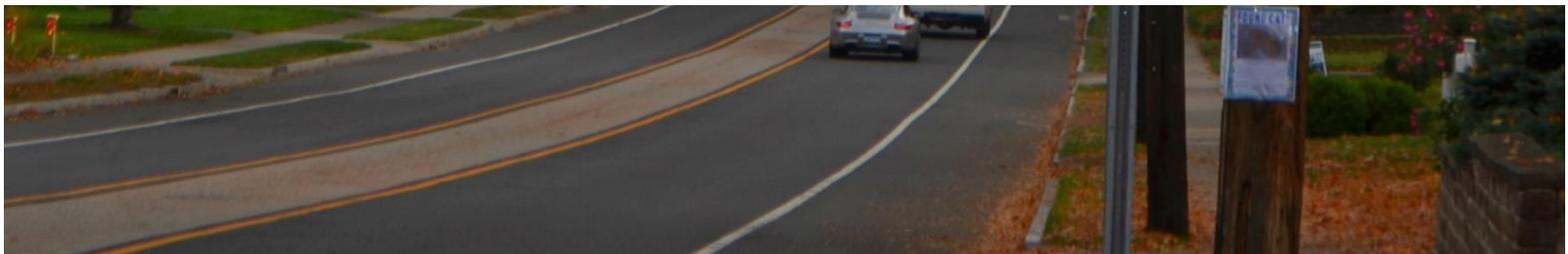




PROPOSAL IN RESPONSE TO THE CITY OF SANFORD'S REQUEST FOR PROPOSALS FOR IMPROVEMENTS TO THE CITY STREETLIGHT SYSTEM



Submitted by:

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Tanko Streetlighting, Inc.
220 Bayshore Boulevard
San Francisco, CA 94124

Submitted to:

Ian Houseal
Director of Community Development
City of Sanford
City Manager's Office, 3rd Floor
City Hall, 919 Main Street
Sanford, ME 04073
iphouseal@sanfordmaine.org

November 6, 2019

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1. COVER LETTER

A cover letter introducing the contractor, explaining the approach that was taken with the submission and that will be taken during the project including the maintenance of the system after the project is complete.

November 6, 2019

Ian Houseal
 Director of Community Development
 City of Sanford
 City Manager's Office, 3rd Floor
 City Hall, 919 Main Street
 Sanford, ME 04073
 iphouseal@sanfordmaine.org

Dear Mr. Houseal,

Tanko Streetlighting, Inc. ("Tanko Lighting") appreciates the opportunity to submit this proposal in response to the City of Sanford's Request for Proposals for Improvements to the City Streetlight System. Tanko Lighting acknowledges receipt of the RFP documents, including the City's Questions and Answers documents (Rounds One and Two) and the revised RFP documents (amended October 15, 2019).

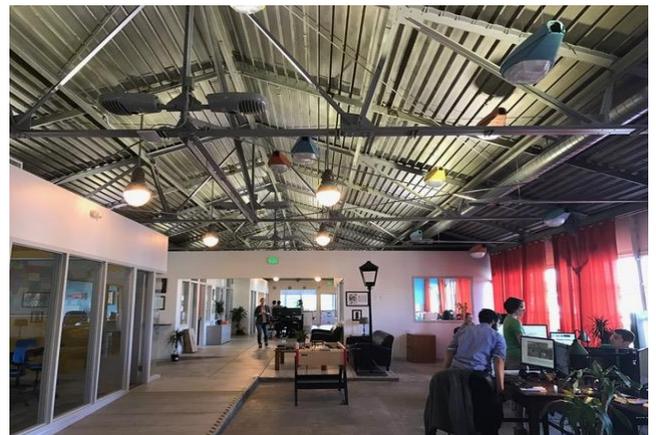
Tanko Lighting understands that the City is seeking to partner with a firm that can assist in turnkey services to convert its streetlight system to LED fixtures. We believe that our firm is the most qualified partner to assist the City in meeting these goals.

Tanko Lighting is a national firm focused on providing professional services for turn-key municipal energy efficiency streetlight conversion projects. Our company has previously been or is currently involved with the energy efficiency conversion of more than 500,000 streetlights throughout the nation – and is actively developing projects for an additional 550,000 streetlight fixtures. Our work has spanned more than twenty-three states, and fifty-five utilities. Further, our firm is familiar with similar projects in Maine, providing turn-key LED streetlight conversion services for several municipalities in the region, including the Cities of Brewer and Orono, ME. This experience equips our team with the best context to ensure that the City's project will be efficient and successful.

Company Description

A streetlight conversion project is a significant investment – of taxpayer dollars, Council attention and staff effort. A city must live with the decisions it makes regarding a conversion project – who it selects, the data that it collects, and the design and products it approves – for a little more than two decades (the rated life of the fixtures themselves). Given these factors, selecting a team to assist with the conversion process should not be taken lightly – and only a proven municipal streetlighting expert should be entrusted with the task.

Since 2003, Tanko Lighting has assisted municipalities with their streetlighting needs and is a national firm focused on providing professional services for turn-key municipal streetlighting conversion projects. Our company is a privately held S Corporation and holds electrical contractor licenses in the States of California and Arizona. Additionally, our firm is a Certified Contractor by the Commonwealth of Massachusetts' Division of Capital Management and Maintenance (DCAMM), a Qualified Vendor with the



Tanko Lighting's office – where streetlighting is integrated into the fabric of everything we do.

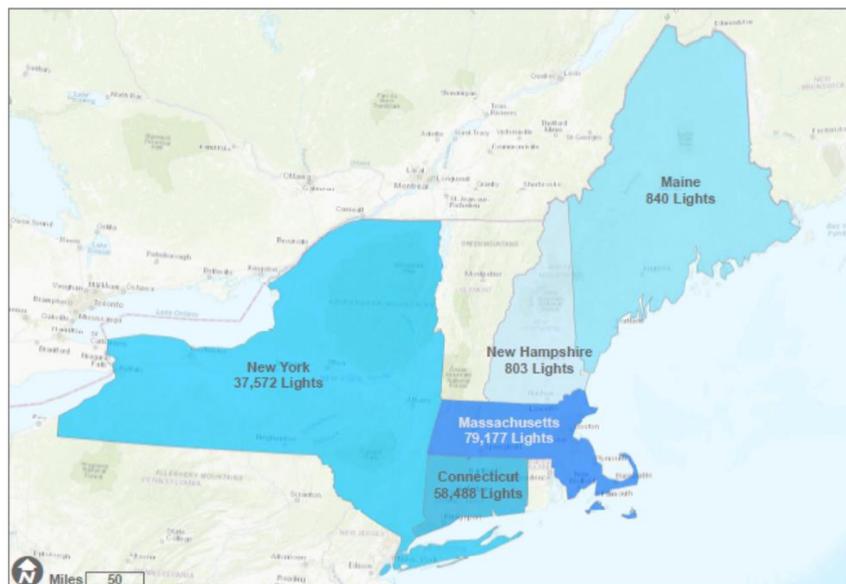


Connecticut Conference of Municipalities, and is a registered Energy Services Company (ESCO) with the United States Department of Energy. Further, our company is a registered Small Business Entity with the US General Services Administration and the Small Business Administration.

Tanko Lighting is focused exclusively on municipal energy efficiency streetlighting conversion projects. With decades of experience serving this market, our firm is the municipal streetlight expert. Because of our technical experience and national context, we are intimately familiar with industry standards and trends, as well as municipalities' challenges with aging infrastructure.

