



**OFFICE OF INSPECTOR GENERAL  
CITY OF ALBUQUERQUE**

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**Report of Investigation**

**FILE NO:** 18-0004 I

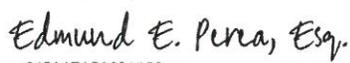
**DATE:** May 27, 2020

**SUBJECT:** The Office of Inspector General (OIG) for the City of Albuquerque (COA), New Mexico, conducted an investigation of allegations regarding the City's Street Lighting project and the associated contracts that were awarded to Citelum US, Inc.

**STATUS:** Draft

**INVESTIGATOR:** J. S.

  
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**KENNETH BRAMLETT, INSPECTOR GENERAL  
OFFICE OF THE INSPECTOR GENERAL**

DocuSigned by:  
  
\_\_\_\_\_  
**EDMUND E. PEREA, ESQ  
ACCOUNTABILITY IN GOVERNMENT OVERSIGHT COMMITTEE CHAIRPERSON**

**DISTRIBUTION:**

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Members, Accountability and Government Oversight Committee**

**File**

## Executive Summary

The Office of Inspector General (OIG) for the City of Albuquerque (COA), New Mexico, conducted an investigation of allegations regarding the street lighting project and the associated contracts that were awarded to Citelum US, Inc. (will be referred to as Citelum throughout this report). Unfortunately, due to a change in personnel and severe resource limitations, this investigation required a longer period to complete than ideal.

A former Citelum employee, hereinafter known as CIT-1, made several allegations against Citelum US, Inc. He asserted that he was hired by Citelum to represent their interests to the City of Albuquerque, but his employment was terminated on or about October 12, 2017. He said Citelum submitted the highest priced proposal to the City yet was still awarded the contract. He said that there was a meeting in Washington, DC, prior to the award between the company and individuals representing the interests of the City, to help facilitate the awarding of the contract to them. He claimed two attorneys in Albuquerque were each compensated about three percent of the total value of the contract for their efforts in getting the contract with the City, but that the City was not aware of this fact. He said that while the City had expressed an interest in having the Light Emitting Diode (LED) street lights be supplied by General Electric, in fact, the lights were provided by Acuity Brands, Inc, based in Atlanta, GA. He believed that Citelum used five year old data from GE when representing costs to the City.

The investigation focused on several issues based on the allegations. They included:

1. Complainant stated that Citelum submitted the highest priced proposal to the City, but was still awarded the contract.
2. Complainant stated that the process of installing street lights may have led to a “bait and switch.” He said there should have been three types of lights installed – 3,000, 3,500 and 4,500 Kelvin, but he believed Citelum had installed 2,700 Kelvin. Complainant stated that he believed Citelum had deviated from the “master plan” by installing “cheaper” fixtures.
3. Complainant stated that prior to his dismissal, the contract was signed and that the budget included “Six percent, which was not touchable.” He explained that the six percent was for “success fees,” which he claimed that his “boss” told him was “confidential and highly illegal.” He said that he understood that the six percent represented fees paid to two attorneys for their involvement in securing the contract. Specifically, an Albuquerque based attorney as well as President and CEO of the “Carmen Group” in Washington, District of Columbia (DC), each received three percent of the value of the contract. He claimed that the former Mayor had taken many trips to DC, where the Carmen Group was lobbying him for the project. He said he knew this because the Business Development Director for Citelum US, learned of the visits and lobbying from former City of Albuquerque, Chief Operating Officer. He claimed that both Business Development Director and Former COO had a relationship with each other. He recalled there were about five to six visits between the former Mayor and the Carmen Group CEO during a six month period. CIT-1 stated that these meetings typically occurred when Mayor would attend Council of the Mayor’s meetings in DC. He said that Citelum would contract with the Carmen Group and meet with the former Mayor during the DC trips.

4. CIT-1 stated that in the initial proposal, Citelum would remotely monitor all street lights, which would require monitoring technology in each street light, but that the budget fell short of the amount needed to make that happen. As a result, he said, an individual would need to “drive from point “A” to point “Z” to ensure all lights are operating. He added that the City owns the geographical database to pinpoint each light location. He suggested reviewing the contract to determine if a monitoring system was required by the contract.

5. Complainant stated that staff at IWI Lighting for GE knew of the City’s interest in GE lights. CIT-1 said that COA staff were interested in GE lights because Aquity was not “up to speed” and was an inferior product, as compared to the GE lights. CIT-1 said that the Aquity lights might be priced at a lower cost than GE. He also asserted that he learned from Citelum staff that the information Citelum presented regarding GE lights was five years old. CIT-1 believed these assertions to be untruthful and recalled these conversations occurred about two days prior to him being terminated.

The detailed investigation concluded that each of the aforementioned allegations appear to be unfounded. The contract with Citelum, overall, has been substantially compliant and completed and agreed upon by both parties. In addition, the COA randomly samples light outputs and all have demonstrated compliance. Lastly, the overall goal of this initial project was to gain cost and energy savings for the City of Albuquerque, which has been reached.

The OIG worked with the Office of Internal Audit (OIA), as part of this investigation, due to the number of complaints asserted and the age of the initial complaint. This complaint was brought forth in 2018 but due to changes in personnel and unforeseen circumstances, the completion was delayed. The Investigator assigned provided the OIA with a template and various objectives to audit as they pertain to the overall compliance of this contract. Those reviews will be attached, hereto, and discussed briefly in the report. They show substantial compliance with all objectives and cost savings to the COA.

## **Abbreviations:**

COA – City of Albuquerque  
DMD – Department of Municipal Development  
FO - Council Finance Officer  
IG – Inspector General  
K – Kelvin  
LED - Light Emitting Diode  
OIG – Office of the Inspector General  
PNM – Public Service Company of New Mexico  
RFP – Request for Proposal  
SOP – Standard Operating Procedure

## **Scope and Methodology**

The OIG investigation focused on the allegations asserted by the former employee of Citelum, US against the City and the Company, as previously described. The scope of the investigation addressed only the allegations. The methodology consisted of reviewing relevant documents and interviewing witnesses that could provide information regarding the allegations. The following activities were conducted as part of the investigative process:

- Review of pertinent documents to include the Request for Proposal (RFP), contract, receipts, and related documents regarding the COA and Citelum, both electronic and paper files
- Interviews of relevant staff members
- Review of relevant City Ordinances, Standard Operating Procedures (SOP) and COA's policies and procedures
- Review of previous investigative reports relating to Department of Municipal Development (DMD)
- Review of previous audit reports relating to DMD

The OIG will also lead an audit of the process and completion of the contract with the COA and Citelum, in conjunction with the Office of Internal Audit.

## **Background Investigation, Documentation Review and Interviews**

A Request for Proposal (RFP), Solicitation Number P2016000023 was made public on October 9, 2015 entitled *Evaluation and Implementation of Energy Efficiency and Reduced Maintenance on City Owned and Maintained Street Lighting*. The deadline for receipt of proposals was set for November 20, 2015 through the City eProcurement System. In this RFP, the introduction provided the following introduction: The City of Albuquerque (COA) through its Department of

Municipal Development (DMD), seeks proposals from prospective Offerors (1) to develop a plan to conduct a preliminary field assessment and inventory the City owned street lighting; (2) implement the preliminary field assessment and inventory plan; (3) develop plan to increase efficiency and reduce maintenance of City owned and maintained street lighting; (4) develop a plan for increased lighting in downtown and various neighborhood/business districts; and (5) implement the plan, using MSSLC Model Specification for LED Roadway Luminaires and ROAM System Specification Guideline Division 16520.

The issue identified by the COA in the RFP stated: The City does not have a dedicated street light maintenance section, street light equipment, or spare parts. At any given time, there are a number of Public Service Company of New Mexico (PNM) Standard street lights out due to burned out bulbs and/or power interruptions. PNM has roving street light crews that replace bulbs and repair damages. PNM's response time varies depending on the number of lights out in an area and other workloads.

The maintenance of street lighting is currently the responsibility of DMD/Traffic Engineering. Traffic Engineering has the proper labor classifications and proper equipment for the majority of the required street lighting maintenance with exception of the approximately eighty (80) high mast lights. The maintenance of high mast lighting is performed by contractors.

In order to respond to outage repair requests, a traffic signal crew must be utilized. Monthly PNM billing for non-routine maintenance ranges from \$10,000 to \$40,000, depending on the month's activity. Twenty-four (24) months at \$20,000 per month, Four Hundred Eighty Thousand (\$480,000.00) annually, is a conservative estimate of the expected activity for PNM.

Lastly, the initial RFP had outlined the Phases that the COA wanted to have completed for this project:

## **PHASE I DEVELOPMENT OF PRELIMINARY FIELD ASSESSMENT AND INVENTORY PLAN**

1. The Preliminary Field Assessment and Inventory Plan shall be in the following format to include:

- (a) Detailed information of existing street lighting inventory.
- (b) Information verifying work completed during evaluation study by group or area.
- (c) Existing kWh usage versus proposed kWh usage as a result of the implementation plan.
- (d) Existing maintenance costs versus proposed maintenance costs as a result of the Lighting Conversion Implementation Plan (below).
- (e) Potential energy and cost savings as a result of the Lighting Conversion Implementation Plan.
- (f) Recommendations on energy and maintenance cost savings.

- (g) Description and modality of implementing the lighting control system.
  - (h) Description of potential cost savings to the City of Offeror provided knockdown and replacement.
  - (i) Description of proposed approach to implement rate changes, including coordination with PNM.
2. Develop a proposal for the costs to execute the Preliminary Field Assessment and Inventory Plan.
  3. Upon the City's approval of the Preliminary Field Assessment and Inventory Plan and proposal, the project may, at the City's discretion, continue into the Phase II.

## **PHASE II IMPLEMENTATION OF PRELIMINARY ASSESSMENT AND INVENTORY PLAN**

The implementation of the Preliminary Assessment and Inventory Plan will include the following tasks:

1. Conduct a Preliminary Field Assessment and Inventory of pole and fixture by location, which shall include both City owned and maintained as well as City owned and PNM maintained street lighting. The City will provide Offerors with access to required data and information to complete this task.
2. Conduct a field assessment of pole and fixture condition by location, meter, and feeder string of City owned and maintained as well as City owned and PNM maintained street lighting as identified in the City provided data and information.
3. Provide an assessment of existing pole installation and accessibility issues and any recommendations to address these conditions if warranted.
4. Provide an assessment of existing fixture condition and recommendations for an energy efficient LED solution. **“Reference Exhibit A MSSLC Model Specification for LED Roadway Luminaires”** and **“Reference Exhibit B ROAM System Specification Guideline”** for implementation. The recommendations should include coordination with PNM to consider potential rebates and coordinate any rate modifications necessary for implementation.
5. Provide a validated spreadsheet with existing pole counts, lamp types, wattages, fixture and pole description that includes pole height. Update existing “City Owned and Maintained Spreadsheet”. The City will provide data/information.
6. Reconcile City data and information with updated City Grid GIS Maps / PNM data base to essentially form a complete updated data base and GIS map for the City.

7. Provide an assessment of current City repair and maintenance practices with recommendations on methods, equipment and personal required to maintain existing street lighting infrastructure. The City will provide current maintenance practice information.

