



PROPOSAL FOR STREETLIGHT UTILITY NEGOTIATIONS & LED CONVERSION SUPPORT FOR THE CITY OF HYATTSVILLE, MD

Submitted by:

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Submitted to:

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March 11, 2024

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COVER LETTER

March 11, 2024

Lesley Riddle
Director of Public Works
City of Hyattsville
4310 Gallatin Street
Hyattsville, MD 20781
lriddle@hyattsville.org

Dear Ms. Riddle,

Tanko Streetlighting, Inc. ("Tanko Lighting") appreciates the opportunity to submit this proposal to negotiate with the City's utility, Potomac Electric Power Company (Pepco), and implement an LED streetlight conversion for the City of Hyattsville.

As you know, we recently completed an analysis of the City's options related to streetlight ownership and operations. Based on the results of this analysis, we determined that it is most advantageous for the City to negotiate with Pepco to allow the City to install LED streetlights throughout the system and have Pepco continue to own and maintain the City-installed LED fixtures. The enclosed proposal outlines our approach to implementing this exciting project.

Please let us know should you have any questions. We look forward to your feedback.

Regards,



Jason Tanko
Chief Executive Officer

Enclosures

INTRODUCTION

Tanko Lighting recently completed an analysis of the City of Hyattsville's options for streetlight ownership and operations. The results of this study indicated that:

- The fees associated with the City's utility company, Potomac Electric Power Company (Pepco), continuing to own and maintain the streetlight system are more cost-effective than the City purchasing the streetlights from Pepco in order to convert, own and maintain the system.
- The costs associated with Pepco directly implementing a Light Emitting Diode (LED) streetlight conversion throughout the City's system are significantly higher than Tanko Lighting's estimated combined costs for audit, data reconciliation, customized design, and construction management.
- The most cost-effective option is for the City to negotiate with Pepco to allow the City one-time access to the streetlights in order to upgrade the system to LED fixtures.
 - Upon installation:
 - Pepco would own the LED fixtures and continue to maintain them.
 - The City would shift to LED streetlight electric rates and realize significant savings.
- Additional benefits of this approach to the City are:
 - More immediate savings, as the City will govern the timeline of each phase.
 - A customized design, which the City will have more control over. Note that there must be agreement/approval from Pepco of the specific part numbers and fixtures for Pepco to maintain the lights.
 - Better quality lighting and increased public safety associated with LED light output.
- Pepco would also benefit from this strategy by:
 - Inheriting a new LED streetlight system without any direct capital investment.
 - Experiencing reduced maintenance needs for the system, as LED streetlights are vastly more reliable than non-LED fixtures.
 - Expediting its LED streetlight conversion goals by not having to manage the process itself.
 - Decreased energy costs associated with lower wattage LED fixtures.
 - Continuing to own and maintain the streetlight system.

Based on these results, our team has developed a Scope of Services (outlined below) for assisting the City with the implementation of this strategy.

SCOPE OF WORK

Task 1: Utility Negotiations

We will coordinate the utility negotiations to result in Pepco allowing the City to purchase and install the LED streetlights and transfer ownership of the fixtures to Pepco upon installation. Our work will include:

- Assisting with the review of Non-Disclosure Agreement(s) with Pepco (if needed)
- Developing the business case and background information for why this strategy makes sense to both the City and Pepco

- Facilitating meetings with City staff to prepare for negotiations (assumes up to a total of 8 meetings)
- Facilitating meetings with our team, City staff and Pepco (assumes up to a total of 4 meetings)
- Developing meeting minutes and a list of next steps and action items from the meeting(s)
- Developing draft follow-up correspondence (based on the terms of the negotiations) for the City to send to Pepco
- Coordinating negotiations documentation outlining the terms and agreement language

Deliverables:

- Negotiations Documentation: Agendas, meeting minutes, action items, and follow-up correspondence.

Task 2: Streetlight Inventory Audit

Simultaneously with Task 1, we will conduct a streetlight field inventory audit (Task 2) and data reconciliation (Task 3) to prepare the City for the LED design and conversion.

In our experience, a proper GIS audit is essential to equipping the client with a comprehensive and accurate understanding of its existing infrastructure. The GIS audit is pivotal, as the data collected enables appropriate valuation of the system. It also positions the municipality or its contractor to effectively maintain the system, as well as manage any system upgrades (such as LED conversions or Smart City technologies), which require detailed field data to properly design and install.

Our data-driven approach to project implementation has defined our success. From GPS location coordinates to fixture wattages, accurate data collection and data management is the backbone from which our methodology stems. As most of our clients are interested in performing streetlight system upgrades, our auditors collect more than thirty fields of data per streetlight fixture to ensure that after the ownership transfer, the same data set can be used to create an LED streetlight design customized to our clients' needs and tailored to each streetlight's unique location. This approach also enables us and our clients to streamline maintenance processes, as we know exactly where each light is, the type of pole it is on, the type of fixture that is installed, existing wattage, etc., so that maintenance crews can be prepared ahead of time to respond to requests and minimize visiting the same fixture multiple times.

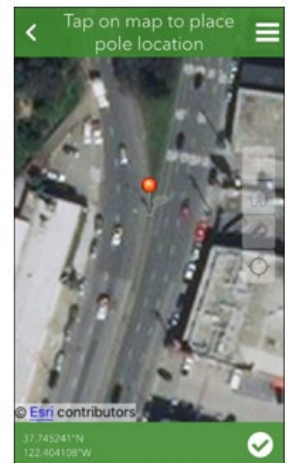
The preparation phase for the audit will involve the following activities that are critical to the accuracy of the data collection:

- Tanko Lighting working with City staff to clearly define audit scope, including priority areas, municipal boundaries, and any areas outside the right-of-way that should be included.
- Our team developing and providing to municipal staff a list of the attributes that will be collected at each light during the audit.
- City staff providing our team with all available City and utility records for streetlights.

Auditor Data Collection Screens

The screenshot shows a mobile application interface for data collection. On the left is a map view with a streetlight location marked by a yellow dot. On the right is a form titled 'Auditor Data Collection Screens'. The form includes sections for 'Fixture Type *', 'Mounted on Pole *', and 'Fixture Mounting Type *'. The 'Fixture Type' section has radio buttons for Cobra Head, Shoe Box, Wall Pack, Bollard, NEMA / barn light, Security Light, Stadium, Decorative, Flood, Soffit, Spot Light, High Bay, Bulb (selected), and Other (text picture). The 'Mounted on Pole' section has radio buttons for Yes and No. The 'Fixture Mounting Type' section has radio buttons for Surface Mount, Slipfitter/Tenon Mount, Trunion/Yoke, and Standard Pole. A green checkmark icon is visible at the bottom right of the form.

Our GIS auditing team uses dedicated tools, refined over hundreds of similar streetlighting projects, to ensure the accuracy of the data collection.



- Our team reviewing these data records to determine which should be utilized for the data reconciliation phase.
- Our team developing audit maps, scheduling, and dispatching auditors to the field.