Tanko Lighting is uniquely qualified to assist the City with this project. Please find several elements demonstrating our firm's qualifications below:

- Municipal Streetlight Conversion Experience:** We are the only US-based company dedicated to municipal streetlighting projects – and the only company with an entire staff solely dedicated to such projects. As such, we have the largest portfolio of active municipal streetlight conversion projects; have previously been or are currently involved with the energy efficiency conversion of more than 500,000 streetlights throughout the nation; and are actively developing projects for an additional 550,000+ streetlight fixtures. Additionally, our work has spanned more than twenty-three states and fifty-five utilities. Further, we have conducted more pilot and design projects than anyone – most have led to subsequent conversion contracts, which shows our expertise level. Finally, our expertise has been forged by diverse project types – including various sized projects (ranging from large 38,000+ fixtures to as few as 49 fixtures), as well as incredibly complex projects, derived from such factors as square mileage/area, complicated data, inconsistent existing design, and complex scopes of work.
- National/Regional Context:** Tanko Lighting's broad experience with feasibility, design, and implementation of LED conversion projects provides tremendous national context that will benefit the City by ensuring that the project is consistent with industry standards during each phase of the project. Further, with a satellite office in Portland, ME, we have been actively working in several municipalities in the region, including for the Cities of Brewer, ME and Orono, ME. Additionally, our involvement with more than seventy-five municipalities, representing more than 176,000 streetlights in the Northeast region (see map below) – ensures the City of our familiarity with such projects in the region.



Tanko Street Light Projects - Northeast Region
Total Lights Contracted: 176,880



- Data Reconciliation/Management:** Tanko Lighting believes that utilizing data collection and analysis throughout all stages of a project results in superior project management. Our own in-house data team has the right blend of both streetlighting technical expertise and data analysis skills to collect and reconcile accurate project data. While other firms often subcontract data collection and management, our team retains these activities in-house to better inform the design and project management processes. Field staff are provided devices that track the Global Position System (GPS) coordinates and other characteristics of the existing fixtures for the audit phase, which, when compared with town data, streamlines the accuracy of the ordering and installation processes. Additionally, our team utilizes the most state-of-the-art technology and industry standard software (ESRI's ArcGIS) with the highest degree of spatial accuracy to process data and provide shape files that are fully compatible with clients' GIS records. Our field auditors have accurately collected data on thousands of streetlight fixtures – ensuring that the City's audit will be conducted by highly qualified professionals with tremendous field experience. As a result, our projects are well-designed, streamlined, accurate, efficient and cost effective. Our focus on data results in significant transparency throughout all phases of the project. Additionally, reconciling the audit data with existing city records is critical to providing an accurate final existing inventory. In Tanko Lighting's experience, most initial utility inventory records are highly inaccurate, which can lead to overstating or understating the quantity of existing assets. In countless projects, our team has demonstrated its ability to reconcile audit data, as well as provide substantiated evidence to utility companies when field conditions vary from initial utility-provided inventory records.
- Financial Analysis:** Tanko Lighting has conducted hundreds of financial analyses for municipalities nationwide, representing thousands of fixtures, to ascertain the value of converting to energy efficient streetlight systems. Leveraging its vast industry knowledge to accurately estimate relevant costs and savings and integrating the information into the implementation phase of a project is a one of our team's core competencies.
- Financing Assistance:** Tanko Lighting has extensive experience with identifying and coordinating both cost-effective financing, as well as incentives and utility rebates for its clients. Virtually every one of our projects involves utility rebates – and we are intimately familiar with dozens of utility rebate programs around the country. We typically assist clients with securing rebates by identifying products that meet utility rebate program requirements, completing the required pre-install paperwork with the utility, filing the rebate applications at the time of installation, and ensuring that all final program compliance is performed. For those clients interested in financing, we work with a variety of third-party private financing entities (including local banks) to explain the project and coordinate secure financing options for its clients. We also provide required reporting for financed projects, including final financial analyses based on the installed products.
- Experience with Acquisition Projects:** There is a growing nationwide trend in which municipalities are acquiring their streetlight infrastructure from their local private utility companies. This provides tremendous advantages to the municipality. Not only does it allow the municipality to control the management of the system within its geographic borders, it also involves tremendous cost savings – particularly related to maintenance and energy (as many utilities charge exorbitant fees for energy and maintenance rates for the systems). Further, once a municipality acquires its system, it can reap additional savings benefits by converting to LED fixtures. Tanko Lighting is at the forefront of this movement and has been working with several municipalities nationwide to assist in their streetlight acquisition strategies from investor-owned utilities. Our team's experience with acquisitions includes providing valuation, field data collection, acquisition feasibility analysis, and acquisition negotiations with the utility on behalf of the client. Recent projects involving acquisition support include the following municipalities:

 - Brewer, ME (600 fixtures)
 - Orono, ME (240 fixtures)
 - Buffalo, NY (33,000 fixtures)



Tanko Lighting's project in Orono, ME

- Geneva, NY (1,700 fixtures)
- Vernon, CT (1,700 fixtures)
- Berlin, CT (2,500 fixtures)
- East Lyme, CT (1,500 fixtures)
- Warren, MA (430 fixtures)
- Andover, MA (1,500 fixtures)
- Wolcott, CT (980 fixtures)
- Glastonbury, CT (1,500 fixtures)
- Darien, CT (850 fixtures)
- Santa Clarita, CA (18,000 fixtures)
- West Hollywood, CA (2,300 fixtures)
- Rancho Cucamonga, CA (15,000 fixtures)
- Santa Ana, CA (11,500 fixtures)
- Tustin, CA (3,500 fixtures)
- Orange, CA (6,000 fixtures)
- Bell, CA (1,672 fixtures)
- Stanton, CA (1,159 fixtures)
- Claremont, CA (1,500 fixtures)
- La Verne, CA (1,979 fixtures)
- Simi Valley, CA (8,325 fixtures)
- La Puente, CA (2,100 fixtures)



Tanko Lighting's LED Conversion in Rancho Cucamonga, CA

- **LED Conversion Design:** Any consultant can select streetlight fixtures from a catalog, but only an expert can walk the City through its specific nuances and existing field conditions that warrant a customized approach to design. As a streetlight design expert, Tanko Lighting has developed designs for both turn-key LED streetlight conversion projects, as well as design-only streetlight projects, and is equipped to provide a comprehensive approach to the design process. Because our team is involved with turn-key LED streetlight conversion projects nationwide, it has tremendous context from which to base its LED design recommendations. Tanko Lighting utilizes industry standards (including Illuminating Engineering Society (IES) RP8 guidelines) – which typically involves organizing the existing streetlight infrastructure by road classification (e.g. arterial, collector, residential streets) and applying standard LED replacement wattage recommendations based on the location of each existing HPS fixture. Additionally, we obtain client feedback (from such stakeholders as safety coordinators and police officers), consider areas of concern that are currently over or under-lit, and apply customized solutions to these locations so that a municipality's conversion project results in a comprehensive re-design that improves public safety and meets the needs of the current system.
- **Selective Subcontracting:** Tanko Lighting is highly aware of its core competencies. It thus retains the essential project activities (such as design, engineering, data collection/reconciliation, product procurement and project management) in-house to ensure that the project is run cost-effectively, efficiently and successfully. Tanko Lighting practices selective subcontracting, in that it sources out limited key project activities (such as installation) to qualified (e.g. a stellar reputation and stable bonding capacity), licensed streetlight experts local to the project to obtain competitive pricing and prevent the project from accruing unnecessary costs and change orders. Further, selective subcontracting allows Tanko Lighting the flexibility to obtain additional installation resources as needed, and allows the City to invest in the local economy and leverage local expertise by including local subcontractors in the project. For this project, we will utilize On Target Utility Services ("On Target") as our subcontractor for installation and maintenance services. On Target is a complete electrical contracting service company (see list of license holders/numbers in Appendix C). On Target provides comprehensive, quality service solutions for multiple facets of power, telecommunications, cable and private utilities. On Target is an approved contractor by CMP. The firm has converted more than 15,000 LED streetlight fixtures to date for such municipal clients as the Cities of Portland, ME, Scarborough, ME, Belfast, ME, Lewiston, ME, Dover Foxcroft, ME, Falmouth, ME, Wells, ME, South Portland, ME, Freeport, ME, Auburn, ME, Oxford, ME, Paris, ME, and Norway, ME.