8. Upon completion of the Phase II tasks, the project may, at the City's discretion, continue into the Phase III.

### **PHASE III**

#### **DEVELOPMENT OF LIGHTING CONVERSION IMPLEMENTATION PLAN**

Using the information obtained in the Preliminary Field Assessment and Inventory, develop a Lighting Conversion Implementation Plan to include the following:

1. Detailed information on proposed lighting fixtures, control devices, software and hardware requirements including submittals.
2. Identify proposed schedule, phasing proposed, construction duration by location or by phasing ("Phasing Schedule").
3. Provide GIS based displays showing the Phasing Schedule by group or area.
4. Provide detailed information on lane closure requirements, project duration, equipment and man power requirement per Phasing Schedule.
5. Identify performance test methodology, the method, and systems procedures that identify performance testing of all major lighting system components.
6. Provide description and modality of implementing the lighting control system.
7. Describe startup procedure and detail commissioning process.
8. Identify deliverables method and means of handoff to the City.
9. Propose an energy conservation and maintenance reduction program for both City owned and maintained and City owned and PNM maintained street lighting.
10. Develop a report that identifies potential energy savings and maintenance reduction savings as a result of the Lighting Conversion Implementation.
11. Include equipment and lighting submittals on all major lighting components.
12. All materials proposed shall be listed in the Lighting Conversion Implementation Plan. The Offeror shall propose only materials that are UL listed, IESNA LM-80 tested approved by PNM under Customer Owned LED Fixtures and qualify for PNM rebates if applicable in the proposed Lighting Conversion Implementation Plan. In the event PNM does not have a Street lighting Customer Owner Equipment retail delivery service agreement for Solid State Lighting SSL

Sources in place. The City shall negotiate with PNM for an agreement to be put in place as part of the Lighting Conversion Implementation Plan.

13. All materials proposed shall be made in the USA. The Offeror shall furnish product specifications on all materials and equipment to be used in proposed implementation to ensure that such is made or constructed in the USA. **“Reference Exhibit A MSSLC Model Specification for LED Roadway Luminaires”** and **“Reference Exhibit B ROAM System Specification Guideline”** for implementation.

14. All materials proposed in the Lighting Conversion Implementation Plan shall conform to federal, state, local codes and ordinances, and the City of Albuquerque Lighting Standards. **“Reference Exhibit AMSSLC Model Specification for LED Roadway Luminaires”** and **“Reference Exhibit B ROAM System Specification Guideline”** for implementation.

15. All materials proposed in the Lighting Conversion Implementation Plan shall include all equipment manufacturers, materials and contractor warranties. The City requires a ten (10) year minimum warranty on all equipment and materials.

16. The successful Offeror will be required to conduct Regular Weekly Construction Progress Meetings to keep stakeholders informed. Tasks include:

- (a) Provide description of work completed the prior week and work scheduled for the week with a two week planned look-ahead.
- (b) Methods used to convey information shall be GIS maps, charts, schedules etc.
- (c) Requests for information (RFI's) shall be categorized and logged by requester, date requested, who responded, date responded and response to RFI. Contractor shall provide the City's Representative Project Manager with a copy for project records.
- (d) City's Representative Project Manager shall be kept informed on the progress and issues related to the construction/ implementation plan.

17. Develop a proposal for the costs to execute the Lighting Conversion Implementation Plan. The Lighting Conversion Implementation Plan shall be based on a complete turnkey project that includes total cost: road or lane closure costs, permitting, inspection fees, updated as-built City Street Lights Data, City Grid GIS Maps, and New Mexico Gross Receipts Tax on labor only. Any and all anticipated costs shall be identified in the Lighting Conversion Implementation Plan.

18. Upon the City's approval of the Lighting Conversion Implementation Plan and proposal for the costs, the project may, at the City's discretion, continue into the Phase IV.

**PHASE IV  
IMPLEMENTATION OF LIGHTING CONVERSION IMPLEMENTATION PLAN**

This Phase involves the implementation of the Lighting Conversion Implementation Plan, to include the tasks, deliverables, and activities as designated in the Plan. In addition, the successful Offeror will develop a plan to add lighting on both City-owned roadways and facilities utilizing fiscal savings of the Lighting Conversion Implementation Plan.

**Award of Contract**

On February 3, 2016, the Acting Director (Deputy Director) of the Department of Municipal Development, in a memo to the Chief Administrative Officer (CAO) stated:

*The City of Albuquerque Department of Municipal Development, in conjunction with the Department of Finance and Administrative Services, Purchasing Division, issued the subject solicitation. The solicitation was posted on the eProcurement website and advertised in the Albuquerque Journal.*

*Five responsive offers were received for evaluation.*

*The ad hoc committee was comprised of five voting member and three subject, matter experts with representatives from various divisions within the Department of Municipal Development, City administration and the Public Service Co. of New Mexico.*

*The ad hoc committee created a shortlist comprised of the top three firms. These three firms came in for presentations.*

*The ad hoc evaluation committee evaluated and scored the responses, in accordance with the evaluation criteria published in the RFP. Final composite scores for the top three respondents are as follows:*

<i>Citelum US, Inc.</i>	<i>4596</i>
<i>Ameresco</i>	<i>4550</i>
<i>Johnson Controls</i>	<i>4385</i>

*It is recommended that a contract be awarded to Citelum US, Inc. I concur with this recommendation.*

*The City of Albuquerque's Department of Municipal Development will manage this contract.*

## Contract

The final contract for this award was signed on September 2017 by the Acting Director of DMD, the Country Manager of Citelum US, Inc., and COA Chief Administrative Officer. In this Global Management Service Contract, the following excerpts are included:

### ARTICLE 1: Description of the System, Artistic Lighting and Smart City Instruments

#### a. System Layout

The layout of CLIENT's System is described in the RFP, Phase II Deliverable and Exhibit A and is within the city limits of Albuquerque, New Mexico. CONTRACTOR shall upgrade the Infrastructure of the System during the Works as set forth in Exhibit A. The scope of the System may be amended for the installation of additional street lights in the System.

#### b. System Data Inventory

CLIENT's street light assets that make up the System are set forth in Phase II Deliverable and Exhibit A. Assets vary in size (wattage), type (HPS, MV, etc.), and style (Cobra, post top, wall pack, etc.). The System assets are property of the CLIENT and/or CLIENT has the requisite rights to upgrade, operate and maintain the assets. CLIENT'S street light assets subject to this Agreement do not include any utility-owned street lights.

#### c. Artistic Lighting

Artistic Lighting shall be installed on CLIENT'S city hall, located at 1 Civic Plaza NW, Albuquerque, NM. A conceptual design and scope for each Artistic Lighting installation is set forth in Exhibit A. Technical specifications and drawing will be incorporated into Exhibit E accordingly.

#### d. Smart City Instruments

Smart City Instruments shall be installed on CLIENT'S System. The Smart City Instrument installation may include street light control nodes, network access points, dome security cameras, Wifi hotspots, and a digital platform. A conceptual design and scope of the Smart City Instruments installation is set forth in Exhibit A. Technical specifications and drawing will be incorporated into Exhibit E accordingly.

### ARTICLE 2: General Scope of Works

#### *2.1 General principles*

The Works, as described herein and in Exhibits A, C and D, shall be performed by CONTRACTOR in conformity with current standards, Applicable Laws and regulations, and in accordance with the prescriptions of this Schedule and associated appendices and exhibits. Except as otherwise expressly provided herein, CONTRACTOR shall provide all items necessary for the performance of the Works.

#### *2.2 Interim Period*

The Interim Period shall be the period between the Agreement's Effective Date and the Commencement Date. During the Interim Period, CONTRACTOR may perform any preparatory work and operations needed to mobilize for the Works, which may include, but is not limited to, the following:

1. Movement to, placement and set-up on project site of personnel, equipment, supplies and accessory items;
2. Establishment of offices, buildings and other needed facilities as well as utility work and connections needed for these facilities;
3. Scheduling details, coordination and any other work and expense appropriate prior to the start of Works under Agreement.

### *2.3 Operation and Maintenance of System*

(a) Commencing no later than the Commencement Date and until the Acceptance Date of the Final Segment of the Works, CONTRACTOR will operate and maintain the Existing System that has not been upgraded and that is part of the scope of Works. CONTRACTOR shall maintain Existing System at an overall lighting efficiency of approximately seventy percent (70%).

(b) Upon Acceptance of each Segment, CONTRACTOR shall operate and maintain the accepted Segment at a level consistent with its conditions upon its Acceptance Date. This level shall be maintained through the Acceptance Date of the Final Segment of the Works.

(c) Prior to the Acceptance Date of the Final Segment, any materials and equipment installed or used in order to repair or replace the Existing System or any Segments or portions of Segments that have been accepted will be provided for under the Services Payments up to an amount of \$100,000.00. Any costs for materials or equipment that exceed this amount during said operation and maintenance period shall be separately billed or surcharged on a time and materials basis and paid by CLIENT from sources other than the Revenue Fund, unless otherwise agreed to in writing. If the CLIENT lacks other available funds to pay for repair costs above the \$100,000.00 cap, CONTRACTOR shall not be obligated to make any such repairs until such other funds are made available. Upon approval by CLIENT, CONTRACTOR shall have the right to use CLIENT'S fixtures and materials for maintenance of the Existing System.

(d) CONTRACTOR'S operation and maintenance of Existing System and any Segments of the System that have received a Certificate of Acceptance will be compensated under the Services Payments in accordance with Article 6 of the Agreement and Schedule 4 (Payment Schedule) below during the Works Phase. The terms and conditions of Schedule 3 (Scope of Services) and Appendix 3A, "Services Performance Objectives and Penalties/Incentives" to Schedule 3 are not applicable to and not enforceable under the

operation and maintenance of the Existing System or accepted Segments of the System prior to Acceptance Date of the Final Segment of the Works.

#### *2.4 Works: Project Upgrade*

CONTRACTOR shall perform the installation of the Infrastructure, Smart City Instruments and Artistic Lighting in accordance with Exhibit A ("Phase III, Lighting Conversion Implementation Plan"), Exhibit C ("Calendar of Execution") and Exhibit D ("Schedule and Breakdown of the Works").

##### 2.4.1 Modifications to Calendar of Execution and Schedule of Works

CLIENT may request adaptations and modifications to the work schedule set forth in Exhibit C and D, provided that the request is made in writing and made no later than thirty (30) days before the submission of the required authorizations and applicable approvals. Notwithstanding the foregoing, for any adaptation and modifications to the work schedules for urban redevelopment or city-owned projects, CLIENT shall request any modifications at least sixty (60) days prior to the submission of the required authorizations.

Upon CLIENT's request, CONTRACTOR shall study and define the technical, economic and financial impacts of the scheduling adaptations and modifications and provide the CLIENT with a proposal for CLIENT's requests. Any scheduling adaptations or modifications must be agreed to in writing by both Parties and any financial or other consequences related to any requested scheduling adaptations or modifications that are subsequently implemented will be borne by CLIENT.

If a change of the schedule requested by CLIENT directly causes a delay in the acceptance of any Segment, the direct or indirect consequences, including costs, will be borne by CLIENT.