Tanko Lighting's approach to the audit is an in-field strategy that poses the following advantages:

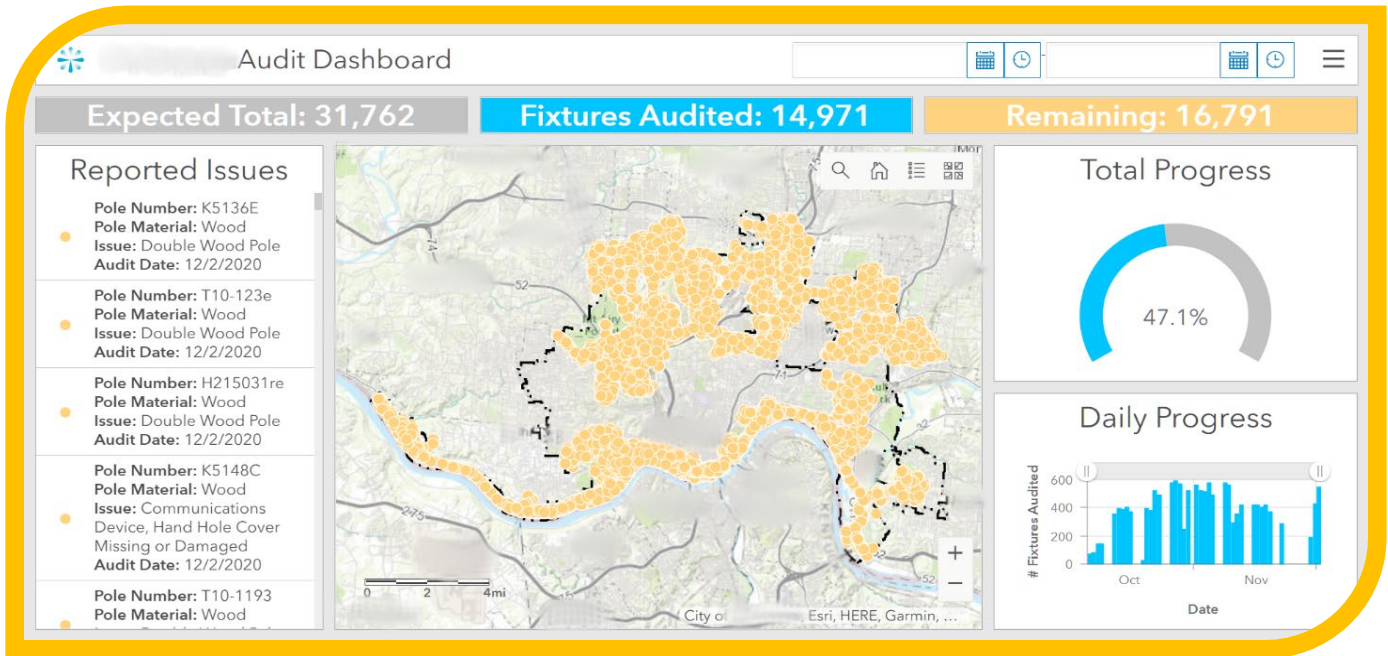
- Deploying trained professional auditors to the field at the onset of the project enables our team to obtain the most definitive, up-to-date data set possible. While we supplement our field data with digital data sources (e.g., aerial imagery, street-level imagery, and municipal/utility inventories), the integrity of our audit is never dependent on the age or accuracy of available digital data sources.
- Our in-field approach provides the greatest accuracy and access to the pole and fixture. In person, we can identify potential safety issues, such as leaning poles or structural damage to the pole/arm/fixture. We can also verify pole numbers/labels and confirm any locations where numbers/labels are damaged or missing. This in-person verification of pole labels and exact locations is also invaluable in reconciling the utility billing inventory with what we find in the field (see Task 3).
- Collecting data in person gives our team the highest confidence in the accuracy of our data. This precision means that should the municipality move forward with an LED conversion or other system-wide updates, the municipality will be able to budget and procure for exactly what is in the field - money is not wasted on over-ordering, nor is project completion delayed by under-ordering. This precision also minimizes sloppy design (and inherent lower energy savings).

Once the preparation phase is complete, the audit will commence. We will collect data on all of the existing inventory in the field and identify over thirty attributes on-site, including (but not limited to):

- Global Positioning Service (GPS) coordinates (latitude, longitude) of each fixture location and date of capture
- Fixture technology
- Lamp type and wattage
- Pole material, mounting height, and arm length
- Pole ID number
- Date of data capture
- Nearest street address
- Street width and configuration (e.g., intersection, crosswalk, cul-de-sac)
- Electrical feed (overhead, underground)
- Visible issues (e.g., pole leaning, fixture damage, tree obstruction)

During the field audit, we will ensure to inspect every fixture and pole specified by the City and will provide City staff with access to an interactive, online dashboard that will display the daily and overall progress of the audit, any issues encountered, and a map that can be explored. Please see below for a sample audit dashboard. We will also be available to discuss any questions the City has on the inventory.

A sample of our Audit Dashboard

**Deliverables:**

- **Audit Dashboard:** An online, interactive dashboard listing the locations completed during the data collection phase, along with a description of any issues that the municipality or utility would need to devote immediate attention to – including electrical hazards, tree trimming needs, etc.;
- **Audit Data:** Finalized inventory summary listing quantities by type and wattage, as well as a list of fixtures found in the field audit and their associated attributes, to be provided in a file suitable for use in common GIS software (e.g., ESRI, ArcMap), as well as Microsoft Excel (this deliverable will be provided after the completion of the project).

Task 3: Data Reconciliation

Our team has developed a methodology to match audited streetlights with the streetlight record billed to a municipality. Using precise GPS technology and expert streetlighting GIS Analysts, our team reconciles every asset it locates in the field with each record in the utility's billing inventory to ensure that all assets have been identified. Cross-referencing these various data sources results in extremely precise and clean data, with the resulting inventory accurately reflecting what is in the field. Projects typically have a utility billing discrepancy of approximately 5 – 10 percent of the inventory quantity, which can result in cities being over-billed by their utility. Any such discrepancies will be identified during this phase of the project, included in a data reconciliation report to the municipality.

The data reconciliation report will include the following items:

- Analysis of locations confirmed during the audit
- Analysis of locations appearing in the utility records but not in the confirmed audit records
- Analysis of locations confirmed in the audit records but not in the utility records

It should be noted that no field audit is perfect because varying and unknown field conditions can impact the data collected. As such, there is sometimes an error rate associated with data collection that may require the development of an Audit Punch List and a plan to remedy. Depending on the quantity of fixtures and the nature of the issues, there are typically three options to remedy the Audit Punch List:

1. Our team revisits specific locations to collect additional audit points (note this may involve additional costs for the City, which we can provide estimates for once the Audit Punch List is developed); or
2. City staff revisits specific locations to collect additional audit points and provides the streetlight information to our team; or
3. The City opts not to remedy the Audit Punch List – in which case, anything on the Audit Punch List will be removed from the project's scope of work. This option may result in missing opportunities to remove lights from the field that are currently on the utility's billing inventory.