- Experience with Maintenance Projects:** Tanko Lighting has extensive experience with assisting municipalities with maintaining their recently acquired and/or converted streetlight systems over time. Whether assisting with warranty, HPS, or LED maintenance, our expertise and timely remedies ensure that our clients’ systems are attended to and operating optimally. Recent maintenance projects include contracts with the following municipalities: Mansfield, CT, Groton, CT, Chester, CT, Berlin, CT, Meriden, CT, Vernon, CT, Wolcott, CT, Simi Valley, CA, Rancho Cucamonga, CA, La Puente, CA, Santa Clarita, CA, Darien, CT, and East Lyme, CT. It is important to note that one critical path aspect to performing quality maintenance services is controlling and managing the data. Contractors who can remedy the service ticket in the field are plentiful; however, to properly coordinate the logistics and accurately report results to the municipality, an experienced project manager with a healthy respect for data is needed. With its GIS software, baseline municipal GIS records from the LED conversion, and experience utilizing local subcontractors to respond to service tickets, our team is well-suited to maintain the City’s streetlight system.
- Accessibility:** As a mid-sized firm, Tanko Lighting provides its municipal clients with all the necessary resources to successfully accomplish complex streetlighting projects – without the challenges of a large, bureaucratic firm. This enables every client to receive personal attention, with a primary point of contact (the Project Manager) providing superior customer service through responsiveness, accessibility, and the agility to create accelerated decisions and solutions leading to effective results. Further, our firm’s size enables all clients to have direct access to the company’s Chief Executive Officer, Jason Tanko, at any point during the project – which results in clients having an industry expert available at their fingertips.

Project Approach

Tanko Lighting’s proven approach to municipal streetlight acquisition and LED conversion projects is comprehensive and data-driven, which results in accurate and efficient project implementation. The foundation of our project management approach is data. From Global Positioning System (GPS) location coordinates to fixture wattages, accurate data collection and data management is the backbone from which our methodology stems. Our Geographic Information System (GIS) and data expertise lead to accurate existing inventory characteristics and quantities, as well as granular design, precise material procurement, organized installation maps, and efficient installations. Having in-house experts in GIS streetlighting enables our team to provide superior service and unparalleled quality control on all projects. Ultimately, this results in minimized project delays (which translates into more expedient energy savings) and stabilized job costing by virtually eliminating change orders for our clients.



Tanko Lighting’s GIS audit is the backbone of the project– as the precise data enables accuracy throughout all phases.

Services

Our team recognizes the comprehensive nature of the City’s project and offers an approach that will streamline tasks and provide seamless deliverables. Utilizing superior products and tremendous technical expertise, our team’s involvement will result in the successful implementation of this project. Please find below our proposed scope of services for this project.

Phase 1: Audit/Project Design Phase

The following tasks will be part of Phase 1:

Task 1: Comprehensive GIS Audit of Existing Streetlights

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 design and product procurement. The GIS audit also results in streamlined installation, as it identifies potential obstructions and other on-site challenges, as well as enables our team to

effectively manage the installation by knowing which replacement fixtures need to be installed at every location – ahead of time. Having this data prior to the installation phase is crucial when coordinating multiple installation crews simultaneously. Tanko Lighting minimizes costs by not subcontracting this critical service.

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. It is essential to proper design – which is why our auditors collect more than thirty fields of data per streetlight fixture. This ensures we have comprehensive characteristics for each existing fixture to design the proper replacement LED fixture.

It should be noted that we utilize the most state-of-the-art technology with the highest degree of spatial accuracy and utilize the industry standard software – ESRI’s ArcGIS – to process data and provide shape files that are fully compatible with clients’ GIS records.

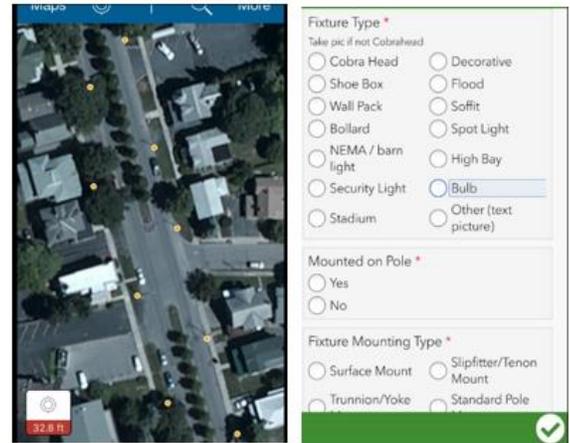
Tanko Lighting's approach to ensuring spatial accuracy is based on our real-world experience using a variety of devices and approaches, from smartphones to survey-grade GPS units. Although some GPS units are capable of achieving sub-meter accuracy, they do not guarantee sub-meter accuracy, and our team has found that common field conditions (e.g. tree canopy, tall/densely clustered buildings, cloud cover) often prevent these devices from attaining their maximum rated accuracy. Furthermore, in anything less than ideal circumstances, giving the GPS unit more time to triangulate is often the only way to improve accuracy; the less ideal the circumstances, the more time required, and accuracy is still not guaranteed. In our experience, audits using survey-grade GPS devices are more time consuming and, ironically, require extensive spatial quality control (QC) and correction by GIS analysts in the office, sometimes even requiring staff to return to locations in the field to make necessary corrections.

Given these challenges, our team has developed a more practical approach that ensures our audit progresses quickly, and that pole/fixture locations are accurate and easily identifiable by end users. Our field auditors use industry-standard ESRI apps and basemaps that enable them to view, QC, and make corrections to the GPS location of lights as they audit, cross-checking what they see in the field against the light's location on an imagery basemap. Our field staff are specially trained in comparing what they can see on the ground with how their data points are plotting on a map, and improving upon the GPS placement by referencing landmarks such as streets, sidewalks, driveways, buildings, street markings, and even the pole itself. This approach allows our field staff to ensure data points are placed accurately, while keeping them from getting bogged down waiting for a survey-grade GPS unit to attain desired accuracy levels. Our data analyst team then reviews these locations with respect to industry standard basemaps and any available ground-level imagery, and makes further refinements as necessary back in the office.

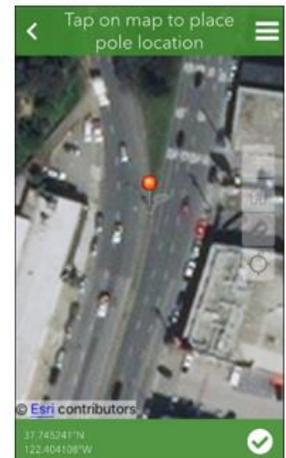
As such, our approach allows us to guarantee that points are within (+/- 1m) of the light's location according to industry-standard aerial or satellite imagery basemaps. Aerial and satellite imagery basemaps have varying levels of accuracy, from sub-meter to several meters. Our team has not found the accuracy of imagery basemaps to be a problem for two main reasons:

1. Streetlights are large, easily recognizable assets that are generally found at regular intervals in the field. Our team also collects 20-30 attributes at each pole that help further distinguish poles from one another.
2. Imagery basemaps can precisely communicate the location of a pole even if the basemap itself does not have sub-meter accuracy. Plotting the pole location with respect to the imagery basemap means that even if an imagery basemap is slightly skewed or shifted, the pole location is still readily apparent with respect to surrounding landmarks.

