or local laws, regulations, statutes, or ordinances. Exposure to loss or potential or actual financial impact is *significant but not material* to the Department or City. Examples include lack of monitoring of certain reports, insufficient policies and procedures, procedure in place, or lack of procedure that can result in *potential* non-compliance with laws and or regulations.

Medium findings require management attention within a time frame that is agreed upon by the Department and the City Auditor. Priority for implementation of management's corrective action should be considered in light of other High or Low findings.

**Low:** A "Low" finding is one that warrants communication to management but is one that isn't considered as hindering the accomplishment of a significant goal or objective and isn't causing non-compliance with federal, state or local laws, regulations, statutes, or ordinances. Financial impact or risk of loss is minimal to none; however, low findings can *hinder the effectiveness or quality of department operations and thus are communicated to management separately. Low ranked findings are not included in the final audit report.*

The City Auditor's Office will not follow-up on the status of Low findings communicated to Management.