Once the audit is completed, we will inform the City if there is a need for an Audit Punch List, as well as potential remedies for the City to decide which one best meets its needs.

Additionally, the data reconciliation will vary greatly depending on the quality of data and fields available in Pepco's inventory. We assume that Pepco's inventory will include spatial data (latitude/longitude), pole numbers, and a descriptive address for each record in the inventory. Depending on the information available, we may need to either adjust pricing to reflect the additional work required for this task, or if no usable data can be provided by Pepco, request that Pepco completely replace its inventory with the audited inventory and update its bills accordingly.

Deliverables:

- **Reconciliation Report:** A concise report detailing any discrepancies found between field data and utility billing records, as well as where records tied out cleanly. Note that any locations where discrepancies exist will be discussed prior to including them in the design phase. Further, addressing these discrepancy locations with the utility will be the responsibility of the City, unless it requests our team to do so (which will require an additional cost that can be provided upon request).

Task 4: Field Conditions Report

One of the greatest benefits of the audit is that it will uncover the physical reality of the streetlight system's current field conditions. This is important for the City to consider as it plans for negotiations with the utility and an LED conversion.

Thus, once the audit (Task 2) and data reconciliation (Task 3) are completed, we will develop a Field Conditions Report that will identify the current state of the streetlight system, including any deferred maintenance and other service issues. This Field Conditions Report will provide details of which issues need to be addressed so that the City can communicate them with Pepco and request service for impacted locations.

While many municipalities understand that there are outstanding maintenance issues, many of our clients are surprised by the actual quantity of field issues present. It is helpful for both the City and utility to have an understanding of the state of the system in order to address both the major and minor issues.

Deliverables:

- **Field Conditions Report:** An analysis of the current state of the streetlight system, including any deferred maintenance and other service issues.

Task 5: LED Replacement Design

In our experience, a comprehensive LED streetlight conversion project is the ideal opportunity for a municipality to reassess its entire streetlighting design and ensure that field conditions are optimized for all applications in the design. To achieve this, our team routinely conducts municipal-wide design processes for our streetlighting projects. This experience has led to our team's streamlined approach to design.

Once our team has canvassed the City through the audit and established an accurate data set of the existing fixtures (via the data reconciliation process), it can then develop and apply an LED replacement design. Our team utilizes Illuminating Engineering Society (IES) RP8 standards for roadways and right of ways. However, there are many instances when municipal customers need to alter these standards to best meet their specific needs. Thus, our team uses these types of industry-accepted recommendations as guidelines and works closely with the City to develop customized proposed standards of comfort and functionality that match its needs.

Our goal will be to provide the City with an appropriate replacement design that includes the brand of fixture, photocell, replacement wattages, color temperatures, distribution patterns and other appropriate settings and options to optimize the LED streetlight retrofit. The design will ultimately result in a replacement plan for all existing streetlights that includes maps of the replacement plan (see sample maps on subsequent pages).

In our experience, a critical initial step in proper design involves photometric analysis – which is an examination of the distribution or “spread” of light from the fixture onto the ground. Whereas a typical High Pressure Sodium (HPS) fixture indiscriminately throws the light in all directions, a typical LED fixture pinpoints the light spread to where it is needed most – on the roadway.

Given that an LED streetlight conversion is a significant investment, ensuring that the replacement LED fixtures properly distribute the light is imperative before the installation phase begins. The only way to confirm that the LED replacement fixtures improve the existing conditions is to model the light spread of the existing and replacement fixtures.

We are seasoned in this type of modeling. Our proven process involves creating theoretical photometric renderings (demonstrating the light distribution from an aerial perspective at the fixture location) for each proposed LED fixture. Our team develops in-house typical photometric layouts from manufacturer-provided data (IES) files.

Ultimately, our team will apply photometrics data to the replacement design. See the graphic to the right for a demonstration of how the photometrics can vary by residential and arterial roadway classifications. This shows the approximate light footprint of typical LED replacement fixtures used on corresponding street types. Street



classification data and measurements of street geometry taken during the field audit allow our team to appropriately develop a design without collecting or calculating photometrics for every street in a municipality.

Using the photometric renderings, our team will make recommendations on replacement LED fixtures that will meet or exceed the existing lighting levels while not over-lighting the streets. The specific fixtures chosen will be based on the audited attributes of the lights in the City, including road type, wattage, distribution type, pole height, spacing etc. These renderings will help to determine the spread of light that we will want to capture and will be a vital building block in creating a standardization plan for the City-wide design.

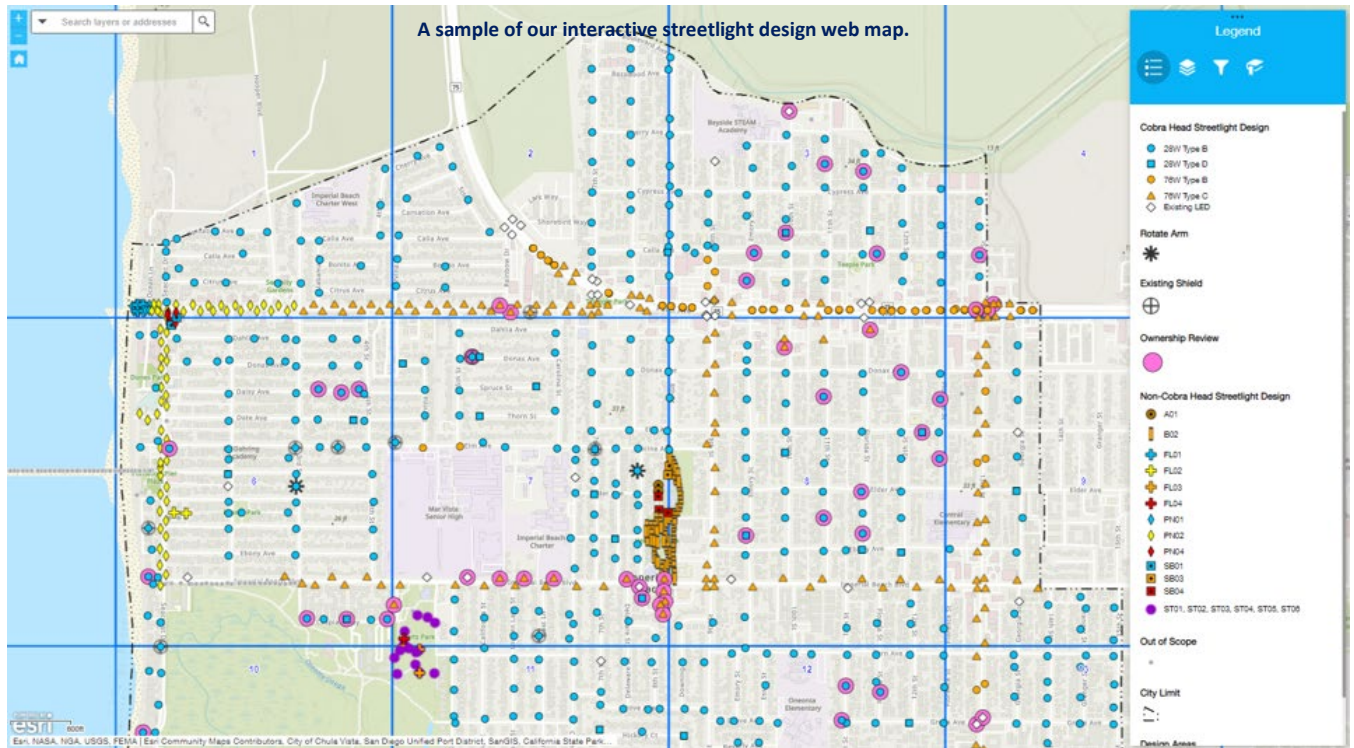
Please note that we can provide additional photometric-related analyses for this project. For example, some municipalities opt to have us take in-field photometric measurements (photopic/scotopic) to further support the replacement design and to showcase the benefits of the project to the public. We can provide an additional scope of work and pricing for this, upon request.