Auditor Data Collection Screens



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

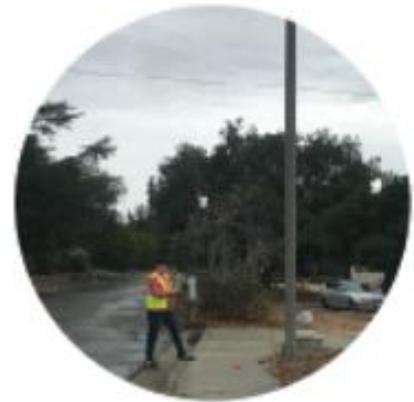


Furthermore, basemaps typically have a small shift over a large area, meaning the general pattern of poles is preserved.

Thus, our current methods have reliably guided our staff, installers, and clients to thousands of individual fixtures without confusion, while still providing for a timely and efficient field auditing process.

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

- Our initial audit has a 98% accuracy rate after the initial visit. Since we identify and rectify any missing data or errors, our final error rate is significantly less than 1% - which is further rectified during the installation and final commissioning phases of a project.
- Using trained auditors in 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 City/utility inventories), the integrity of its 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, exposed wiring, 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.
- Comprehensive access to the pole and fixture allows for a more conscientious design. Because our team collects so much information that can only be gathered in person (e.g. fixture wattage, various height/distance measurements of the light and street, and factors that inform lighting levels and distribution patterns), we can create a highly-customized design tailored to a city's specific lighting needs – and identify any concerns from the project start.
- Collecting data in person gives our team the highest possible certainty of what is in the field. This precision means that we do not waste money on extra fixtures and does not waste time ordering more at the end of the project to make up for any shortfalls due to inaccurate data. This precision also minimizes sloppy design (and inherent lower energy savings) – which are more likely from a subcontracted audit.
- Informing the City of which fixtures are eligible for purchase in the system and the quality of those assets, based on the pole conditions identified through the audit.



A Tanko Lighting auditor collecting information in the field.

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 and/or Town borders or other areas containing non- City -owned fixtures.
- Our team developing and providing to City staff for approval a list of the characteristics (the "Audit Attributes") of the data that will be collected during the audit.
- City staff providing our team with all available City and utility records for existing inventory.
- Our team reviewing these data records to determine which should be utilized for the data reconciliation phase.
- Our team initiating rate change processes with the utility.
- Our team developing audit maps, scheduling and dispatching auditors to the field.

Once the preparation phase is complete, the audit will commence.

We will collect data on the existing inventory – including both existing cobra head and decorative fixtures – and identify attributes on-site, including:

- The Global Positioning System (GPS) coordinates (latitude, longitude) of each fixture location and date of capture
- Fixture type
- Pole mounting configuration

- Fixture wattage
- Pole height, mounting type, and mast arm length
- Pole type, ID number, approximate age
- Physical attributes and/or issues – such as electrical hazards, pole leaning/damage, tree obstructions, etc.

Our auditors collect and transmit data points daily. We will compile data weekly to provide the City with a Weekly Audit Report (a sample can be provided upon request). The Weekly Audit Report will enable the City to identify and address any immediate safety concerns, as well as other issues – such as tree trimming – that may need attention prior to project installation.

Unlike other potential providers, Tanko Lighting is an industry expert focused solely on streetlighting. We have built our own in-house data team with the right blend of both streetlighting technical expertise and data analysis skills to collect and reconcile accurate project data (note that we never subcontract out the audit services). Further, our field auditors have accurately collected data on tens of thousands of streetlight fixtures nationwide – ensuring that City’s audit will be conducted by highly qualified professionals with tremendous experience. This renders Tanko Lighting as the most qualified to perform the GIS audit, as our staff is significantly experienced in the nuances and characteristics of all streetlight installations.

“At Graybar, we have worked with ESCOs around the country and there is no organization that is as professional, meticulous, and efficient as Tanko Lighting. We have serviced over 300,000 streetlights with Tanko Lighting and have had ZERO returns. Their audit is far more comprehensive than any other audits we have seen in the marketplace and allows for municipalities to have a true grasp on their lighting system. Utilizing Tanko Lighting ensures that the job will be completed on schedule and all parties involved will be well informed. There is no organization that can implement a streetlighting solution the way that Tanko Lighting can.”

Kristian Reyes, Manager
Lighting and PowerSmart Solutions

Deliverables:

- Weekly Audit Reports: An overview map listing the locations completed during the data collection phase (showing both weekly and comprehensive progress), along with a description of any issues that the City would need to devote immediate attention to – including electrical hazards, tree trimming needs, etc.

Task 2: Data Reconciliation

Tanko Lighting has developed a methodology to capture every streetlight asset owned by the 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 invoice/inventory to ensure that it has identified and converted all eligible assets. We share this information with customers during the pre-conversion phases of the project so that the municipality knows exactly what they own, and exactly which fixtures will be converted.

Simultaneously with the GIS audit, our team will conduct a thorough and detailed investigation of the City’s existing records, including utility billing records and maps. Our team will reconcile these City records with the data from the City-wide GIS audit to confirm ownership, eligibility for rebates, and billing record accuracy. In our experience, cross referencing these various data sources results in extremely precise and clean data because most projects typically have a utility billing discrepancy of approximately 5 – 10 percent of the inventory quantity. This results in cities being over-billed by their utility. We will identify discrepancies through the data reconciliation process, include this information in the subsequent negotiations with the utility, and will assist with remediating the bills on behalf of the City.

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

Deliverables:

- Pre-Construction Existing Inventory GIS Records: Electronic GIS records (in an ArcGIS geodatabase format, as well as Excel format) for all existing inventory in the City that has been reconciled with available utility and City records. This information will be provided as part of the final GIS data submitted upon completion (post-installation) of the project.

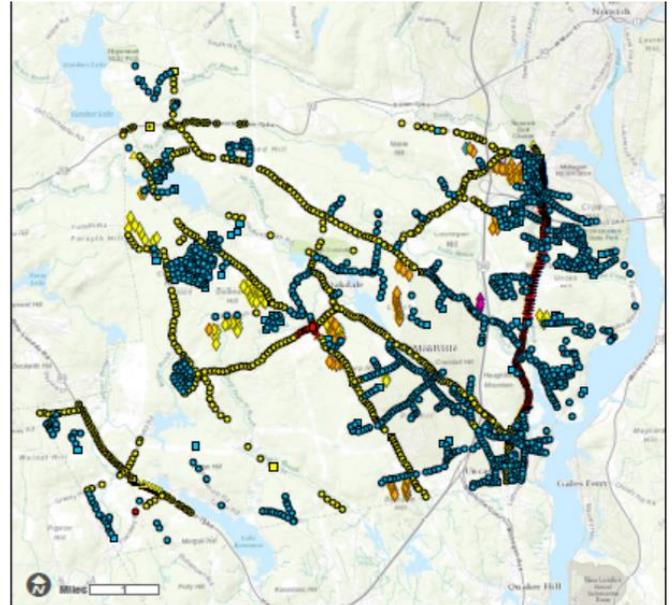


- **Reconciliation Report:** A concise report detailing any discrepancies found between records during the data.