##### 2.4.2 Conditions of Execution of the Works & Safety Program

Conditions of Execution of the Works. Prior to starting the Works, CONTRACTOR will obtain all requisite information and authorizations and fulfill all administrative requirements necessary for the performance of the Works. CONTRACTOR shall provide CLIENT an organizational plan of the Works to be performed, indicating the access requirements and installation requirements for the worksites and any plans to limit the impacts on the surrounding areas.

Safety Program. CONTRACTOR will make a commercially reasonable effort to ensure safety at the worksites and their surroundings areas for the entire duration of the Works in accordance with all Applicable Law. In carrying out its responsibilities herein, CONTRACTOR shall (a) protect the lives and health of persons performing the Work and other persons who may be affected by the Work and shall erect and maintain all necessary safeguards for such safety and protection; (b) prevent damage and theft to materials, supplies, and equipment whether on worksites or stored off worksites; and (c) prevent damage to other property at worksites or adjacent thereto. CONTRACTOR shall

provide CLIENT with a safety plan within thirty (30) days from Commencement Date.

#### 2.4.3 Progress Reports; Status Meetings

Progress Reports. CONTRACTOR shall periodically, but at least monthly, provide CLIENT progress reports pertaining to the Works detailing all ongoing tasks and the progress made with respect to the Calendar of Execution and the Schedule and Breakdown of the Works.

Status Meetings. Status meetings during the Works Phase will be held on a bi-weekly basis, and may be attended by Authorized Representatives and all persons designated by CLIENT and CONTRACTOR. Meeting times and frequency will be modified upon CONTRACTOR or CLIENT mutual agreement. Meeting minutes shall be recorded by CONTRACTOR for each meeting.

#### 2.4.4 Project Commissioning and Acceptance

Project Commissioning. The Commissioning and Quality Assurance Plan in Exhibit G establishes procedures for commissioning each Segment of the Works. Upon completion of a Segment of the Works, CONTRACTOR, in concert with CLIENT, shall conduct a thorough and systematic performance test of each element of the completed Segment of the Works per the terms of the plan. CONTRACTOR shall correct or adjust any deficiencies in accordance with Schedule 5 and the Commissioning and Quality Assurance Plan.

Acceptance. Acceptance of Work or Segment of Work shall be in accordance with the procedures established in Section 3.7 of the Main Body of the Agreement and Schedule 5.

### *2.5 Modification of the Works*

Based on specific needs of CLIENT, CLIENT and CONTRACTOR may modify the scope of the Works by executing a Change Order upon mutual written agreement that is executed by both Parties. The Change Order shall specify the agreed upon terms and conditions of any modification of the scope of the Works. Except as provided for in Section 1.3 of the Main Body of the Agreement, the Change Order shall constitute full and final settlement of all claims arising from or related to any Work either covered or affected by the Change Order or related to the events. All Change Orders must be approved and signed by CLIENT Representative and CONTRACTOR Representative or their authorized designees.

### *2.6 Monitoring of the Works*

#### 2.6.1 MUSE: Real-Time Monitoring of Works

Throughout the Works Phase, CONTRACTOR will implement its Computerized Maintenance Management System ("MUSE"), to monitor the progress of the Works. The CONTRACTOR will use MUSE to measure the timeline of the upgrades and monitor its crews on a real-time basis. All Infrastructure and Artistic Lighting installations and repairs made to the System, including poles & fixture types, drivers, LED kit, etc., will be

updated in MUSE to reflect new field conditions. Built-in work order schedules will be entered into MUSE to ensure that the proper equipment and materials are on the trucks before they leave the facility.

CLIENT shall have a real-time access to MUSE to monitor the status of the streetlight asset upgrade.

### 2.6.2 Construction Monitoring

CONTRACTOR shall perform checks at the end of each workday to ensure that all work performed is functioning as intended.

### 2.6.3 Operating Center

Within ten (10) days of the Commencement Date, an Operating Center will be established which shall have the requisite personnel, technology and equipment to monitor the indicators (MUSE reports), System alerts and the real-time location of site technicians for a holistic status of the System, Smart City Instruments and Artistic Lighting installations.

The Operating Center shall be equipped to analyze problems, communicate with site technicians and supervisors, track issues through resolutions, and escalate problems when appropriate. For emergencies or disasters, the Operating Center shall have established procedures in place to immediately contact the correct team and respond appropriately.

Responsibilities of Operating Center personnel will include:

- Phone hotline management
- Streetlight monitoring
- Emergency response
- Repairs and upgrade monitoring
- Communication and reporting between the field teams, headquarters, and the CLIENT
- MUSE administration (database updates and treatment of the work orders)

### *2.7 Waste Management & Recycling during the Works Phase.*

During the Works Phase, recycling management processes will be integrated throughout CONTRACTOR's day- to-day operation (ISO 9001-14001). CONTRACTOR shall procure and/or maintain the appropriate recycling and disposal facilities.

### *2.8 Project and Performance Baseline Inventory*

CONTRACTOR has conducted a baseline audit of the operational performance of the System and has provided CLIENT with the full inventory of the assets, which has been incorporated into MUSE, and relied on as the System Baseline under Section 1.1 of Appendix 3A "Services Performance Objectives and Penalties/Incentives" of Schedule 3.

Pursuant to Section 5.1 of the Main Body of the Agreement, no later than thirty (30) days prior to the Acceptance Date of the Final Segment of the Works, CONTRACTOR shall conduct an audit and inventory of the operational performance of the System after all the Infrastructure is installed. If additional Energy Savings are recognized after the audit and inventory, CONTRACTOR shall integrate and use all resulting data to calculate and revise the Performance Baseline and adjust Section 1.1 of Appendix 3A "Services Performance Objectives and Penalties/Incentives" of Schedule 3, accordingly.

#### *2.9 Measurement and Verification Plan: Energy Savings*

Within sixty (60) days of the Commencement Date, CONTRACTOR shall provide CLIENT with a written Measurement and Verification Plan (M&V Plan), which shall be based on the International Performance Measurement and Verification Protocol (IPMVP). The M&V Plan shall provide the CLIENT with an accurate assessment of Energy Savings for an Annual Period and identify any Savings Excess or Savings Shortfall for the corresponding Annual Period in accordance Performance Assurance Reconciliation of Appendix 3A of Schedule 3 below.

#### ARTICLE 3: Technical Scope of Works:

The technical Scope of Works is detailed in Exhibit A (Phase III: Lighting Conversion Implementation Plan).

#### ARTICLE 4: Technical Specifications and Drawings:

The Works shall be performed in accordance with the technical specifications and drawing set forth in Exhibit E.

#### **Interview of Complainant:**

On January 22, 2018 and on October 7, 2019, CIT-1, former employee of Citelum, provided the following information regarding his allegations of fraudulent activity within the contracting activities and street lighting project for the COA.

He advised that he was hired by Citelum, a French company, with a presence in the United States, to represent their interests to the City of Albuquerque, in the street lighting project, known as the "Smart City" platform and to coordinate with the City in the associated contract. He said that he specifically was given the responsibility of developing the proposal and obtaining the contract for the company. He said he was required to accomplish an inventory of existing street lights, take pictures of lighting, develop a Global Positioning System (GPS) data base of light locations and complete a master lighting plan. He said the contract was written for multiple phases of the project, and that he was hired in November 2016. He was specifically hired to establish an office and warehouse in Albuquerque. He was hired to maintain a fifteen (15) year contract. He employed five individuals to provide assistance with his responsibilities.

He provided names of additional individuals that were hired to support the project to include a superintendent and journeyman. He stated that these individuals were hired after his termination. He disclosed that his employment was terminated by Citelum in October 2017. CIT-1 stated that he was pursuing a lawsuit against the company. He was told the reason for his termination was because he did not sufficiently 'contribute' to the team.

CIT-1 stated that prior to his dismissal, the contract was signed and that the budget included "six percent, which was not touchable." He explained that the six percent was for "success fees," which he claimed that his "boss" told him was "confidential and highly illegal." He said that he understood that the six percent represented fees paid to two attorneys for their involvement in securing the contract. Specifically, an Albuquerque based attorney and President and CEO of the "Carmen Group" in Washington, District of Columbia (DC), each received three percent of the value of the contract. He claimed that the former Mayor had taken many trips to DC, where the Carmen Group was lobbying him for the project. He said he knew this because the Business Development Director for Citelum US, learned of the visits and lobbying from former City of Albuquerque, Chief Operating Officer (COO). He claimed that both Business Development Director and Former COO had a relationship with each other. He recalled there were about five to six visits between the former Mayor and the Carmen Group CEO during a six month period. CIT-1 stated that these meetings typically occurred when the former Mayor would attend Council of the Mayor's meetings in DC. He said that Citelum would contract with the Carmen Group and meet with the former Mayor during the DC trips.

CIT-1 said that he set up a "mock-up" for City Councilors with different lighting fixtures, on Martin Luther King Avenue. Other tasks included having a drone flyover of the area. He said there were also discussions of having artistic lighting, with one example being the portrayal of the Eiffel Tower. He said a selling point for Citelum contracts was their artistic lighting. He said that Citelum manages about 2.5 million lights.

He said that in the initial proposal, Citelum would remotely monitor all street lights, which would require monitoring technology in each street light, but that the budget fell short of the amount needed to make that happen. As a result, he said, an individual would need to "drive from point "A" to point "Z" to ensure all lights are operating. He added that the City owns the geographical database to pinpoint each light location. He suggested reviewing the contract to determine if a monitoring system was required by the contract. He recalled that staff assigned to the DMD requested to have a node installed with every street light, so he believed the technology for monitoring the lights was in place. He said that these individuals were disappointed because they were not included in the contract process.

CIT-1 said that there was no indication that anyone received compensation in the form of kickbacks or bribes, but he had suspicions of this happening. He referenced the meetings in DC with the former Mayor, and also commented that Albuquerque was the first city to implement LED lighting.

Regarding his employment circumstances, he said that he was an "at-will" employee, but that Citelum failed to provide what they agreed to, to include a company vehicle (this investigation cannot and will not address this topic).

Complainant stated that staff at IWI Lighting for GE knew of the City's interest in GE lights. CIT-1 said that COA staff were interested in GE lights because Aquity was not "up to speed" and was an inferior product, as compared to the GE lights. CIT-1 said that the Aquity lights might be priced at a lower cost than GE. He also asserted that he learned from Citelum staff that the information Citelum presented regarding GE lights was five years old. CIT-1 expressed that he believed these assertions to be untruthful and recalled these conversations occurred about two days prior to him being terminated.

He recalled several months before his termination that GE contacted him expressing concern and asked if the contract with the City of Albuquerque was already signed. He said that Citelum contacted GE and asked about dates. He said at that time a person representing Aquity stated they had already signed the contract with Citelum. CIT-1 informed GE that the contract had been awarded.

CIT-1 said that after his termination, in approximately March or April, 2017, the Citelum in-house counsel oversaw the consolidation of all Citelum companies in the United States. He said that this attorney was instrumental in the contract with the COA.

CIT-1 stated that he informed COA staff about the six percent of the contract funds going to the two attorneys. He recalled that he was told that both the COA and Citelum did "their best" and that he just had to be "comfortable" with it.