Our approach to comprehensive design for this project will include the following elements:

- Discussion with Pepco to confirm which fixture types they will agree to maintain. Note that design options may be limited depending on the fixtures that Pepco will agree to own and maintain.
- Assessing the City's needs to understand fixture preferences and determine the most appropriate fixture manufacturer. Our team has developed a list of specific questions that it will present to the City during the discussions (e.g., cost as a weighted priority and/or fixture specification, and/or twenty-year savings, etc).
- Organizing the streetlight infrastructure by roadway classifications (such a residential, collector and arterial) and conducting a minimum of three theoretic photometric renderings for replacement fixtures of the City's preferred fixture brands and lines. Developing theoretic photometric renderings for one typical existing fixture per main roadway classification (one for residential, one for collector and one for arterial) to demonstrate baseline conditions and aid in fixture and manufacturer selection. Please note these theoretical photometric renderings are distinct from photometric overlays, which can be provided upon request (and for an additional price).
- Applying standard LED replacement lumen recommendations based on the location of each existing fixture.
- Addressing distribution pattern needs for the specific roadway types and neighborhood characteristics (such as cul-de-sac locations) and shielding needs to ensure a tight light distribution pattern and minimize backlighting.
- Conferring with the City's safety coordinators and police officers to solicit feedback on areas that are currently over- or under-lit and are public safety concerns. Based on this feedback, as well as the data collected in the audit, we will analyze the current spacing configurations for the standard streetlights to determine any over or under-lit areas throughout the City. Where deficiencies are identified, we will provide theoretical photometrics for typical installation options. We will also identify any areas where pole removals are recommended.
- Reviewing additional data sets (upon request and only if there is readily available GIS data) to identify potential areas in need of special consideration (such as available data on important localized land uses (e.g., parks, schools, hospitals, etc.), pedestrian, vehicle use and crash data, important localized land uses, relative volumes of pedestrian and bicycle activity, unique neighborhood characteristics) and incorporating the analysis of the additional data into the design recommendations.
- Selecting appropriate wattages and distribution types for replacement fixtures to meet the City's needs, while maintaining the objective of providing a simplified design that standardizes inventory (so that the system has consistency and can be more easily maintained over time).
- Applying the City's preferred products, typical models and special considerations to its GIS inventory to produce maps of the type and wattages by location (see sample map below), as well as an analysis of the total cost, incentives, savings, and payback for the potential retrofit design.

We provide an interactive design web map to facilitate our design process. Please see the graphic below.





Deliverables:

- **Photometric Renderings:** Renderings of theoretical photometric analyses and corresponding files used to generate the layouts of the proposed LED replacement system.
- **Replacement Plan Maps:** City-wide maps with recommended LED replacement wattages and attributes, as well as recommended controls, for the City to review and approve. These maps will be available as an online deliverable through the end of the project, at which point the City will be provided with all of the data included in the Replacement Plan Maps in shapefile format.
- **Recommended Product Submittals:** Technical specification submittal sheets for recommended products, including controls products.

Task 6: Bid Coordination

Tanko Lighting has extensive experience with assisting municipalities with developing public Requests for Proposals involving the installation tasks and materials for LED lighting conversions. Our team has the expertise to develop solicitations with the appropriate qualifications and requirements to ensure that the City obtains the right installation contractor and materials for this project.

Our approach involves the following activities:

- **Product Specifications:** We will prepare the product specifications based on the City's preferences and submit these to the City for review so that the approved versions are ultimately included in bid documents.
- **Installation Specifications:** Our team will develop the bid documents for the installation/materials bid and will ensure they include:
 - Description of work
 - Required installation schedule

- Reference standards
 - Submittals
 - Quality assurance
 - Warranty
 - Installation
 - Field quality control
 - Adjusting and cleaning
 - Disposal
 - Requirements for handling any potential field issues, including no power, missing wire, etc.
 - Safety standards
 - Equipment requirements
 - Licensing/reporting requirements
 - Pricing requirements/templates
 - Communication requirements, including pre-construction and regular project progress meetings, as well as data collection, training, documentation, and reporting requirements
 - Minimum qualifications
- **Procurement Coordination:** Once the bid is released, our team will support the City with the development of responses to questions and any necessary addenda documents, as well as assist with bid reviews and interviews, as needed.

Deliverables:

- **Bid Documents:** Draft language and supporting materials for the City's installation and materials bid. We will use the City's existing installation and materials bid templates to create these drafts.

Task 7: Installation Management

Tanko Lighting will ensure that the selected installation contractor utilizes professionals, properly trained in and abiding by all regulatory and industry safety standards. The installation contractor will be fully insured and responsible for meeting all federal, state, and local codes and laws.

The installation contractor will provide safety, installation, traffic control, and environmental disposal services for this project. The installation contractor's efforts will be directed by a foreman, who will be responsible for all logistics and field installation, including safety and traffic control, and all management of field staff. The installation contractor will provide all the required safety equipment for the project.

Completion of the project commissioning (see below) will coincide at the end of the installation phase to quickly address any errors, punch list items, or troubleshooting needs.

Utilizing the data from the design process, we will develop installation maps (a sample can be provided upon request) and provide to installers and relevant City staff for accurate project tracking.

An additional feature of Tanko Lighting's approach is that its GPS data collection activities are integrated throughout project implementation – as a routine practice. We can stay intimately involved with the daily installation phase via its data collection protocols that are required of all installers. We will ensure that installers are equipped with handheld devices and train them in collecting relevant data on both the HPS fixtures being removed, as well as the LED fixtures being installed. Installers will be required to collect data at every location and transmit it *in real time* to Tanko Lighting. We can

track each crew's daily progress via time-stamped data on every fixture location. This not only enables our team to know every location where each crew has been, it also allows us to track the routes that each crew has used and any inefficiencies in the process. We review this information daily, which allows us to provide immediate instruction to crews on any course corrections necessary. Our proven experience with managing installation crews through data collection activities routinely integrated into the installation phase ensures the accuracy and accountability of project partners.

Upon installation, Pepco will be responsible to serve as first-responder to all outages, shall identify locations where warranty-related work is necessary, and will notify the installation contractor of the warranty-related locations so that a remedy can be implemented.