Task 3: Acquisition Assistance

Tanko Lighting is well-versed in the process of assisting municipalities nationwide with acquiring their streetlight assets from their utilities. Our team facilitated the successful acquisition of the municipal streetlight assets from the utility in the City of Brewer, ME and Orono, ME. Further, our team has been involved with municipal streetlight acquisitions, including providing valuation, field data collection, acquisition feasibility analysis, and acquisition negotiations with the utility on behalf of clients for the following projects: Vernon, CT, Berlin, CT, Montville, CT, Farmington, CT, East Lyme, CT, Wolcott, CT, Glastonbury, CT, Warren, MA, Andover, MA, Buffalo, NY, Geneva, NY, West Hollywood, CA, Santa Ana, CA, Tustin, CA, Orange, CA, and Signal Hill, CA.

Our team will leverage its expertise to assist the City with developing and documenting an independent initial assessment of valuation based on the inventory data, as well as information provided by the utility. This process will entail determining fair market value by analyzing the inventory data to determine key elements of existing field conditions (such as vintage of the system, pole types, etc.) and comparing regional acquisition data to provide valuation context from other neighboring jurisdictions. Once a fair market valuation has been determined, Tanko Lighting will assist the City in negotiations with its utility to complete the purchase of the remaining system – upon request, this can include participation in meetings with the utility – as well as assistance with required paperwork.



Town of
Tankoville
Design Overview - Fixtures

Proposed Fixture Types	
● 25W Type B 3000K (158)	■ 88W Type D 4000K (9)
● 25W Type B 4000K (2)	■ 88W Type E 3000K (2)
● 25W Type D 3000K (88)	■ 88W Type E 4000K (74)
● 25W Type D 4000K (2)	▲ FL01 Flap Mount Flood (1)
● 32W Type B 3000K (477)	● PT01 Colonial Post Top (82)
● 32W Type B 4000K (74)	● PT02 Colonial Post Top (4)
● 32W Type D 3000K (21)	● PT03 Colonial Post Top (1)
● 32W Type D 4000K (7)	● PT04 Colonial Post Top (1)
● 32W Type E 3000K (8)	● PT05 Colonial Post Top (1)
● 32W Type E 4000K (14)	● PT06 Colonial Post Top (1)
● 88W Type B 3000K (12)	● S801 Colonial Post Top (5)
● 88W Type B 4000K (29)	
● 88W Type D 3000K (1)	

Design Approved By:

Name: _____

Title: _____

Signature: _____

Date: _____

Total Fixtures: 1900

A sample of Tanko Lighting’s design maps.

Deliverables:

- **Valuation Analysis:** Written feedback analyzing the utility’s valuation of the City’s streetlight system.
- **Acquisition Assistance:** Ongoing participation in negotiations with the utility and assistance with paperwork during the acquisition process.

Task 4: Design

In Tanko Lighting’s 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, we routinely conduct municipal-wide design processes for each of our turn-key streetlighting projects. Recent projects in which design processes were implemented include Brewer, ME, Orono, ME, Simi Valley, CA, La Verne, CA, Santa Clarita, CA, Chino Hills, CA, Fullerton, CA, Vernon, CT, and Malden, MA Bristol, CT, and Norwich, CT. This experience has led to our team’s streamlined approach to design.

Once our team has canvassed the City through the audit and established a “clean” data set of the existing conditions (via the data reconciliation process), it can then develop and apply a replacement design. Our team utilizes Illuminating Engineering Society (IES) RP8 guidelines for roadways and right of ways. Additionally, we utilize Trade Manual 12-12 for direction on light level equivalencies between HPS and LED and maintain a working knowledge of all the latest publications and updates in the market. 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 standards as guidelines and works closely with the City to develop customized proposed standards of comfort and functionality that match its needs.



Our goal is 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 photometric data, lifecycle cost analysis (including the initial capital outlay), net present value and return on investment, energy savings, as well as maps of the replacement plan (see sample map below).

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 generally throws the light in all directions, a typical LED fixture pinpoints the light spread to where it is needed most – on the roadway (see graphic to the right).

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.

Tanko Lighting is seasoned in this type of modeling. Our proven process involves manufacturer-provided theoretical photometrics modeling (demonstrating the light distribution from an aerial perspective at the fixture location). The results from these models portray the most accurate existing and replacement conditions that verify that the replacement LED fixtures will improve the system.

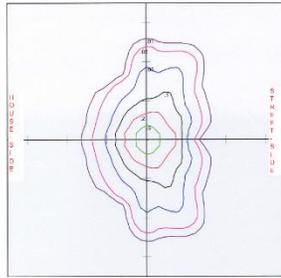
Tanko Lighting’s approach to comprehensive design for this project will include the following elements:

- Developing typical photometric layouts based on assumptions, including wattage, distribution type, pole height, spacing etc.
- Developing theoretic photometric layouts for one typical existing fixture per main roadway classification (one for residential, one for collector and one for arterial) to demonstrate baseline conditions and utilize as a point of comparison to the photometric layouts for replacement fixtures.
- Incorporating any relevant, City-approved elements from the City of Lewiston’s (ME) design policy (Appendix D of the RFP).
- Applying standard LED replacement wattage recommendations based on the location of each existing HPS fixture.
- Addressing distribution pattern needs for the specific roadway types and neighborhood characteristics (such as cul-de-sac locations) 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.
- Identifying deficiencies in the current streetlight system and recommending improved level-of-service, such as fixture removal(s) and new fixture installations in certain necessary locations.
- Reviewing additional data sets (upon request) to identify potential areas in need of special consideration (such as available data on important localized land uses (e.g. parks, schools, hospitals, etc.)) 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 on the previous page), as well as an analysis of the total cost, incentives, savings, and payback for the potential retrofit design.
- Presenting the options and total cost/incentives/savings/payback to the City and obtain its final approval on design.

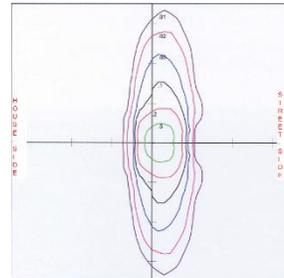


Examples of the different light distribution patterns from an HPS fixture (top) vs. an LED fixture (bottom).

It should be noted that our photometric analyses consider existing fixture distribution patterns (see sample in Graphic 1 below), as well as replacement fixture distribution patterns (see sample in Graphic 2 below).



Graphic 1: Sample Photometric Layout of 50W HPS Existing Fixture



Graphic 2: Sample Photometric Layout of 19W LED Replacement Fixture

Our team will walk the City through how to interpret the photometrics, reviewing how the results indicate the products' spread of light, the distances the fixtures reach, how much back light is present (which is wasted light), how much light is distributed directly under the fixture (also wasted light), and the general containment of light in the road/right-of-way. The interpretation of the photometrics data will enable the City to confidently choose a fixture that meets its preferences.

The overall benefits to Tanko Lighting's design approach include:

- **Standardization** – The City is ensured that there is a consistent design method resulting in wattage continuity on its streets. Standardization also leads to a reduction in the variety of fixtures that the City must keep in its inventory
- **Safety** – Based on the most updated field conditions, the City can be assured that the design matches the system's current needs and results in improved public safety from streets no longer being under or over lit
- **Efficiency** – The process takes a very thorough approach by examining all relevant field factors and thereby maximizes the available savings by utilizing the most efficient design, while meeting light output needs
- **Streamlined Installation** – The process allows for the development of a detailed scope of work (via a map of all replacements) by fixture for the installers to follow in the field – which enables more efficient materials gathering at the start of the day and results in more streamlined daily installations and simplicity for the awarded contractor

Deliverables:

- **Replacement Plan Maps:** City-wide maps with recommended LED replacement wattages for the City to review and approve.