Finally, CIT-1 stated that the process of installing street lights may have led to a "bait and switch." He said there should have been three types of lights installed – 3,000, 3,500 and 4,500 Kelvin, but he believed Citelum had installed 2,700 Kelvin. He said he believed Citelum had deviated from the "master plan" by installing "cheaper" fixtures.

### **Interview of Council Services Staff:**

On January 18, 2018, Council Finance Officer (FO) and Senior Council Policy Analyst (SCPA) and attorney were interviewed to ascertain their knowledge regarding the street lighting project, to include the terms of how the project would be funded.

FO advised that the contract with Citelum was the first time that she had seen this type of contract. SCPA said that the street lighting project used a different type of award process and that the initial phase of the project dictated who would be awarded the contract for the "heavy work." SCPA said that Citelum bid very low on the initial phase because they knew the contract in the later phases would result in more money.

SCPA also said that the Albuquerque neighborhoods were supportive of the project based on the belief the new lighting would lead to crime reduction.

SCPA said that there were issues with the Public Utilities Service of New Mexico (PNM), regarding the replacement and maintenance of street lighting, specifically concerning which

lights belonged to PNM and which lights were owned by the City. SCPA said perhaps the project was an effort to allow the City to “get away” from PNM as the provider.

Both FO and SCPA advised that they were never present at any of the meetings held by the City Purchasing Office or Department of Municipal Development, regarding the street lighting project. Additionally, neither of them participated in the Source Selection Committee meetings.

SCPA questioned the reality of energy savings from the street lighting project and questioned cost savings. SCPA expressed concern regarding the New Mexico Public Regulatory Commission (PRC) rate classes and said that street lights have a Rate Class of 20 with PNM. He said that PNM was trying to obtain PRC approval for an increase in the charges. He said that Class 20 did not receive an increase in the rates. He said that every three to five years, PNM adjusts the classes and the cost savings in the contract are based upon that. He said the next time, the rate for Class 20 may increase and savings may not materialize. He said that payments come “from activity in 305” and that monies are segregated in a special fund. He said that savings must remain there and could not be touched until the contract is complete.

They indicated that in addition to the concerns expressed by one City Councilor, regarding the contract, and an additional Councilor also expressed his thoughts, but that he was in favor of the project. A third Councilor questioned whether the recipient of the initial project phase contract would also be entitled to receiving the contracts for the later phases. Neither SCPA nor FO were satisfied by administrations responses during Council approval.

#### **Receipt and Review of Ad Hoc Selection Committee Scorecards:**

The individual score cards for the selection of the contractor for the City street lights replacement project were reviewed. For three of the five reviewers, detailed notes were added in the ‘Strengths’ section to aid in demonstrating how they arrived at each particular score. Below is a table that depicts the five companies who submitted a proposal and the scores and comments of each of the five members of the Ad Hoc Selection Committee. In addition, a Campaign Contributors report was ran for each of the five companies that were evaluated. For each of these companies who bid, there were no campaign contributions found.

"Evaluation and Implementation of Energy Efficiency and Reduced Maintenance on City Owned and Maintained Street Lighting"

Evaluation Factors	Points	Ameresco Score	B & D Score	Citelum Score	Johnson Controls Score	Tanko Score
The Offeror's Past Experience and past performance on projects of similar scope and size; experience and qualifications of the Offeror and personnel as shown on staff resumes and Project Consultant Team Listing to perform tasks described in Part 3, Scope of Services and adequacy of proposed project management and resources to be utilized by the Offeror.	Up to 200					
Evaluator #1		190	100	195	190	150
Evaluator #2		195	100	180	180	180
Evaluator #3		180	178	198	190	185
Evaluator #4		200	100	200	200	150
Evaluator #5		175	125	200	170	180
<b>Total</b>		940	603	973	930	845
The Offeror's Proposed Approach to Tasks and plans to meet the requirements of the RFP.	Up to 300					
Evaluator #1		280	125	275	275	250
Evaluator #2		285	150	280	270	245
Evaluator #3		275	270	290	285	255
Evaluator #4		250	175	300	200	200
Evaluator #5		280	175	300	220	240
<b>Total</b>		1370	895	1445	1250	1190
Project Schedule and the overall ability of the Offeror, as judged by the evaluation committee, to successfully complete the project within the Offeror's proposed Project Schedule. This judgment will be based upon factors such as the project management plan and availability of staff and resources.	Up to 300					
Evaluator #1		250	125	290	200	210
Evaluator #2		270	100	275	260	280
Evaluator #3		270	280	288	270	250
Evaluator #4		275	150	250	275	200
Evaluator #5		275	125	275	200	280
<b>Total</b>		1340	780	1378	1205	1220
Cost Proposal - The costs proposed by the Offeror as described in Section 2.2 of this RFP to perform the tasks listed in Part 3, Scope of Services, Phase I Preliminary Field Assessment and Inventory Plan. The evaluation of this section will occur after the technical evaluation, based on a cost/price analysis.	Up to 200					
Evaluator #1		180	190	160	200	170
Evaluator #2		180	190	160	200	170
Evaluator #3		180	190	160	200	170
Evaluator #4		180	190	160	200	170
Evaluator #5		180	190	160	200	170
<b>Total</b>		900	950	800	1000	850
Vendors		Ameresco	B & D	Citelum	Johnson Controls	Tanko
Points Subtotal		4550	3228	4596	4385	4105
Resident Business Preference			161			
<b>Total</b>		4550	3389	4596	4385	4105

**Meeting and Document Review with DMD staff and OIG/OIA staff**

A meeting was held with two investigators and an auditor of the OIG on February 20, 2020 to review the previously conducted and aforementioned interviews, the allegations taken from those interviews and the contract and performance with four senior staff members at DMD.

During this meeting and subsequent follow-up discussions and emails, the following information was reviewed, discussed and statements made:

- In schedule 3, scope of services, the contract references the needs for energy saving and programs to measure reconcile and optimize it. Contractor was to review COA's energy bills and provide strategies to optimize its energy supply, pricing and terms; to follow-up, verify and validate invoices for the consumption of electric energy; and assist with claims against the energy supplier in cases of problems with the quality. Schedule 3 article 1.3. DMD staff stated that pricing and terms with our provider (PNM) are regulated by the PRC. The COA is not in a situation where we are able to purchase electricity on the wholesale market and control those terms. The COA does not have a supply contract with PNM. Additionally, the vast majority of our streetlights are not metered, and there is no measurement of electricity consumption. The COA has not consented to this review because it does not seem worthwhile.
- When asked 'what artistic lighting was completed on City Hall as per schedule 2, article 1, c.', COA staff referenced that there were a couple of amendments/addendums to the contract. The first amendment changed exhibit a, artistic lighting.
- COA staff provided a list and explanation of the Smart City instruments that were installed as per schedule 2, article 1, d., which included thirty (30) License Plate recognition cameras and the related hardware and software, 250 lighting smart nodes and related routers including the specifications for the cameras, smart nodes and routers. The contract addendum dated June 2018 addresses the smart city instruments.
- There have not been any work phase penalties assessed for the respective KPI's listed in the table in appendix 2A to schedule 2, as the conversion was substantially complete by the deadline.
- There has not been any performance penalties assessed as per 4.1.3, operations and maintenance during the course of this contract.
- The city utilizes the standard published by the Illuminating Engineers Society (IES) for roadway lighting.
- COA staff sampled lighting installations for light output (per IES) as sections of the project progressed.
- COA bills from PNM that relate to streetlights are significantly lower than they previously were.
- The contract covers street lights that are 'out' for being faulty. However, most if not all lights that are out, and subsequently reported by citizens, are for: Copper theft, accidents, weather related damage, or vandalism. In addition, not all lights in the COA are covered by Citelum, as PNM currently owns and services 11,619 lights.

## Conclusion

It should be noted, prior to the conclusion being provided, that many of the claims and much of the information brought forth by the complainant concerns his employment with Citelum, a private company and his allegations of retaliation, allegations of private business dealings, and allegations of retaliatory termination from employment. The OIG will not address those claims as they are not under the authority of the OIG.

For each of the initially outlined objectives of this investigation, the following was found and concluded by the OIG:

1. *The original complainant stated that Citelum submitted the highest priced proposal to the City, but was still awarded the contract.*

A Request for Proposal (RFP), Solicitation Number P2016000023 was made public on October 9, 2015 entitled *Evaluation and Implementation of Energy Efficiency and Reduced Maintenance on City Owned and Maintained Street Lighting*. In response to this RFP, five companies submitted proposals.

An email was sent to the Acting Chief Procurement Officer by the OIG on February 21, 2020 seeking copies of all documents submitted for the RFP on this solicitation. A response was received indicating that the complete RFP files, with all the documents submitted by the five companies, were destroyed in accordance with the COA's file destruction schedule of three years. For this reason, the submitted price of each company bidding could not be reviewed.

However, the individual score cards for the selection of the contractor for the City street lights replacement project was reviewed. For three of the five reviewers, detailed notes were added in the 'Strengths' section to aid in demonstrating how they arrived at each particular score.

On February 3, 2016, Acting Director (Deputy Director) of the DMD, in a memo to the CAO, indicated her support, with the documentation from the ad hoc review committee, of the selection of Citelum for the award of the contract. The final contract for this award was signed on September 2017 by Acting Director of DMD, the Country Manager of Citelum, and Chief Administrative Officer.

2. *The Complainant stated that the process of installing street lights may have led to a "bait and switch." He said there should have been three types of lights installed – 3,000, 3,500 and 4,500 Kelvin, but he believed Citelum had installed 2,700 Kelvin. He said he believed Citelum had deviated from the "master plan" by installing "cheaper" fixtures.*

To review this allegation, an inventory of the installed lights was reviewed as well as the wording in the contract regarding the types of lights. In addition, DMD staff were questioned in regards to the types of lights utilized.

Research into the meaning of Kelvin (K) as it refers to lighting, showed that Kelvin refers to color temperature:

- At the lower end of the scale, from 2000K to 3000K, the light produced is called “warm white” and ranges from orange to yellow-white in appearance;
- Color temperatures between 3100K and 4500K are referred to as “cool white” or “bright white.” Light bulbs within this range will emit a more neutral white light and may even have a slightly blue tint; and
- Above 4500K brings us into the “daylight” color temperature of light. Light bulbs with color temperatures of 4500K and above will give off a blue-white light that mimics daylight

Color Temperature (KELVIN)	2000K - 3000K	3100K - 4500K	4600K - 6500K
Light Appearance	Warm White	Cool White	Daylight
Ambience	Cozy, calm, inviting, intimate	Bright, vibrant	Crisp, invigorating
Best for	Pendants, wall/coach lanterns, restaurant/commercial ambient lighting, residential recessed lighting, table & floor lamps	Basements, garages, work environments, task lighting	Display areas, security lighting, garages, task lighting

When current DMD staff were asked, staff recalled that the original layout design for the street lighting color temperatures was 3,000K, 3500K, and 4000K. The 3000K (Warm) color temperature was designated for residential areas in the contract. Managers in place at that time were concerned that the color temperature might be uncomfortable for residential areas. They allowed Citelum to run a pilot demonstration installing 2700K LED light fixtures in residential areas to get feedback from the public on the color output of the fixture. The comparisons between the 2700k and 3000k fixtures were that they were hardly noticeable Citelum was instructed to comply with the original design for 3000K for residential 3500K, for collector and 4000K for arterial streets.