Given Tanko Lighting's significant focus on thorough data collection during both the audit and installation phases, approximately ninety-five percent of the commissioning efforts take place during the time of installation. This is because our team can quickly validate the installation data against the confirmed audit data (which is validated against utility records during the Data Reconciliation phase) and accurately identify any locations where both data sets do not match. This ensures tremendous precision that establishes a finite subset of the installation locations that require additional review.

Upon completion of the installation, Tanko Lighting will ensure that the installers perform final inspection on all fixtures, correct any "punch list" items, test lights to ensure that they work, and identify locations where repair needs Pepco assistance. Tanko Lighting will provide the City with a complete commissioning report outlining any errors and actions taken to correct errors.

Deliverables

- Weekly Installation Report: A detailed listing of the locations completed during the installation phase, along with maps corresponding to locations.
- Commissioning Report: Detailed analysis of final installation verification and testing, including an outline of any errors and actions taken to correct errors.

Task 8: Inventory Updates and Installation Close-Out

We will coordinate with Pepco on changing tariffs to the newly installed LED fixture rates. We will prepare the necessary documentation, submit required documentation to Pepco, confirm the materials have been received and obtain the timing for the modification to be processed. If known, we will provide the contact information for the appropriate party addressing any rate changes for the City. Based on the timeframe provided by Pepco, the City staff may need to confirm that the modification appears in the City utility bills. If there are any inquiries from Pepco to the City regarding the submitted applications, we will assist the City with responding to any questions.

Additionally, we will assist in drafting any necessary documentation to officially "gift" the LED streetlight fixtures to Pepco at the conclusion of the installation.

Finally, our team will coordinate all final reporting and data requirements to ensure that the City considers the project to be compliant and complete. This includes finalizing the GIS layer with design and construction data and providing this final inventory data to Pepco. We will also provide contacts and the process for warranty support with the manufacturer(s), should it be necessary.

Deliverables

- **Rate Change Documentation:** A compilation of copies of paperwork submitted and processed with Pepco regarding tariff changes.
- **Draft Fixture Ownership Transfer Documentation:** Drafted documentation necessary to officially “gift” Pepco with the installed LED streetlight fixtures.
- **Final Reporting Documentation:** Final requirements necessary to process the tariff changes with the City, as well as post-construction electronic GIS records for all newly installed streetlights in the City, including all wattages, badge numbers, locations, and other associate attributes, and environmental disposal documentation.

Task 9: Development of Streetlight Master Plan

Although Pepco will continue to own and maintain the streetlight system, the City will need a general Streetlight Master Plan to identify the LED fixture standards that should be used when new streetlight installations take place throughout the City. To that end, we will develop a Streetlight Master Plan via the following activities:

- Facilitate initial needs assessment conversations with the City to determine the elements needed in the plan
- Review any existing streetlight standards the City already has in place
- Draft specifications based on the LED streetlights installed
- Develop the initial draft of the Streetlight Master Plan (which, depending on the City’s needs, will include installation and operations standards, policies for both existing and new developments, residential and commercial lighting standards, and intersection standards)
- Review the first draft of the Streetlight Master Plan with the City
- Integrate the City’s feedback into the development of a second draft of the Streetlight Master Plan
- Review the second draft of the Streetlight Master Plan with the City
- Integrate the City’s feedback into the development of a final draft of the Streetlight Master Plan

Deliverables:

- **First Draft Streetlight Master Plan:** An initial draft of the Streetlight Master Plan.
- **Second Draft Streetlight Master Plan:** A second draft of the Streetlight Master Plan, based on the City’s feedback of the initial draft.
- **Final Draft Streetlight Master Plan:** A final draft of the Streetlight Master Plan, based on the City’s feedback of the second draft.

Task 10: Grant Application Assistance

We understand that the City is interested in pursuing funding through the Streetlight and Outdoor Lighting Efficiency (SOLE) Grant for this project. Upon completion of Tasks 1 and 2, we will assist by identifying which fixtures (if any) the City owns and working with City staff to complete the City’s grant application.

Deliverables:

- **City-Owned Streetlight Inventory:** A list of the City-owned streetlight fixtures and locations.
- **Draft Grant Application:** Draft grant application paperwork and any supporting documentation.

ESTIMATED SCHEDULE

Please find our estimated project timeline in Appendix A.



PRICING

Please note that this pricing is valid for sixty (60) days from the date of this proposal.

Project Pricing			
Task	Estimated Quantity*	Unit Price	Cost
Task 1 – Utility Negotiations	1	\$46,500.00	\$46,500.00
Task 2 – Audit	1,400	\$23.00	\$32,200.00
Task 3 – Data Reconciliation	1,400	\$7.00	\$9,800.00
Task 4 – Field Issues Report	1	\$3,500.00	\$3,500.00
Task 5 – Design	1,400	\$12.50	\$17,500.00
Task 6 – Bid Coordination (Materials & Installation)	2	\$6,250.00	\$12,500.00
Task 7 – Installation Management	1,400	\$10.00	\$14,000.00
Task 8 – Inventory Updates & Installation Closeout	1	\$14,500.00	\$14,500.00
Task 9 – Master Plan	1	\$20,000.00	\$20,000.00
Task 10 – Grant Application Assistance	1	Included	Included
Total Contract Amount			\$170,500.00

* Note that the estimated quantities will be confirmed at the completion of the audit.

Pricing Notes:

Please note the following regarding our pricing:

- **Estimated Quantities:** Each additional streetlight more than the estimated quantity of 1,400 will be invoiced at the per unit cost listed in the table above.
- **Task 1:** Assumes 8 meetings with the City and an additional 4 meetings with the City and Utility.
- **Task 3:** The cost for data reconciliation will vary greatly depending on the quality of data and fields available in the utility inventory. This pricing assumes that spatial data (latitude/longitude), pole numbers, lamp type, wattage and a descriptive address are provided for each record in Pepco's inventory. Depending on the information available, we may need to either adjust pricing to reflect the additional work required for this task, or if no usable data can be provided by Pepco, request that Pepco completely replace its inventory with the audited inventory and update its bills accordingly.
- **Task 5:** Assumes the quantity of non-cobra head lights that require design makes up 12.5% of the system or less.
- **Task 6:** Assumes City has materials and installation bid templates that the City would like Tanko Lighting to use.

Proposed Payment Terms:

- We will invoice the City monthly, based on the percentage of each task completed each month.
- The City shall pay Tanko Lighting within thirty (30) days of receipt of invoices.