Task 5: Financing Options

Tanko Lighting has worked on numerous contracts in which it facilitated financing for municipal streetlighting projects, including both public and private financing. Our team has assisted municipalities by providing an investment grade audit, determining project costs, life cycle costs, savings models, grant options and payback schedules, as well as directly coordinating with the financing entity and the municipality, providing documentation, and reporting about project progress to the financing entity.

Our team has also provided energy performance contracting with guaranteed energy savings for municipal streetlight projects. While we have experience with implementing performance contracts, we never recommend that particular contract model for municipal projects where streetlighting is the sole measure because the guarantee is unnecessary and only adds needless costs for the municipality.

The savings from streetlight-only projects are already inherently reliable because they are based on stable, regulated rates (in the City's case, rates regulated by CMP) and are not subject to the behavioral, weather, and other factors that typically render the savings from other energy efficiency measures (such as HVAC, interior lighting, etc.) risky. Thus, requiring a performance guarantee for streetlight-only projects is redundant, unwarranted, and certainly not worth the inflated cost for the City when the savings are so certain.

Further, energy savings performance contracts are not the industry standard for streetlight-only municipal projects. Whereas a few municipalities modeled their streetlight-only projects on performance contracts several years ago, the market has evolved to the point

that most municipalities are no longer utilizing performance contracts for these types of projects because they are not cost-effective. In fact, several municipalities – including the Cities of Pico Rivera, CA, Geneva, NY, Lysander, NY, Modesto, CA, La Puente, CA, and the Metropolitan Area Planning Commission (representing hundreds of cities throughout Massachusetts) – recently modeled their streetlight projects based on performance contracts, only to pivot to standard contracts during the procurement process.

Thus, for this project we recommend that the City follow industry standard for financing municipal turn-key streetlight conversion projects – through either a public bond or private financing. While there are advantages to public bond financing, there are several factors that make it less appealing than private financing, such as:

- The need for voter approval
- Advertising and election costs
- Staff burden, particularly with reporting requirements
- Lengthy process
- Prepayment penalties
- Term may exceed rated equipment life
- Hidden fees
- More relevant for large and long-term projects

Private (non-bond) financing has some advantages, a partial list can be found below – which makes it the typical way in which most similar projects are financed:

- No need for voter approval
- Energy cost savings from the streetlight upgrade repay the financing
- No upfront costs
- Documentation is simpler, and the process is streamlined
- Staff burden is minimized
- No hidden fees or reporting requirements
- Rated equipment life matches the lease term



Tanko Lighting provides accurate financial analyses to enable sound project budgeting.

Our team facilitates private financing through third party entities (such as Graybar Financial Services, GE Government Finance, TCF Equipment Financing, and Banc of America Public Capital Corp), which typically offer low-interest, financing that includes all costs related to the project, which are repaid through the project's savings. Our team will leverage its experience to identify and assist with coordinating financing for the project. It should be noted that our team is neutral when it comes to financing options – it has nothing to gain from any of the partners or offers that it helps to facilitate – which means that our company has no ulterior motives.

Also, our financing options are all compliant with the most current GASB and GAAP accounting regulations, and we will work with the City for its GASB 34 reporting to assure the most favorable accounting methodology and procedures.

Deliverables:

- **Financing Assistance:** Every City is different, and all cities have varying sensitivities to debt and the management of asset depreciation. Our team will deliver financing options that meet the City's individual needs at the most competitive price possible with consideration to debt and financial reporting.

Task 6: Financial Analysis

Tanko Lighting will utilize the reconciled data from the audit, as well as the City's preferences on fixtures, and/or other products, to develop a financial analysis, which will include:

- Baseline energy use, energy cost and operations and maintenance costs
- Estimated retrofit energy use and operations and maintenance costs
- Estimated sources of funding, including rebates
- Calculation of estimated total conversion cost (remaining design tasks, product, and installation), energy reduction, and simple payback
- Fixed unit pricing encompassing all costs that locks in the pricing and shields the City from change orders
- Estimated twenty-year projected savings and cash flows



Tanko Lighting's project in West Hartford, CT

Tanko Lighting's approach uses industry standards, published rates and operational hours, as well as conservative estimates on energy rate increases, savings and costs, which enables greater actual savings than the model. These elements – in conjunction with the fact that streetlight measures are not subject to the behavioral, weather, and other factors that can result in shifts in expected savings – enable minimal risk and maximized return for the City. Based on the Tanko Lighting's experience, the projected energy savings associated with streetlighting measures are in line with (or are often understated compared with) realized energy savings upon completion of the project. Because the use of the streetlight facilities is constant, elaborate verification approaches over time are not necessary and the municipalities' utility bills are the best indicators of consistency of savings. Given that the rated life of all the LED fixtures that Tanko Lighting will recommend is greater than twenty years, as well as the consistency of the annual operating hours, the savings verified from the first-year utility bills will be consistent for the rated life of the fixtures – and will maximize return for the City for more than twenty years.

Tanko Lighting will present the financial analysis to the City for final review of all energy savings and construction cost estimates to ensure accuracy and compliance.

Deliverables:

- **Financial Analysis:** A report outlining baseline conditions, as well as estimated project costs and savings.

Phase 2: Construction Phase

Once the City completes the Audit/Project Design Phase, it will be ready to commence the LED conversion of the project. Our team will oversee the product procurement, installation and commissioning to ensure the project is implemented efficiently and effectively. Phase 2 activities include the following Tasks:

Task 1: Fixture Selection/Procurement

Tanko Lighting is uniquely positioned for this project because it has worked with a wide variety of products across multiple manufacturers. This extensive experience enables Tanko Lighting with an understanding of the best products currently available in the market and which manufacturers are leading the industry with innovative products. As a full-service, solutions-based company focused on customer satisfaction, Tanko Lighting strives to ensure that its customers obtain the products they desire, regardless of the type or brand. Thus, our team employs product-neutral approach to products – it specifies the highest quality, energy efficient fixtures to meet each customer's unique needs – regardless of brand. This allows an approach that considers the City's preferences and needs devoid of any ulterior

motives. It should be noted that our product expertise and project experience extends beyond just LED cobra head fixture replacements, but also includes conversions of decorative fixtures, outdoor area lighting, parking facility lighting, and lighting controls.

Tanko Lighting will draw upon its experience to lead the City through a product analysis, providing the technical specifications for a variety of relevant new LED fixtures from major manufacturers based on the City's preference and standards. Tanko Lighting will assist the City in the final selection of the LED fixture that will be utilized in the conversion phase. Tanko Lighting will ensure that all fixture products meet industry and City standards, including being Design Lights Consortium-approved, and are warrantied for a minimum of ten (10) years.

Once the City approves the final product recommendations, Tanko Lighting will develop a specification and will procure the materials to ensure timely receipt of material to correspond with the project's installation schedule.

Deliverables:

- **Recommended Product Submittals:** Technical specification submittal sheets for recommended products.



Night Skies are Getting Brighter in Rancho Cucamonga

Cities around the Inland Empire are slowly replacing the yellow glow of traditional High Pressure Sodium (HPS) streetlights with whiter, brighter, and more energy-efficient Light Emitting Diode (LED) fixtures. The City of Rancho Cucamonga began converting some of its existing HPS streetlights to LEDs in Street Lighting District (SLD) 8 in the first quarter of 2013, and has since retrofitted almost 500 streetlights. The new fixtures have several benefits including significant energy and cost savings, increased nighttime visibility, and an extended lifespan that greatly reduces maintenance costs.