The 2700K fixture meets the IES Standards and currently the COA does have some residential areas utilizing the 2700K lights. They are the same wattage, include the same fixture, and are same price as the 3000K. In addition, the output is the same. An internet search of street lights purchases with both 2700K and 3000K, showed numerous companies which sold such lights and the prices did not differ.

3. *Complainant stated that prior to his dismissal, the contract was signed and that the budget included “6% which was not touchable.” He explained that the six percent was for “success fees,” which he claimed that his “boss” told him was “confidential and highly illegal.” He said that he understood that the six percent represented fees paid to two attorneys for their*

*involvement in securing the contract. Specifically, an Albuquerque based attorney the President and CEO of the “Carmen Group” in Washington, District of Columbia (DC), each received three percent of the value of the contract. He claimed that the former Mayor had taken many trips to DC, where the Carmen Group was lobbying him for the project. He said he knew this because the Business Development Director for Citelum US, learned of the visits and lobbying from former City of Albuquerque, Chief Operating Officer. He claimed that both Business Development Director and the former COO had a relationship with each other. He recalled there were about five to six visits between the former Mayor and the Carmen Group during a six month period. He said these meetings typically occurred when the former Mayor would attend Council of the Mayor’s meetings in DC. He said that Citelum would contract Carmen Group and direct him to meet with the former Mayor during the DC trips.*

“Lobbying” means attempting to influence (1) a decision related to any matter to be considered or being considered by the legislative branch of state government or any legislative committee or any legislative matter requiring action by the governor or awaiting action by the governor; or (2) an official action. N.M. Stat. Ann. § 2-11-2.

“Lobbyist” means any individual who is compensated for the specific purpose of lobbying; is designated by an interest group or organization to represent it on a substantial or regular basis for the purpose of lobbying; or in the course of his employment is engaged in lobbying on a substantial or regular basis. N.M. Stat. Ann. § 2-11-2.

“Lobbyist” does not include: (1) an individual who appears on his own behalf in connection with legislation or an official action; (2) any elected or appointed officer of the state or its political subdivisions or an Indian tribe or pueblo acting in his official capacity; (3) an employee of the state or its political subdivisions, specifically designated by an elected or appointed officer of the state or its political subdivision, who appears before a legislative committee or in a rulemaking proceeding only to explain the effect of legislation or a rule on his agency or political subdivision, provided the elected or appointed officer of the state or its political subdivision keeps for public inspection, and files with the secretary of state, such designation; (4) any designated member of the staff of an elected state official, provided the elected state official keeps for public inspection and files with the secretary of state such designation; (5) a member of the legislature, the staff of any member of the legislature or the staff of any legislative committee when addressing legislation; (6) any witness called by a legislative committee or administrative agency to appear before that legislative committee or agency in connection with legislation or an official action; (7) an individual who provides only oral or written public testimony in connection with a legislative committee or in a rulemaking proceeding and whose name and the interest on behalf of which he testifies have been clearly and publicly identified; or (8) a publisher, owner or employee of the print media, radio or television, while gathering or disseminating news or editorial comment to the general public in the ordinary course of business. N.M. Stat. Ann. § 2-11-2.

***New Mexico Statutes 2-11-8. Contingent fees prohibited in lobbying the legislative branch of state government*** states that No person shall accept employment as a lobbyist and no lobbyist’s employer shall employ a lobbyist for compensation contingent in whole or in part upon the

outcome of the lobbying activities before the legislative branch of state government or the approval or veto of any legislation by the governor.

Further, Albuquerque Code of Ordinances, Article three defines Lobbyist:

Any individual who is directly or indirectly compensated for the specific purpose of lobbying; is designated by an individual, interest group, or organization or entity to represent it on a substantial or regular basis for the purpose of lobbying; or in the course of his employment is engaged in lobbying on a substantial or regular basis. "Lobbyist" does not include:

- (1) An individual who appears on his own behalf in connection with an official action.
- (2) Any elected or appointed officer of the state or its political subdivisions or an Indian tribe or pueblo acting in his official capacity.
- (3) An employee of the state or its political subdivisions, specifically designated by an elected or appointed officer of the state or its political subdivision, who appears before the City Council, Council Committee, or a rulemaking proceeding only to explain the effect of legislation or a rule on his agency or political subdivision, provided the elected or appointed officer of the state or its political subdivision keeps for public inspection, and files with the secretary of state, such designation.
- (4) Any designated member of the staff of the Mayor of the City of Albuquerque, provided the Mayor keeps for public inspection and files with the City Clerk such designation.
- (5) A member of the City Council or the staff of the City Council when addressing legislation.
- (6) Any witness called by a Council Committee or administrative department to appear before that committee or department in connection with legislation or an official action.
- (7) An individual who provides only oral or written public testimony in connection with a City Council or Committee or in a rulemaking proceeding and whose name and the interest on behalf of which he testifies have been clearly and publicly identified.
- (8) A publisher, owner or employee of the print media, radio or television, while gathering or disseminating news or editorial comment to the general public in the ordinary course of business.
- (9) A representative or officer of an officially recognized Albuquerque Neighborhood Association or Homeowners Association who speaks on behalf of that Association.

The first alleged lobbyist is registered with the City of Albuquerque in February of 2017 and listed as his official action that he supports or opposes, "any and all matters that pertain to Citelum". No registration was discovered for the Carmen Group.

A voucher search was completed in the account payable work center for the COA for the names of Carmen Group and or the other alleged lobbyist. A search of this system would pre-date the contract. No COA payments were found to have been made to any of the individuals or entities listed or mentioned by the complainant.

Based on these definitions, as detailed above, no payments being issued and the comments made by the complainant regarding his former employer, a private company, it is clear that his allegations are not applicable to COA as no wrong doing by the COA could be seen. In addition, the complainant is also seeking relief and has included this alleged violation in Complaint filed in the 2<sup>nd</sup> Judicial District Court, case no D-202dCV-2018-07525.

4. *The complainant stated that in the initial proposal, Citelum would remotely monitor all street lights, which would require monitoring technology in each street light, but that the budget fell short of the amount needed to make that happen. As a result, he said, an individual would need to “drive from point “A” to point “Z” to ensure all lights are operating. He added that the City owns own the geographical database to pinpoint each light location. He suggested reviewing the contract to determine if a monitoring system was required by the contract.*

The signed and executed contract stated, in *schedule 2, scopes of works, article 1, section D, Smart City Instruments* that Smart City Instruments shall be installed on CLIENT'S System. The Smart City Instrument installation may include street light control nodes, network access points, dome security cameras, Wifi hotspots, and a digital platform. A conceptual design and scope of the Smart City Instruments installation is set forth in Exhibit A. Technical specifications and drawing will be incorporated into Exhibit E accordingly.

In addition, the contract states, in *article 2, general scopes of works, 2.6 monitoring of works* the following:

#### 2.1.1 MUSE: Real-Time Monitoring of Works

Throughout the Works Phase, CONTRACTOR will implement its Computerized Maintenance Management System ("MUSE"), to monitor the progress of the Works. The CONTRACTOR will use MUSE to measure the timeline of the upgrades and monitor its crews on a real-time basis. All Infrastructure and Artistic Lighting installations and repairs made to the System, including poles & fixture types, drivers, LED kit, etc., will be updated in MUSE to reflect new field conditions. Built-in work order schedules will be entered into MUSE to ensure that the proper equipment and materials are on the trucks before they leaves the facility.

CLIENT shall have a real-time access to MUSE to monitor the status of the streetlight asset upgrade.

#### 2.1.2 Construction Monitoring

CONTRACTOR shall perform checks at the end of each workday to ensure that all work performed is functioning as intended.

### 2.1.3 Operating Center

Within ten (10) days of the Commencement Date, an Operating Center will be established which shall have the requisite personnel, technology and equipment to monitor the indicators (MUSE reports), System alerts and the real-time location of site technicians for a holistic status of the System, Smart City Instruments and Artistic Lighting installations.

The Operating Center shall be equipped to analyze problems, communicate with site technicians and supervisors, track issues through resolutions, and escalate problems when appropriate. For emergencies or disasters, the Operating Center shall have established procedures in place to immediately contact the correct team and respond appropriately.

Responsibilities of Operating Center personnel will include:

- Phone hotline management
- Streetlight monitoring
- Emergency response
- Repairs and upgrade monitoring
- Communication and reporting between the field teams, headquarters, and the CLIENT
- MUSE administration (database updates and treatment of the work orders)

After review with many staff members with the COA and, in addition, review of reports within MUSE and the MUSE system with the OIA team, it was demonstrated that Citelum and the COA are in compliance with this portion of the contract. In addition, staff also indicated that there is a great working relationship and immediate communications regarding lights and repairs.

*5. Complainant stated that COA staff and staff of IWI Lighting for GE, knew of the City's interest in GE lights. He said that COA staff were interested in GE lights because Aquity was not "up to speed" and was an inferior product, as compared to the GE lights. He said that the Aquity lights might be priced at a lower cost than GE. He also asserted that he learned that the information Citelum presented regarding GE lights was five years old. He was told by Citelum Staff that the cost equivalent was the same for both products. He was also told that Citelum was not going to use GE because it was inferior to Aquity and GE could not meet the required delivery dates, but he believed this to be a misrepresentation of the truth. He also said that Citelum, has said that the two products were the same. CIT-1 believed that assertion to be untruthful as well. He recalled these conversations occurred about two days before he was terminated.*

In the contract entitled *Global Management Performance Contract between City of Albuquerque and Citelum US, Inc* or any of the subsequent amendments thereto, there is no language stating which brand of lights would be utilized nor required.

Citelum did provide the COA with a Material Selection Rationale (See attached Exhibit One (1) for the complete document). This document is not dated so it is unclear as to when it was created or provided to the COA. However, in the document, Citelum stated that both Acuity and GE are well respected manufacturers that produce very high-quality luminaires but that ultimately

Acuity models generally offered greater advantages in the forms of lighting performance and energy efficiency to COA than their GE counterparts. Citelum states that they selected to use Acuity luminaires to replace all cobraheads along local, collector, and major roads and GE luminaires along all ramps and highways. Additionally, Citelum has selected to install Acuity luminaires for all ‘miscellaneous’ functional lighting types, including shoeboxes, underpass lights, flood lights, and high masts.

In addition, in this document, Citelum created a chart which detailed each light type, their wattage and cost. In all instances except one, the cost for the Acuity choice was at a lower cost than the GE brand and in all cases, the wattage was higher for the Acuity brand light type.

A review of emails that were obtained by the OIG from 2017 and 2018 demonstrated that COA, PNM and Citelum staff corresponded about the types of lights and the corresponding ‘spec’ sheets for each type. In these emails, and of note, was:

- PNM staff indicating that “the excel sheet says 111W but the spec sheet provided said 112W. The spec sheet looks different than GE’s current online spec sheet. Could you review and resubmit? This one isn’t a big deal as it’s the same rate bucket, but it would be nice to have everything line up”.
- COA staff stating that “we have to get this right from the get-go so we have the actual corresponding spec sheet with what is physically being installed”.