APPENDICES

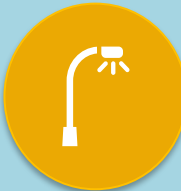
-Appendix A – Estimated Project Schedule






State	Project Count	Fixture Count
Arkansas	1	16
Arizona	1	40,000
California	80	311,340
Colorado	13	25,706
Connecticut	48	62,984
Florida	1	900
Georgia	1	10,000
Hawaii	1	3,500
Illinois	1	1,800
Maryland	1	2,500
Massachusetts	56	84,042
Maine	2	840
Michigan	1	3,300
Missouri	2	6,613
Montana	1	6,000
Nebraska	4	4,343
New Jersey	2	13,535
New Hampshire	4	803
New York	6	43,808
Ohio	5	41,678
Tennessee	2	3,349
Texas	9	199,390
Washington	8	12,715


Proven Process



Sole Focus on Municipal Streetlighting



523,000+ Streetlights Acquired



70,000+ Fixtures Maintained

California			
Contracts Total: 80 Total Fixtures: 311,340			
Municipality	Type	Fixture Count	Scope of Work
Alameda, CA	Municipal Utility	3,200	Audit, Data Reconciliation, & Design
Antioch, CA (Project 1)	City	9,924	Audit, Data Reconciliation, Design, & Photometric Study
Antioch, CA (Project 2)			Turnkey LED Conversion
Bakersfield, CA	City	3,000	Turnkey Decorative LED Conversion
Baldwin Park, CA	City	450	Turnkey LED Conversion
Bell, CA (Project 1)	City	1,600	Turnkey LED Conversion
Bell, CA (Project 2)			Maintenance Services
Berkeley, CA (Project 1)	City	8,000	Turnkey LED Conversion
Berkeley, CA (Project 2)		3,200	Pole Inspection & Conditions Assessment
Capitola, CA	City	1,500	Ownership Feasibility Analysis
Chino Hills, CA (Project 1)	City	4,450	Turnkey LED Conversion
Chino Hills, CA (Project 2)			Maintenance Services
Chino Hills, CA (Project 3)			Ownership Support
Claremont, CA	City	1,300	Turnkey LED Conversion
Clovis, CA	City	9,400	Feasibility Analysis
Coalinga, CA (Project 1)	City	750	Ownership Feasibility Analysis
Coalinga, CA (Project 2)			Ownership Support
Corona, CA	City	8,700	Material Procurement, Installation (Fixtures & Controls), & Rebate/Rate Change
Corte Madera, CA	Town	819	Turnkey LED Conversion
Cupertino, CA (Project 1)	City	3,000	Turnkey LED Conversion
Cupertino, CA (Project 2)		374	Ownership Feasibility Analysis
Fresno, CA	City	360	LED Streetlight Material & Install
Fullerton, CA	City	6,600	Turnkey LED Conversion
Glendora, CA	City	2,500	Ownership Support
Goleta, CA	City	1,575	Turnkey LED Conversion & Maintenance Services
Hayward, CA	City	7,700	Turnkey LED Conversion
Imperial Beach, CA (Project 1)	City	1,010	Audit & Data Reconciliation
Imperial Beach, CA (Project 2)		532	Ownership Support
La Puente, CA (Project 1)	City	2,100	Turnkey LED Conversion
La Puente, CA (Project 2)			Maintenance Services
La Verne, CA	City	2,500	Audit, Data Reconciliation, Design, Feasibility Analysis, & Ownership Support
Larkspur, CA	Town	770	Turnkey LED Conversion
Lawrence Berkeley National Laboratory (Project 1)	Lab	1,400	Audit, Data Reconciliation, Specifications Development, & Controls Installation (30 fixtures)
Lawrence Berkeley National Laboratory (Project 2)		300	Exterior Fixture LED Conversion & Controls Installation
Lodi, CA	Municipal Utility	7,200	Turnkey LED Conversion
Modesto, CA	Municipal Utility	9,000	Turnkey LED Conversion
Monrovia, CA	City	35	Pilot - Streetlight LED Conversion
Morgan Hill, CA	City	2,500	Turnkey LED Conversion
Mountain View, CA	City	4,206	Design Assistance, & LED Replacement Streetlight Fixtures
Napa, CA	City	4,500	Turnkey LED Conversion
Oakland, CA (Project 1)	City	37,000	Audit, Commissioning, & Data Reconciliation
Oakland, CA (Project 2)		526	Turnkey LED Conversion
Oakley, CA	City	3,395	Ownership Feasibility Analysis
Orange, CA	City	4,400	Ownership Feasibility Analysis
Paso Robles, CA (Project 1)	City	557	Downtown Streetlight Master Plan
Paso Robles, CA (Project 2)			Streetlight Data Reconciliation Project
Pico Rivera, CA (Project 1)	City	4,500	Turnkey LED Conversion
Pico Rivera, CA (Project 2)			Maintenance Services
Pico Rivera, CA (Project 3)			Ownership Support
Pleasanton, CA	City	4,400	Inventory Audit, Data Reconciliation, Design, & Project Management Services
Poway, CA	City	3,600	Turnkey LED Conversion
Rancho Cordova, CA	City	6,500	Turnkey LED Conversion
Rancho Cucamonga, CA (Project 1)	City	15,000	Turnkey LED Conversion
Rancho Cucamonga, CA (Project 2)			Maintenance Services
Redlands, CA	City	5,577	Turnkey LED Conversion
San Bruno, CA	City	2,000	Turnkey LED Conversion
San Rafael, CA	City	813	Turnkey LED Conversion
Santa Ana, CA	City	11,500	Audit, Design, Data Reconciliation, & Ownership Support
Santa Clara, CA	Municipal Utility	3,000	Turnkey LED Conversion
Santa Clarita, CA (Project 1)	City	22,936	Pole Inspection, Turnkey LED Conversion