City-owned Rancho Cucamonga Municipal Utility will begin a pilot project to retrofit fixtures on Day Creek Boulevard (south of Foothill Boulevard) and Jack Benny Drive with new LED lights in November 2015. The project will feature a total of 14 new LED fixtures from seven different manufacturers and give the public the opportunity to see the different types of LED streetlight technologies available. All manufacturers included are among the leaders in the field of LED streetlights, and approved by the Design Lights Consortium (DLC).

During the nine to twelve months of the pilot project, members of the public will have the opportunity to provide comments and feedback. The information collected will help the City select the type of LED technology and the

**City of Rancho Cucamonga's website featured
Tanko Lighting's project messaging.**

Task 2: Community Outreach and Notification

Tanko Lighting believes that proper coordination of information and outreach to stakeholders is an essential part of ensuring a successful streetlight conversion project. To that end, our team will coordinate with the City's media office to help develop a community outreach and notification plan prior to the commencement of any project activities. The plan will ensure project awareness and minimize public disturbance. Specifically, our team will develop the message and provide the schedule to the City's media staff for distribution through the City's existing media outlets (press releases, website, etc.).

Deliverables:

- **Project Messaging and Schedule:** Specific language, draft press release, and timelines related to project activities to assist with notifying community members of the project.

Task 3: Logistics Management

Tanko Lighting will ensure that all logistics are carefully coordinated for the project. Our team will work with the City's main point of contact to develop an installation plan that minimizes inconvenience to the City and includes ordering schedules, traffic control plan, waste disposal procedures (that comply with all applicable State and Federal laws), and installation and commissioning schedules as required to the City.

Tanko Lighting is very familiar with the traffic control needs of a municipal streetlight conversion project, as traffic control is an element of virtually every Tanko Lighting project. Tanko Lighting understands that over-use of police details can incur unnecessary cost for the City. Given that a streetlight conversion project is a mobile operation requiring just a few minutes of work at each location, it can easily be likened to the same traffic control needs as the typical trash collection service in a city. As such, Tanko Lighting will work closely with the City during the Logistics Management phase to confirm police detail requirements and to ensure that they are minimized while properly maintaining safe traffic control. Further, during the audit and design phases, Tanko Lighting will identify any locations (such as key intersections, arterials, etc.) that are likely to be problematic and will recommend to the City these areas as potential needs for police details. Please note that the costs for police detail are not including in our proposal pricing.

Tanko Lighting will maintain proper communication and coordination with installers to ensure installation quality, work and public safety, compliance with project schedule and proper handling of waste. Our team will facilitate a pre-construction Kick-Off meeting with City staff and installers to review the traffic control plans, work safety, public safety and waste material handling procedures and requirements prior to the start of installation. We will also coordinate and participate in bi-weekly progress meetings with City staff.

Deliverables:



- Logistics Management Details: Ordering, traffic control plans, required permits, disposal strategy, pre-construction meeting, ongoing meetings, installation and commissioning schedules.

Task 4: Installation

Tanko Lighting routinely partners with subcontractors for installation for its turn-key municipal streetlighting projects. We believe that this is an ideal way to utilize local knowledge and leverage taxpayer dollars back to the local economy. As such, we are very familiar with how to properly solicit, vet and manage qualified local subcontractors.

For this project, we will utilize On Target Utility Services (“On Target”) as our subcontractor for installation and maintenance services. On Target is a complete electrical contracting service company (see list of license holders/numbers in Appendix C). On Target provides comprehensive, quality service solutions for multiple facets of power, telecommunications, cable and private utilities. On Target is an approved contractor by CMP. The firm has converted more than 15,000 LED streetlight fixtures to date for such municipal clients as the Cities of Portland, ME, Scarborough, ME, Belfast, ME, Lewiston, ME, Dover Foxcroft, ME, Falmouth, ME, Wells, ME, South Portland, ME, Freeport, ME, Auburn, ME, Oxford, ME, Paris, ME, and Norway, ME.

Tanko Lighting will ensure that On Target utilizes highly-trained professionals, properly trained in and abiding by all company and industry safety standards. On Target is fully insured and will be responsible for meeting all federal, state and local codes and laws.

On Target will provide safety, installation, traffic control, and environmental disposal services for this project. On Target’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. On Target will provide all required safety equipment for the project.

It is expected that each installation crew will install an average of thirty fixtures per day. Completion of the project commissioning (see Commissioning section 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.

“The project was completed without a hitch and we’ve had zero complaints to date. The best Project I’ve been responsible for.”

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

David Daltorio, PE
Town Engineer/Facilities Director
Town of Hopkinton, MA

If the City determines that pole labeling is a needed service, upon request, Tanko Lighting can provide labeling for all fixtures or just a subset of fixtures missing labels. If a labeling strategy is of interest to the City, Tanko Lighting will develop a scope of work based on the City’s needs and an estimated additional cost for these services.

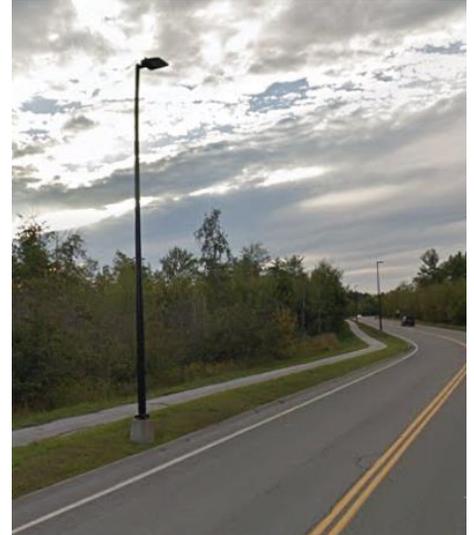
Please note that our team will be retrofitting the fixtures within an “as-is” system; however, we will not be responsible for remedying any “as-is” system needs/issues outside of the scope of this project (which is merely to retrofit the fixtures, install photocells, and provide first responder support for maintenance services). We will identify any “as-is” system needs/issues, including but not limited to no power,



faulty fuses, 480V fixtures, series fixture wiring, poles in violation of any trespass/clear zones because of high voltage, poles in disrepair, etc. during the course of the LED conversion phase or during the maintenance services phase (see below) and report to the City. However, while we will work with the City to recommend solutions, the City will be responsible for the costs associated with implementing any such remedies.

Tanko Lighting will be responsible for warranty work related only to materials and installation for a period of one year from the installation date (please note that this warranty period can be extended at the City's request for an additional cost). The installation warranty will cover fixture or photocell failure and issues related to the installation, such as incorrect mounting or wiring of fixture. The installation warranty will not cover issues unrelated to the installation, such as fuse failure, knockdowns, wire shorting, disconnection of the pole or arm from power source, weather related damage, vandalism, Acts of God, or unrelated capital work impacting the pole or fixture.

Upon installation, the City or its standard maintenance contractor will be responsible to serve as first-responder to all outages, shall identify locations where warranty-related work is necessary, and will notify Tanko Lighting of the warranty-related locations so that a remedy can be implemented. If the City selects Tanko Lighting for its maintenance services, our team will serve as the first-responder and dispatch accordingly.



Tanko Lighting's project in Brewer, ME

Deliverables:

- Installation Maps: Maps with locations and fixture information used to dispatch installation crews and allow City staff to track installation routes.
- Weekly Installation Report: A detailed listing of the locations completed during the installation phase, along with maps corresponding to locations.

Phase 3: Closeout Phase

A project is never complete until the final closeout tasks are finished. Thus, we will provide the following activities as our approach to Phase 3:

Task 1: Commissioning

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 municipal 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 City assistance. Tanko Lighting will provide the City with a complete commissioning report outlining any errors and actions taken to correct errors.