After review of the contract and the subsequent emails (the majority of the staff initially involved are no longer employed by the COA due to a change in administration and some retiring), it appears that the incorrect spec sheets, which were for both Acuity and GE were addressed and corrected during a review (and not as it related to an alleged ‘bait and switch’ since that was not in the contract).

### **Additional Review/Audit of the Contract and areas of compliance**

The contract, in section 3.7, *Acceptance*, page 12 states that the acceptance date for each segment of the works shall occur when:

- (a) A segment of the works is complete, in accordance with schedule 5, the start-up and commissioning thereof is complete and the Infrastructure, Smart City Instruments and Artistic Lighting, (if applicable) included in the segment of the works, as detailed in Schedule 2 (scope of Work), may be utilized for their intended use;
- (b) Contractor shall have delivered to client, lien waivers, sworn statements, guarantees, full releases, discharges, or other evidence reasonably satisfactory to client that there are no liens, claims or notices in respect thereof pending, filed or threatened against client, contractor, or the infrastructure, smart city instruments and artistic lighting whatsoever in respect to that segment of works;

- (c) Contractor shall have delivered all certificates of inspection or approval in respect of the segment of works to the extent required under applicable law from any governmental authority; and
- (d) Client has issued a certificate of acceptance for the segment of works in accordance with schedule 5 (acceptance procedures).

Certificates of Substantial Completion and Certificates of Acceptance were completed between the COA and Citelum and they were reviewed during this investigation and audit.

- Certificates of Substantial Completion and Certificates of Acceptance for Segment 1 was executed in May 2018 and states that in accordance with the commissioning and quality assurance plan and schedule 5 of the agreement, Citelum US, Inc has reviewed the works under this agreement for the above referenced segment and has found that the works is substantially complete and can be utilized for its intended use. Contractor hereby submits this Certificate of the Substantial Completion to the COA for the above reference segment of the works.
- Certificates of Substantial Completion and Certificates of Acceptance for Segment 2 was executed in November 2018 and states that in accordance with the commissioning and quality assurance plan and schedule 5 of the agreement, Citelum US, Inc has reviewed the works under this agreement for the above referenced segment and has found that the works is substantially complete an can be utilized for its intended use. Contractor hereby submits this Certificate of the Substantial Completion to the COA for the above reference segment of the works.

In addition, the OIG worked with the OIA to conduct a review of the Scopes of works of this contract, to ensure completion of each of the measurable objectives. After meetings with various COA staff and a document review, the attached audit, exhibit two (2), demonstrates compliance (see Scope of Work Review).

Each year, a Global Management Performance Contract, Yearly Operating Report is completed. These were reviewed by the OIG and OIA for the periods of 11/27/2017 through 11/30/2018 and 12/01/2018 through 11/30/2019. A copy of the most recent report is attached hereto as Exhibit Three (3). The report clearly details many of the areas covered in this report to include:

- A month by month detailed summary of all operations and maintenance to include lights out, repairs and unscheduled maintenance;
- A performance report with consumption, operations and maintenance data;
- A breakdown of all outages, both open and closed, with the reason;
- Unscheduled Maintenance list with the report number, the location, the type of intervention and the cost to this COA;

- A financial report detailing the works payments, services payments, unscheduled maintenance payments and change order for the year.

# ENVISION ABQ

## Smart City Project

February 5<sup>th</sup>, 2020



# Agenda

- Current Situation
- Moving Forward
- Decisions for the guidance committee

# Current Situation (1/4)

- **Nodes**
  - 250 Nodes deployed by February 7th.
  - CKC in hands of City of Albuquerque
  - Sandbox environment for CNM being built by Cisco, Quantela and Sology, delivery claimed to be within 2 weeks.

## Current Situation (2/4)

- LPRs
  - Hardware:
    - All hardware is deployed.
  - Software:
    - Streaming Networks is operational and has been capturing data for the past 6 weeks.

## Current Situation (3/4)

- **Additional Work - Vigilant**
  - **Alleged connectivity and latency issues**
    - Neither the City or Citelum is able to reproduce the issue encountered
    - Polo has upgraded the 809 routers to the highest available tier at Verizon
    - Russ has checked the machines and besides suggestions to improve edge performance he has not found any direct explanations for the reported behavior
  - **Confusion at Vigilant on whether the solution is installed or working:**
    - Citelum confirms all three systems at Broadway and Central are operational and correctly focused.
    - Vigilant software is installed and has been operating for it seems a number of days (one camera has over 7000 plates read and stored)
  - **Still a major engagement issue and lack of PM / communication on Vigilant side**
  - **Citelum and partners have accumulated +200h of work in assisting City to address Vigilant issues**



CarDetector DSP Control Center

Camera Group 01

eastbound centr at broa

LPR Data Center

eastbound centr at ...

Detection

Video

Configure

eastbound centr at broadwa



Vehicle Image

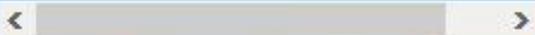


License Plate Image

Plate Read # 1  
**285THH**

Pause

Scan No	Plate 1	Date	Time	Alerted	Alert Type	Authorized	Unauthorized	Notes
6784	285THH	02/03/2020	12:21:16 PM					
6783		02/03/2020	12:19:48 PM					
6782		02/03/2020	12:19:11 PM					
6781		02/03/2020	12:16:37 PM					
6780		02/03/2020	12:16:17 PM					
6779		02/03/2020	12:13:45 PM					
6778		02/03/2020	12:09:52 PM					
6777		02/03/2020	12:09:16 PM					
6776		02/03/2020	12:08:53 PM					



Add New Camera

## Current Situation (4/4)

- **Smart intersection specification**
  - Work on hold until Vigilant situation is resolved
- **DRP and business continuity**
  - Work on hold until Vigilant situation is resolved

# Moving forward (1/2)

- **Conclusion of GMPC phase 1:**
  - Commissioning
  - DRP
  - BCP
  - SLA and preparation for O&M
  - Network documentation

# Moving forward (2/2)

- Next
  - Test Lab: “extended” Pino Yards
    - Parking puck to be deployed
    - Identify location for the 2 loaners from Streaming Networks
  - Phase 2:
    - Additional Nodes
    - Additional Intersections for LPR
    - Explore alternatives to LTE (Landmark)
    - Define a specific role for Citelum (and partners, including Sology) on their support to the Vigilant deployment and other smart city initiatives.

## Support SLA / Schedule

- Finalize SLA based on Cisco / Sology SLAs with Citelum
- Add a schedule for additional work
  - Crew and bucket truck: \$230.80/h
  - TC: \$121.60/h
  - IT / PM support: \$126.00/h (excluding experts/cisco etc.)

# Phasing and future



# ENVISION ABQ

## Smart City Project

February 20<sup>th</sup>, 2020



# Agenda

- Current Situation
- Decisions for the guidance committee

# Current Situation (1/3)

- **Nodes**
  - **Wiring issues downtown**
    - Nodes will fail regularly
    - Old non-standard wiring,
  - **Cisco requesting a substantial investment for the Sandbox**
    - Going to box out Pino Yards
  - **Commissioning needs to be scheduled**

## Current Situation (2/3)

- LPRs
  - Hardware:
    - All hardware is deployed.
  - Software:
    - Streaming Networks is operational and has been capturing data for the past 6 weeks. Two new systems have been deployed, first analytics coming out
    - Vigilant software deployed on all boxes, camera finetuning still needs to be done
    - ETC for Vigilant:
      - Fine tune for NM plates
      - Fine tune remaining cameras
      - Connect each QPCS box directly to cloud
      - Configure LEARN interface
      - Training

## Current Situation (3/3)

- **DRP and business continuity**
  - Work has resumed and ABQ crew is costing options
- **Parking Sensors (pucks)**
  - Work suspend while we get a grasp on the Vigilant situation
- **Quotes:**
  - Extension
  - CNM / Streaming Networks
  - 2 Parking cameras at Pino

## Phase 2

- Recap meeting with Landmark

## Material Selection Rationale

Citelum proposes a mix of PNM approved Acuity and GE roadway and area luminaires under the streetlight upgrade program. Both Acuity and GE are well respected manufacturers that produce very high-quality roadway luminaires, as evidenced by the high number of Acuity Autobahn and GE Evolve luminaires that both manufacturers have listed on the DLC Premium Qualified Products List.

### Selection Criteria

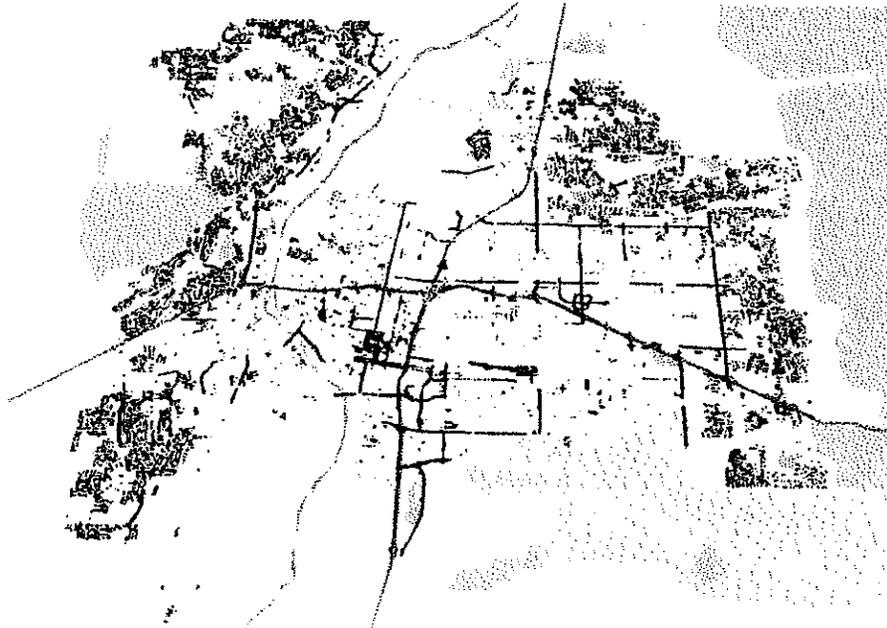
Citelum's final material selection was made based on the results of:

- Extensive photometric modeling and product performance (lifetime/efficiency) for each road type/configuration throughout the City
- Lifetime energy savings analysis
- Upfront material costs
- Manufacturer support- warranty terms, delivery logistics and lead times, and payment terms
- A holistic consideration of the City's look and feel

### Summary

Ultimately, Acuity models generally offered greater advantages in the forms of lighting performance and energy efficiency to the City of Albuquerque than their GE counterparts. As such, Citelum has selected to use **Acuity luminaires to replace all cobraheads along local, collector, and major roads, and GE luminaires along all ramps and highways.** Additionally, Citelum has selected to install Acuity luminaires for all 'miscellaneous' functional lighting types, including shoeboxes, underpass lights, flood lights, and high masts.