California (Continued)			
Contracts Total: 80 Total Fixtures: 311,340			
Santa Clarita, CA (Project 2)	City	22,936	Maintenance Services
Santa Clarita, CA (Project 3)			Maintenance Support Services & Streetlight Master Plan
Santa Cruz, CA	City	995	Ownership Support
Santa Fe Springs, CA	City	6,500	LED Pilot Installation, Financial, & Feasibility Analysis
Signal Hill, CA	City	1,300	Audit, Data Reconciliation, Design, Feasibility Analysis, & Ownership Support
Simi Valley, CA	City	8,000	Turnkey LED Conversion
Sonoma, CA	City	1,200	Turnkey LED Conversion
Stanton, CA	City	1,300	Turnkey LED Conversion
Sunnyvale, CA	City	7,000	Turnkey LED Conversion
Thousand Oaks, CA	City	7,900	Ownership Support & Smart City Feasibility Analysis
Tustin, CA (Project 1)	City	3500	Turnkey LED Conversion
Tustin, CA (Project 2)		500	Ownership Support
Twentynine Palms, CA (Project 1)	City	616	Audit & Data Reconciliation
Twentynine Palms, CA (Project 2)		168	Sports Lighting LED Conversion
Vacaville, CA	City	3,980	Inventory Audit, Data Reconciliation, & Design Services
Vallejo, CA	City	9,000	Turnkey LED Conversion
Ventura, CA	City	9,000	Ownership Support
Vista, CA	City	2,300	Turnkey LED Conversion
Walnut Creek, CA	City	3,122	Ownership Feasibility Analysis
West Hollywood, CA	City	2,500	Audit, Data Reconciliation, Feasibility Analysis, Pilot Installations, Distribution Pole Ownership Assistance, & Maintenance Services
Colorado			
Contracts Total: 13 Total Fixtures: 25,706			
Municipality	Type	Fixture Count	Scope of Work
Arvada, CO	City	7,675	Streetlight Audit, Data Reconciliation, & Ownership Feasibility Analysis
Centennial, CO	City	2,953	Ownership Support
Erie, CO (Project 1)			Ownership Feasibility Analysis
Erie, CO (Project 2)	Town	1827	Audit & Data Reconciliation
Erie, CO (Project 3)			Ownership Support
Erie, CO (Project 4)			Streetlight Master Plan
Louisville, CO	City	143	Ownership Support, Feasibility Analysis, Decorative LED Design, Audit, & Data Reconciliation
Northglenn, CO	City	2,231	Audit, Data Reconciliation, & Lighting Deficiency Analysis
Thornton, CO	Town	8899	Streetlight Ownership Feasibility Analysis
Windsor, CO (Project 1)			Ownership Feasibility Analysis
Windsor, CO (Project 2)	Town	1,978	Audit, Data Reconciliation, & Ownership Support
Windsor, CO (Project 3)			Streetlight Master Plan
Windsor, CO (Project 4)			Streetlight Maintenance Support
Connecticut			
Contracts Total: 48 Total Fixtures: 62,984			
Municipality	Type	Fixture Count	Scope of Work
Berlin, CT (Project 1)	Town	2,537	Turnkey LED Conversion
Berlin, CT (Project 2)			Maintenance Services
Bristol, CT	Town	5,500	Turnkey LED Conversion
Chester, CT (Project 1)	Town	313	Turnkey LED Conversion
Chester, CT (Project 2)			Maintenance Services
Darien, CT (Project 1)	Town	843	Turnkey LED Conversion
Darien, CT (Project 2)			Maintenance Services
East Lyme, CT (Project 1)	Town	1,498	Turnkey LED Conversion
East Lyme, CT (Project 2)			Maintenance Services
Farmington, CT (Project 1)	Town	1,728	Turnkey LED Conversion
Farmington, CT (Project 2)			Maintenance Services
Gales Ferry, CT	Town	87	Turnkey LED Conversion
Glastonbury, CT	Town	1000	Turnkey LED Conversion
Granby, CT (Project 1)	Town	157	Turnkey LED Conversion
Granby, CT (Project 2)			Maintenance Services
Groton Utilities, CT	Municipal Utility	2,256	Turnkey LED Conversion
Groton, CT (Project 1)	Town	1,550	Turnkey LED Conversion
Groton, CT (Project 2)			Maintenance Services
Jewett City, CT	Borough	220	Turnkey LED Conversion
Ledyard, CT	Town	292	Turnkey LED Conversion
Mansfield, CT (Project 1)	Town	800	Turnkey LED Conversion
Mansfield, CT (Project 2)			Maintenance Services

Connecticut (Continued)			
Contracts Total: 48 Total Fixtures: 62,984			
Meriden, CT (Project 1)	City	4,799	Turnkey LED Conversion
Meriden, CT (Project 2)			Maintenance Services
Middlefield, CT (Project 1)	Town	351	Turnkey LED Conversion
Middlefield, CT (Project 2)			Maintenance Services
Middletown, CT (Project 1)	City	5,080	Turnkey LED Conversion
Middletown, CT (Project 2)			Maintenance Services
Montville, CT (Project 1)	Town	1,777	Turnkey LED Conversion
Montville, CT (Project 2)			Maintenance Services
New London, CT	City	2,516	Turnkey LED Conversion
Norwich, CT	Municipal Utility	5049	Turnkey LED Conversion
Old Lyme, CT (Project 1)	Town	396	Turnkey LED Conversion
Old Lyme, CT (Project 2)	Town		Maintenance Services
Putnam (Spc District), CT	Town	858	Audit, Data Reconciliation
Rocky Hill, CT	Town	1,683	Audit, Data Reconciliation
South Norwalk Electric & Water, CT	Municipal Utility	1,116	Turnkey LED Conversion
Sterling, CT	Town	75	Turnkey LED Conversion
Stonington, CT	Town	1,700	Ownership Support & Turnkey LED Conversion
Suffield, CT (Project 1)	Town	680	Full Turnkey LED Conversion
Suffield, CT (Project 2)			Maintenance Services
Vernon, CT (Project 1)	Town	1,669	Turnkey LED Conversion
Vernon, CT (Project 2)			Maintenance Services
Waterbury, CT	City	7250	Audit, Data Reconciliation, Design, & Rebate/Rate Changes
Waterford, CT	City	1,976	Full Turnkey LED Conversion
West Hartford, CT	Town	6,500	Full Turnkey LED Conversion
Wolcott, CT (Project 1)	Town	728	Turnkey LED Conversion
Wolcott, CT (Project 2)			Maintenance Services
Massachusetts			
Contracts Total: 56 Total Fixtures: 84,042			
Municipality	Type	Fixture Count	Scope of Work
Andover, MA	Town	1,564	Turnkey LED Conversion
Ayer, MA	Town	520	Turnkey LED Conversion & Controls
Billerica, MA	Town	2,600	Turnkey LED Conversion
Boston, MA	City	4,000	Audit, Data Reconciliation of Decorative Fixtures
Bridgewater, MA	Town	1,286	Turnkey LED Conversion
Burlington, MA	City	2,400	Turnkey LED Conversion
Clinton, MA	Town	923	Turnkey LED Conversion
Dalton, MA	Town	740	Turnkey LED Conversion
Dracut, MA	Town	1,555	Turnkey LED Conversion
Dudley, MA	Town	600	Turnkey LED Conversion
Duxbury, MA	Town	343	Turnkey LED Conversion
Erving, MA	Town	163	Turnkey LED Conversion
Everett, MA	City	2,965	Turnkey LED Conversion
Franklin, MA	Town	1,648	Turnkey LED Conversion
Gardner, MA	City	1,532	Turnkey LED Conversion
Grafton, MA	Town	860	Turnkey LED Conversion
Hanover, MA	Town	505	Turnkey LED Conversion
Hopkinton, MA	Town	563	Turnkey LED Conversion
Leominster, MA	City	3,637	Turnkey LED Conversion & Controls
Lexington, MA	Town	2,700	Turnkey LED Conversion
Longmeadow, MA	Town	1,500	Turnkey LED Conversion
Lowell, MA	City	7,000	Turnkey LED Conversion
Malden, MA	City	3,694	Turnkey LED Conversion
Manchester-by-the-Sea, MA	Town	363	Turnkey LED Conversion
Marion, MA	City	350	Turnkey LED Conversion
Medford, MA	City	4,618	Turnkey LED Conversion
Millis, MA	Town	436	Turnkey LED Conversion
Nahant, MA	Town	565	Turnkey LED Conversion
Nantucket, MA	Town	798	Feasibility Analysis
Newbury, MA	Town	500	Turnkey LED Conversion
North Andover, MA	Town	1,302	Turnkey LED Conversion
Northbridge, MA	Town	1,181	Turnkey LED Conversion
Oxford, MA	Town	945	Turnkey LED Conversion

Massachusetts (Continued)			
Contracts Total: 56 Total Fixtures: 84,042			
Palmer, MA (Project 1)	Town	902	Turnkey LED Conversion
Palmer, MA (Project 2)			Maintenance Services
Rockport, MA	Town	771	Audit, Design, & Ownership Support
Saugus, MA	Town	2,850	Turnkey LED Conversion, Controls
Sharon, MA	Town	1,600	Turnkey LED Conversion
Somerville, MA	City	4,842	Audit, Design/Installation Management
Spencer, MA	Town	885	Turnkey LED Conversion
Sudbury, MA	Town	591	Turnkey LED Conversion
Walpole, MA (Project 1)	Town	2,092	Turnkey LED Conversion
Walpole, MA (Project 2)	Town	224	Exterior Lights Audit & Data Reconciliation
Ware, MA	Town	823	Turnkey LED Conversion
Warren, MA (Project 1)			Turnkey LED Conversion
Warren, MA (Project 2)	Town	437	Maintenance Services
Watertown, MA	City	783	Turnkey LED Conversion
Wayland, MA	Town	714	Turnkey LED Conversion
Webster, MA	Town	1,485	Turnkey LED Conversion
Westfield Electric MUNI Utility, MA	Municipal Utility	4,000	Design and Photometrics
Westport, MA	Town	205	Turnkey LED Conversion
Weymouth, MA	Town	3,720	Turnkey LED Conversion & Controls
Williamstown, MA (Project 1)			Turnkey LED Conversion
Williamstown, MA (Project 2)	Town	627	Maintenance Services
Winchendon, MA	Town	564	Turnkey LED Conversion
Winchester, MA	Town	1,571	Turnkey LED Conversion
Maine			
Contracts Total: 2 Total Fixtures: 840			
Municipality	Type	Fixture Count	Scope of Work
Brewer, ME	City	600	Turnkey LED Conversion
Orono, ME	Town	240	Turnkey LED Conversion
Missouri			
Contracts Total: 2 Total Fixtures: 6,613			
Municipality	Type	Fixture Count	Scope of Work
Ballwin, MO	City	2,113	Ownership Support
O'Fallon, MO	City	4,500	Ownership Support
Nebraska			
Contracts Total: 4 Total Fixtures: 4,343			
Municipality	Type	Fixture Count	Scope of Work
Aurora, NE	City	200	Audit & Data Reconciliation
Howells, NE	Village	200	Audit & Data Reconciliation
Kearney, NE	City	3,306	Audit & Data Reconciliation
Nebraska Public Power District, NE	Municipal Utility	637	Audit, Data Reconciliation, & Design
New Jersey			
Contracts Total: 2 Total Fixtures: 13,535			
Municipality	Type	Fixture Count	Scope of Work
Jackson, NJ	Township	4,235	Feasibility Analysis
Toms River, NJ	Township	9,300	Audit, Data Reconciliation, Design, & Ownership Support
New Hampshire			
Contracts Total: 4 Total Fixtures: 803			
Municipality	Type	Fixture Count	Scope of Work
Goffstown, NH	Town	460	Turnkey LED Conversion
Jaffrey, NH	Town	151	Turnkey LED Conversion
Londonderry, NH	Town	143	Turnkey LED Conversion
North Stratford, NH	Town	49	Turnkey LED Conversion

New York

Contracts Total: 6 Total Fixtures: 43,808

Municipality	Type	Fixture Count	Scope of Work
Buffalo, NY	City	33,000	LED Conversion & Ownership Feasibility Analysis
East Rochester, NY	City	887	Ownership Feasibility Analysis
Geneva, NY	City	1,696	Turnkey LED Conversion
Gloversville, NY	City	1,243	Ownership Feasibility Analysis, Ownership Support, & Turnkey LED Conversion
Hamburg, NY	City	6,049	Audit, Data Reconciliation, & Design
Ogdensburg, NY	City	933	Turnkey LED Conversion

Ohio

Contracts Total: 5 Total Fixtures: 41,678

Municipality	Type	Fixture Count	Scope of Work
Athens, OH	City	1,100	Audit, Data Reconciliation, Design, Ownership Feasibility Analysis, & Ownership Support
Cincinnati, OH	City	31,762	Audit, Data Reconciliation, Streetlight Repair Support
Independence, OH	City	1,000	Audit, Data Reconciliation, Design, Ownership Support, & Ownership Feasibility Analysis
Warren, OH	City	5,319	Ownership Feasibility Analysis
Zanesville, OH	City	2,497	Audit & Data Reconciliation

Tennessee

Contracts Total: 2 Total Fixtures: 3,349

Municipality	Type	Fixture Count	Scope of Work
Paris, TN	City	2,541	Turnkey LED Conversion (Subcontractor to Prime)
Rockwood, TN	City	808	Turnkey LED Conversion (Subcontractor to Prime)

Texas

Contracts Total: 9 Total Fixtures: 199,390

Municipality	Type	Fixture Count	Scope of Work
Coppell, TX	City	3,152	Ownership Feasibility Analysis
Corinth, TX	City	898	Audit, Data Reconciliation, Design, & Ownership Support
Grapevine, TX	City	2,700	Audit & Ownership Feasibility Analysis
Houston, TX	City	175,000	Streetlight Ownership/Maintenance Plan
Keller, TX	City	3,200	Ownership Feasibility Analysis
Killeen, TX	City	4,440	Audit, Data Reconciliation, Design, & Ownership Support
Round Rock, TX (Project 1)			Ownership Support
Round Rock, TX (Project 2)	City	10,000	Audit & Data Reconciliation
Round Rock, TX (Project 3)			LED Conversion Design & Final Ownership Transfer Support

Washington

Contracts Total: 8 Total Fixtures: 12,715

Municipality	Type	Fixture Count	Scope of Work
Bremerton, WA (Project 1)			Ownership Feasibility Analysis
Bremerton, WA (Project 2)	City	1,675	Lighting Deficiency Study
Chelan County Public Utility District, WA	Municipal Utility	7,000	Audit, Data Reconciliation, & Design
Des Moines, WA	City	1,719	Ownership Feasibility Analysis
Maple Valley, WA	City	419	Ownership Feasibility Analysis
Newcastle, WA	City	769	Ownership Feasibility Analysis
SeaTac, WA (Project 1)			Ownership Feasibility Analysis
SeaTac, WA (Project 2)	City	1,133	Ownership Support

Various States

Contracts Total: 9 Total Fixtures: 68,016

Municipality	Type	Fixture Count	Scope of Work
Carbondale, IL	City	1,800	Audit & Data Reconciliation
Columbia County, GA	County	10,000	Streetlight Master Plan
Gilbert, AR	Town	16	Ownership Support
Hyattsville, MD	City	2,500	Ownership Feasibility Analysis
Kauai Island Utility Cooperative, HI	Municipal Utility	3,500	Turnkey LED Conversion & Controls
Mesa, AZ	City	40,000	Development of Street Light Master Plan
Miami Lakes, FL	City	900	Turnkey LED Conversion
Missoula, MT	City	6,000	Ownership Feasibility Analysis
Royal Oak, MI	City	3,300	Audit & Data Reconciliation