Spatially, this break down looks like this:



*Blue points are Acuity luminaires, red points are GE, and green points are 3rd miscellaneous decorative fixtures*

## Evaluation

As part of our photometric modeling, Citelum generated 175 replacement scenarios, spanning local roads to highways at multiple pedestrian conflict levels and pole heights. Product performance in each scenario was generally comparable; When optimized for wattage and material cost, both manufacturers were well represented. However, in order to provide the City with a more uniform look and feel, we found it was more useful to create 3 larger groupings for the cobraheads:

- 1) Local Roads
- 2) Collectors and Majors
- 3) Highways

This would ensure that each roadway segment has a uniform treatment and will meet the roadway lighting performance targets that were initially modeled. When viewed on a more macro level, it was found that Acuity provided more advantageous energy and cost savings to the City on the models selected for the local, collector, and major roadways, whereas GE models were able to meet all highway performance criteria at a lower wattage and cost.

Light Type	Average Efficacy (lumen/Watt)		Average Dollar/Lumen		Proposed Choice	
	Acuity	GE	Acuity	GE	Acuity	GE
Local	112.83	112.83	0.02	0.02	•	
Collector	110.5	110.5	0.01	0.01	•	
Major	115.2	115.2	0.01	0.01	•	
Ramp	110.5	110.5	0.01	0.01	•	
Highway	110.5	110.5	0.01	0.01		•
High Mast	110.5	110.5	0.01	0.01	•	
Shoebox	110.5	110.5	0.01	0.01	•	
Flood	110.5	110.5	0.01	0.01	•	

The above table shows a breakdown of the average efficacy (lumens/watt) and average cost per lumen for each manufacturer across all roadway and lighting categories. The table has been formatted to show the more favorable value in green. Based on our analysis, Acuity consistently achieved greater luminaire efficacies in all lighting scenarios except for highways. Additionally, Acuity also provides a better value. Although the differences in efficacies are narrow, small reductions in wattage across the city-wide inventory can have significant energy savings over the course of the product lifetimes.

For all miscellaneous functional lighting besides cobraheads—flood lights, high masts, underpass lights, and shoeboxes—Acuity was also able to consistently meet our performance requirements within budgetary constraints.

## Other Factors

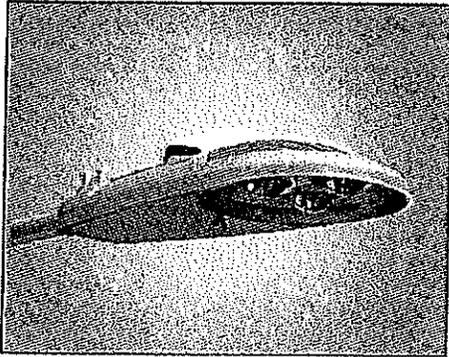
Beyond photometric performance, by utilizing a single manufacturer for the majority of the functional lighting upgrade, both installation logistics, and operations and maintenance for the next 15 years should be significantly streamlined. This split is further advantageous due to Acuity's favorable delivery lead times, logistics, and payment terms.

Final Selection:

Total Quantity			
Manufacturer	Fixture Type	Model Number	Quantity
Acuity	Shoebox	ATB0 20BLEDE10 480 R3 27K BK MP UMS P7 RFD252184	2
	Shoebox	ATB0 20BLEDE10 480 R3 3K BK MP UMS P7	16
	Shoebox	ATB0 20BLEDE10 480 R3 4K BK MP UMS P7	9
	Shoebox	ATB0 20BLEDE10 MVOLT R3 27K BK MP UMS P7 RFD252184	1377
	Shoebox	ATB0 20BLEDE10 MVOLT R3 3K BK MP UMS P7	175
	Shoebox	ATB0 20BLEDE10 MVOLT R3 4K BK MP UMS P7	104
	Shoebox	ATB0 30BLEDE10 480 R3 4K BK MP UMS P7	8
	Shoebox	ATB0 30BLEDE10 MVOLT R3 4K BK MP UMS P7	178
	Cobrahead	ATBM A 480 R2 27K P7 RFD252181	6
	Cobrahead	ATBM D 480 4K R2 MP P7	28
	Cobrahead	ATBM D MVOLT R2 3K MP P7	241
	Cobrahead	ATBM D MVOLT R2 4K MP P7	935
	Cobrahead	ATBM E MVOLT R2 27K MP P7	10
	Cobrahead	ATBM E MVOLT R2 3K MP P7	1017
	Cobrahead	ATBM E MVOLT R2 4K MP P7	1
	Cobrahead	ATBM F 480 R2 27K P7	1
	Cobrahead	ATBM F 480 R2 3K P7	18
	Cobrahead	ATBM F 480 R2 4K P7	14
	Cobrahead	ATBM F MVOLT R2 27K MP P7	12
	Cobrahead	ATBM F MVOLT R2 3K MP P7	199
	Cobrahead	ATBM F MVOLT R2 4K MP P7	2302
	Cobrahead	ATBM G 480 R2 4K P7	196
	Cobrahead	ATBM G 480 R3 3K P7	119
	Cobrahead	ATBM G MVOLT R2 4K P7	1014
	Cobrahead	ATBM G MVOLT R3 3K P7	262
	Cobrahead	ATBS C MVOLT R2 27K MP P7 RFD252178	8124
	Cobrahead	ATBS E MVOLT R2 27K MP P7 RFD252179	252
	Cobrahead	ATBS F MVOLT R2 27K MP P7 RFD252180	82
	Cobrahead	ATBS H MVOLT R2 27K P7	170
	High Mast	HMLED3PK340KHVOLTGAWP7	234
	Flood Light	PMLED 6 4K 10A AS 55 3 K GP 0423 P7	33
	Flood Light	PSLED PK1 MVOLT FL 40K 4 GYSDP 10KVMP PER7 05 23	42
	High Mast	TNLED 3 4K 7 AS WCR DBZA S TW	150
<b>Acuity Total</b>			<b>17331</b>
GE	Cobrahead	ERL2 0 21B3 40 A GRAY	1362
	Cobrahead	ERLH 0 13B3 40 A GRAY	82
	Cobrahead	ERLH 0 15B3 40 A GRAY	429
	Cobrahead	ERLH H 15B3 40 A GRAY	1
<b>GE Total</b>			<b>1874</b>
<b>Grand Total</b>			<b>19205</b>

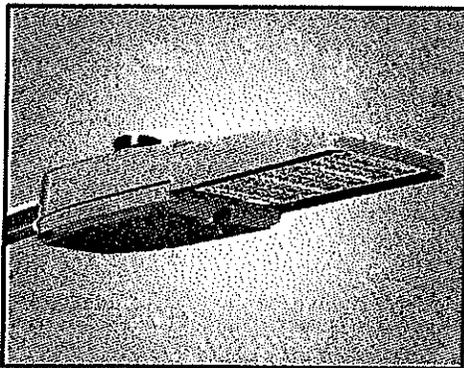
Acuity Autobahn Series Cobraheads ATB(S/M/L)

Location: Local, Collector, and Major Roadways



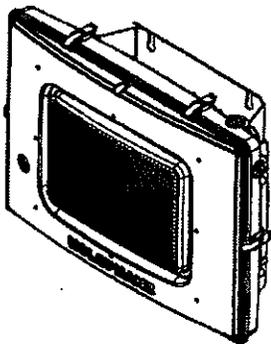
Acuity Autobahn Series LED Shoebox ATB0

Location: Local, Collector, and Major Roadways



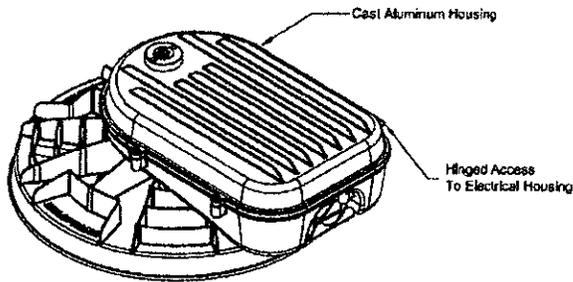
Acuity TunnelPass LED Luminaire TNLED3 (Underpass)

Location: Highway underpasses



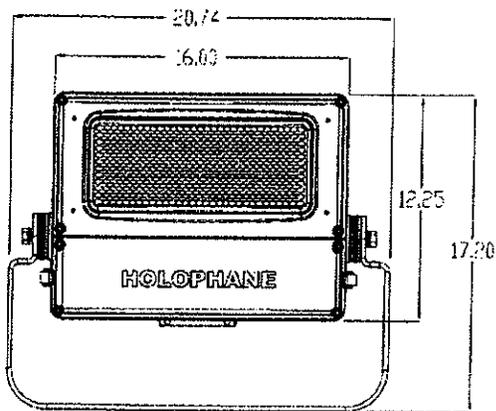
Acuity High Mast LED Luminaire HMLED3

Location: Highway high masts



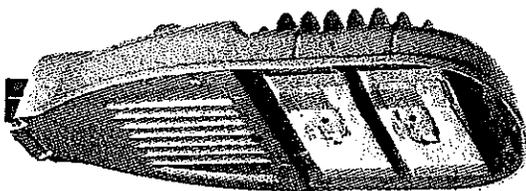
Acuity LED Flood Light PSLED

Location: Flood and Area lights are dispersed throughout the City



GE Evolve Series Cobrahead ERL(H/1/2)

Location: I-25 and I-40



Auditor Name: Connie Barros-Montoya

Date Reviewed: February 2020

## Citelum, USA Audit Performance of Contract Scope of Work - Review

Investigation No.

Scope of Work Item Number	Brief Description	Date Completed	Auditor Comments (COA Staff who reviewed, payments made, reason for delay)
Article 1, C Sch 1	Artistic Lighting added to Clients City Hall	11/29/2017	Artistic Lighting was removed with the amendment to Exhibit A
Article 1, D Sch 2	Smart City Instruments	11/29/2017	Included in amendment of Exhibit A. Exhibit E Technical specifications and drawings are included in Project Schedule
Article 2 Sch 2.3	Operation of existing System	3/2018	Commencing March of 2018
Article 2 Sch 2.4	Operation of existing system		Modifications to calendar of execution and schedule of work. Exhibit C and D
Article 2 sch 2.4.3	Progress reports, status meetings	2/13/2020	Received monthly and annual Performance Contract Yearly Operating Report. Report include Performance Report, Changes to Inventory, Unscheduled Maintenance, and Financial Report. All annual, monthly reports are attached.
Article 2 sch 2.6.1	MUSE: Real-time monitoring of work	On-going	Client did not elect to have real-time access
Article 2 sch 2.6.2	Perform check for each workday	On-going	Paul Sanchez and Tran Manh, Timothy Brown, and Ismail Saif
Article 2 sch 2.6.3	Operating center	On-going	Note: 10 days of commencement date of 3/2018 The Operating center was moved to ( 311 )
Article 2 sch 2.8	Project & performance baseline inventory	On-going	Inventory of assets in MUSE
Article 2 sch 2.9	Measurement & verification Plan Energy Savings- Measurement and Verification Plan, International Performance Measurement and Verification Protocol.	On-going Verified 2/20/2020	<p><b>Note: 60 days to provide Measurement and Verification Plan M &amp; V Plan</b></p> <p>Project Description</p> <p>The following Measurement and Verification (M&amp;V) Plan is intended to act as a guide for performing M&amp;V for the course of the contract related to the upgrade, operations, and maintenance of the CLIENT's streetlighting system. The purpose of this document is to ensure that CONTRACTOR is meeting its performance guarantees for Energy Savings to the CLIENT. Energy Savings and the related cost avoidance will be relied on as a key source of funding for the CLIENT to pay for the upgrade project, and therefore it is critical that savings are properly recognized.</p> <p>Many M&amp;V plans are designed to incorporate multiple Energy Conservation Measures ("ECMs"), however this project relates solely to the reduction in energy use from upgrading the streetlights to more efficient technology.</p> <p>M&amp;V Project Manager</p> <p>The M&amp;V Plan Project Manager was selected</p> <p>Budget and Resources</p> <p>The tasks outlined in this Measurement and Verification Plan are included within the scope of services provided within the Services portion of CONTRACTOR's Global Management Performance Contract with CLIENT.</p> <p>Selected IPMVP Measurement &amp; Verification Option</p>

		<p>The International Performance Measurement and Verification Protocol (IPMVP) specifies four generic approaches for using measurement to verify the savings results of energy conservation projects. These are known as Options A, B, C and D.</p> <p>Since this project has one primary energy conservation measure (streetlight LED upgrade) with a defined boundary, CONTRACTOR will use <i>Option A Retrofit Isolation: Key Parameter Measurement</i>.</p> <p><b>Measurement Boundary</b></p> <p>A measurement boundary is a notional border drawn around equipment and/or systems that are relevant for determining the savings achieved by an ECM ("Measurement Boundary").</p> <p>The Measurement Boundary consists of the full lighting system as defined in the PNM bill for CLIENT owned lighting. This includes metered and non-metered lighting systems.</p> <p><b>Timeline of Events</b></p> <p>The M&amp;V process spans the course of the upgrade and will continue following the projected schedule:</p> <p><b>Phase Start Completion</b></p> <p>Baseline Measurement <i>August 2016 October 2016</i></p> <p>Design/Energy Savings Modeling <i>October 2016 March 2017</i></p> <p>Upgrade Period <i>November 2017 November 2018</i></p> <p>Post-Upgrade Measurement <i>November 2018 December 2018</i></p> <p>M&amp;V Operating Cycle Kickoff <i>December 2018</i></p> <p><i>Note: How is this tracked and verified?</i></p> <p><b>Operating Cycle</b></p> <p>An operating cycle refers to the average time period for a site or energy system to witness one complete cycle of energy usage patterns due to the effects of key influencing variables (hereinafter "Operating Cycle").</p> <p>The Operating Cycle for this CLIENT's streetlighting system is the Annual Period, starting after final acceptance of the works. Measurement and verification will coincide with this Operating Cycle.</p> <p><b>Baseline Conditions</b></p> <p>The baseline conditions of the project refer to the status of the system and static variables that will affect the energy savings potential (hereinafter "Baseline Conditions"). The accuracy of the measurement comparison baseline is dependent upon the baseline inventory of lighting assets for which the utility is currently billing the CLIENT. This inventory has been reviewed by CONTRACTOR, first by an independent inventory conducted during Phase II of this project, as well as follow-up reviews of the GIS database of assets.</p> <p>The success of the M&amp;V Plan will require a continued examination of the utility billing inventory to review for accuracy, as compared to CONTRACTOR's independently managed asset database (through MUSE).</p> <p><b>Key Measurement Parameters</b></p> <p>Key parameters refer to the data types that are measured or estimated in relation to a defined measurement boundary for measuring and verifying the impact of an ECM and calculating savings (hereinafter "Key Parameters").</p> <p>The Key Parameter for the streetlight system will be the energy usage, as reflected in the Public Utility of New Mexico (hereinafter "PNM") billing.</p> <p><i>Data Source:</i> PNM inventory and billing to the CLIENT for CLIENT-owned and controlled assets, including both metered and non-metered assets.</p> <p><i>Type of Information:</i> PNM bill to CLIENT, containing the total estimated kWh usage. If billing does not include a specific line item for kWh usage, Citelum will use the PNM</p>
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			<p>inventory of assets and the published tariff rate that describes the expected kWh usage of lights under the tariff. (Rate 20) <i>Frequency of Review:</i> Annual. Billing will be reviewed on a monthly basis, however M&amp;V Plan for energy savings will be conducted annually.</p> <p><i>Review Process:</i> The review process is described in the following flow chart</p> <p>Interactive Effects Interactive effects refer to the effects on energy usage outside the M&amp;V measurement boundary which occur as a result of implementing an ECM (hereinafter "Interactive Effects").</p> <p>In this case, we can estimate that there will be additional energy reductions due to the installation of LED streetlights, such as reduced fuel use from maintenance vehicles and less turnover of material and related supply chain energy use. CONTRACTOR will not measure, nor will we guarantee such Interactive Effects.</p> <p>Additionality Additionality refers to the extent to which the measured energy savings from multiple ECMs can be added together to provide aggregated energy savings figures (hereinafter "Additionality").</p> <p>Since CONTRACTOR will only be measuring one ECM, there is no Additionality considered in this project.</p>
Appendix 2A Sch 1 1.1	Starting date of works-section 2.3 sched 2	3/2018	Note: On or before the commencement date. Commencement date 3/2018. First monthly report submitted 8/8/2019. First day of work is form 7/1/2018.
Sch 1 Appendix 2A Sch 1.2	Commissioning within 12 months of commencement date.	11/15/2018	Attached is the certificate of substantial completion for the Final Segment of the Works.
Sch1 1.3	Recycling/Disposal	Sch 2 sec. 1.3	Note: Achieving a 90% recycling rate. Citelum responsibility.
Article 2 2.1	Annual period randomly measures 1% of System's Infrastructure assessing System's lighting performance	12/27/2018 & 12/19/2019	Included in the Global Management Performance Contract performance report Operation-Lighting Performance.
Article 2 2.2	Inventory of Assets: Summary description of the system and condition of system and its conformity	2/20/2020	Verified MUSE system 2/20/2020
Article 2 2.3 - 2.5	Maintenance and repairs, incident report, emergency response, centralized maintenance management software	2/20/2020	Unscheduled Maintenance is included in the Monthly Operating Report. Verified what MUSE contents on 2/20/2020.
Article 2 2.5.1 - 2.5.3	MUSE software-daily work schedules, performance monitoring, analysis and reporting tools.	2/20/2020	Verified MUSE system 2/20/2020
Article 2 2.6	Operating center-Communication and reporting	Section 2.6.3 Sch. 2 & 3	311 division
Article 3 3.1 - 3.2	Monthly reports and system annual performance report	Monthly	Citelum submits monthly and annual progress reports, however; no system annual performance report was included

Scope of Work Item Number	Brief Description	Date Completed	Auditor Comments (COA Staff who reviewed, payments made, reason for delay)
Article 4	Smart City Instruments and Artistic Lighting Operation and Maintenance	11/29/2017	Artistic Lighting Operation was taken out with the amendment Exhibit A. Per Article 4 Smart City shall be authorized in writing by the client and separately billed or surcharged to CLIENT on a time and material basis.
Article 5 5.2-5.3	Site visits and status meetings (bi-weekly)	Done Monthly	Verification of site visits and status meetings biweekly are attached.

Article 6 6.1 – 6.2	Technical Monitoring Committee and Technical Advancements	<p>Group functions to inform us of technological advancement as intended in the contract.</p> <p>They have been meeting more regularly than annually because of the nature of smart city technology.</p> <p>We have our own requirements that follow national standards for roadway illumination, so we really do not need that input from our contractor.</p> <p><i>6.1 Technical Monitoring Committee</i></p> <p>The CONTRACTOR commits to ensure ongoing technical monitoring in order to allow the CLIENT to benefit from Technological Advancements and to remain informed about changes in standards and regulations.</p> <p>A Technical Watch Committee shall be created for this purpose. The Technical Watch Committee shall consist of an equal number of representatives from the CLIENT and from the CONTRACTOR and shall meet at the end of each Annual Period. The agenda of the meetings shall be established by the CONTRACTOR with the CLIENT'S input. The purpose of these meetings shall be to inform the CLIENT about:</p> <ul style="list-style-type: none"> <li>• potential Technological Advancements and their impact on the execution of the Agreement; and</li> <li>• potential changes in any standards and regulations and about their impact on the performance of the Agreement.</li> </ul> <p><i>6.2 Installation of Technological Advancements</i></p> <p>CONTRACTOR shall develop a technical and financial analysis for any Technological Advancements the CLIENT requests implemented. The technical and financial analysis shall include a draft implementation and cost schedule for the installation of the Technological Advancements, as well as identify impacts the installation will have on the operating and maintenance costs of the System. Any installation of Technological Advancements shall be agreed to in writing by the Parties. The cost of the installation of any Technological Advancements will be entirely borne by the CLIENT.</p> <p>The installation of Technological Advancements may have a positive or negative impact on Energy Savings and the costs of Services. Any adjustments whether in the form of savings or increased costs will be reflected in the Services Payments. If the installation of Technological Advancements causes a Material Change in the System, then the Performance Guarantee shall be adjusted in accordance with Article 5 of the Main Body of this Agreement.</p>
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Article 7 7.1 – 7.3	Additional Street lights, artistic lighting and smart city projects	Sc 1.1.2 sch 4 Ongoing	<p>Upon mutual written agreement executed by both the Parties, CLIENT may request and CONTRACTOR will install and/or provide Services for additional street lights that were not part of the System</p> <p>on the Acceptance Date. CLIENT will provide official documents detailing the number and the nature of the additional street lights, and all other related documentation and drawings. The remuneration for the construction and installation of any additional street lights shall be agreed to by the Parties and shall be separately billed or surcharged to the</p> <p>CLIENT. Adjustments to the Service Payments for Services rendered for any additional street lights will be made in accordance with Section 1.1.2 of Schedule 4.</p> <p>Any additional street lights integrated into the System after the Acceptance Date will be considered a Material Change to the System. The Parties shall modify the Performance Baseline and Services Performance Measures Objectives to account for the Material Change without <i>resulting in a Savings Shortfall</i> or penalties.</p>
Sch 4 Payment Mechanism 1.1	Contract price \$45,617,188 in monthly installments (180 months)	On-going and on-track	<p>1.4 Services payment and works payment schedule page 71 - 73 (1.6 scheduled payment termination value)</p> <p>DSS AP-GL-ALL query shows total amount paid thus far \$4,614,785.52</p>
Sch 4 1.1.1 – 1.1.2	Price Adjustments to service payments (CPI-Additional street lights	Page 70	<p>Note: fixed price of \$5 per street light per month</p>
Sch 4 1.2	Non-recourse limitation; unconditional payment obligation	Page 70	Attached Project schedule page 8 commissioning acceptance of the work
Sch 5	Acceptance Procedures-Project commissioning and acceptance procedures	5/25/2018	<p>Certificate of Substantial completion is attached dated 5/25/2018 commencement date 11/27/2017</p> <p>Certificate of Acceptance commencement 11/27/2017, segment 2 \$7,815,680, substantial completion 11/15/2018, acceptance date of segment 11/15/2015, workmanship warranty expiration for segment 11/15/2019</p>