Deliverables:

- Commissioning Report: Detailed analysis of final installation verification and testing, including an outline of any errors and actions taken to correct errors.

Task 2: Staff Training

Tanko Lighting will develop and provide a training for City personnel in all aspects of installation, routine operation, maintenance, and safety of the LED fixtures installed.

Deliverables:

- **Training Materials:** Documentation of training curriculum presented during staff training.

Task 3: Rebate & Tariff Change Coordination

Our team will research any available rebate programs and facilitate all necessary tasks to ensure that the City receives the rebates and billing changes for which it is eligible. We will prepare all necessary and required documentation for the rebates and submit these to the appropriate departments within the utility. We will follow up with the utility to confirm the materials have been received and are in process. As the City will be the recipient of the rebate, the utility will negotiate with the City directly regarding the timing and issuance of the funds. Therefore, if known, we will provide the contact information for the utility staff person processing the application for the City staff to secure the final payment. If there are any inquiries from the utility to the City regarding the submitted applications, we will assist the City with responding to any questions.

We will also coordinate with the utility on changing tariffs to the newly-installed LED fixture rates. We will prepare the necessary documentation, submit to the utility, 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 the utility, the City staff will need to confirm that the modification appears in the City utility bills. If there are any inquiries from the utility to the City regarding the submitted applications, we will assist the City with responding to any questions.

Deliverables:

- **Rebate and Tariff Change Documentation:** A compilation of copies of paperwork submitted and processed with the utility regarding rebate applications and tariff changes.

Task 4: Final Reporting

A project is never completed until the final documentation and administrative requirements are met. We understand that proper follow through is essential to considering a project successfully executed. To that end, our team will coordinate all final reporting and data requirements to ensure that the City considers the project is compliant and complete. This includes:

- All product warranties and manuals
- Required utility documentation
- "As-built" record documents of newly installed LED streetlights in the form of electronic GIS format (ArcMAP) records, including all wattages, badge numbers, locations and other associated attributes (please see our description of our level of accuracy for geo-location in Phase 1, Task 1, above)
- Environmental waste disposal documentation

Deliverables:

- **Final Reporting Documentation:** Final requirements necessary to process the available rebates and tariff changes with the City, as well as post-construction electronic GIS records for all newly-installed streetlights in the City, including all wattages, locations, and other associate attributes, and environmental disposal documentation.



Tanko Lighting's Winchester, MA project

Phase 4: System Maintenance Phase

For more than a decade, Tanko Lighting has been providing municipalities with repair services, custom design support, material procurement, logistics management, and preventative maintenance for streetlight systems nationwide. Led by an electrical engineer with a lifelong passion for streetlighting, our knowledge of streetlight system technical issues and ability to troubleshoot field conditions is unsurpassed.

Our team is significantly qualified and is currently on multi-year streetlight maintenance contracts with dozens of municipalities nationwide, including: Berlin, CT, Meriden, CT, Darien, CT, Vernon, CT, Chester, CT, Granby, CT, Montville, CT, Wolcott, CT, East Lyme, CT, Mansfield, CT, Old Lyme, CT, Farmington, CT, Groton, CT, Warren, MA, Simi Valley, CA, Chino Hills, CA, Santa Clarita, CA, and Rancho Cucamonga, CA.



Tanko Lighting's project in Ayer, MA

We will leverage this experience to provide the City with the following maintenance services for Phase 4:

Task 1: Pre-Conversion Maintenance Services

Given that it is not in the City's best interest to invest significantly in the maintenance of the system prior to the LED conversion, the Pre-LED Conversion Maintenance Services period, prior to the completion of the LED conversion, will merely serve as a stop-gap for the minimal number of repairs necessary until the LED conversion is complete. As such, Tanko Lighting will perform the following activities for this phase based on the pricing provided in our Completed Bid Form:

Coordinate Repair Requests

Tanko Lighting will coordinate repair requests through the following mechanisms:

- **Online Repair Requests:** Tanko Lighting will provide the City with a link to a website that will allow a user to interface with an online form. The form will require the user to submit information about the location and observed issue(s). Our team will review any online form submissions each working day. If an emergency is reported, we will immediately dispatch an installer to respond to the location within twenty-four (24) hours of the received report (please note that the actual remedy may require a longer duration to complete and that response times only include the time to first arrive on scene, address any immediate obstructions/hazards, identify issues and develop either a temporary or permanent remediation). For any non-emergency issues reported, we will compile the daily submissions and submit a Weekly Report to the City for review. The Weekly Report will be a live, online shared spreadsheet. City staff will need to provide direction to our team on any locations for which it approves routine maintenance via a response to the Weekly Report. For any location in which the City approves routine maintenance, Tanko Lighting will dispatch an installer to respond to the location within seven (7) working days.
- **Call Center Repair Requests:** Tanko Lighting will provide the City with a toll-free phone number by which callers can reach a live operator at a Call Center twenty-four hours per day, seven days per week. Call Center staff will have access to the Online Repair Form and will guide each caller through the questions and submit the responses via the Online Form to Tanko Lighting. Our team will review any online form submissions each working day. If an emergency is reported, we will dispatch an installer to respond to the location within twenty-four (24) hours of the received report (please note that the actual remedy may require a longer duration to complete and that response times only include the time to first arrive on scene, address any immediate obstructions/hazards, identify issues and develop either a temporary or permanent remediation). For any non-emergency issues reported, we will compile the daily submissions and submit a Weekly Report to the City for review. The Weekly Report will be a live, online shared spreadsheet. City staff will need to provide direction to our team on any locations for which it approves routine maintenance via a response to the Weekly Report. For any location in which the City approves routine maintenance, Tanko Lighting will dispatch an installer to respond to the location within seven (7) working days.

Remedy of Routine Repair Requests

The following characteristics will define a Routine Repair:



- Replacement of a failed photocell
- Replacement of a failed lamp (Note that any failed High Pressure Sodium lamps will be replaced with a temporary stop-gap LED/HPS fixture – note that the manufacturer and wattage will be dependent upon material availability – until the location is converted to its permanent LED fixture. When possible, Tanko Lighting will attempt to utilize the same LED fixture as per the design of the LED conversion, to mitigate the need to return to the location.)



Tanko Lighting's project in Independence, OH

Upon receipt of the City's approval of a routine repair request, Tanko Lighting will:

- Dispatch the installer to respond to the location within seven (7) working days of receipt of the City's approved request and remedy the fixture issue with the appropriate parts and materials
- Ensure that any time a fixture is serviced, it is cleaned as necessary, broken lenses and covers replaced, and the entire fixture assembly left in a clean, fully serviceable condition
- Ensure that all waste materials generated from the maintenance services are properly disposed of in accordance with all applicable laws and regulations
- Provide a record of the location, date of the visit, identified issue, remedy, date of remedy completion, and any additional notes

It should be noted that when required to perform service, the making and breaking of the electrical connection to the electrical distribution network (whether for routine or emergency service) must be performed by the utility. The subcontractor will be responsible for providing notes to our team, which will send the work request to the utility. If Tanko Lighting's subcontractor is unable to complete a repair as the result of action or inaction by the utility, our team will so note on its monthly report and include the date and time of all verbal and written communication with the utility.

Remedy of Emergency Repair Requests

The following characteristics will define an Emergency Repair:

- Establishment of a safe and secure scene in the event of a pole knockdown or any electrical or other potential hazard resulting from the streetlighting equipment

Upon receipt of an emergency repair request, Tanko Lighting will:

- Dispatch installer to respond to the location within twenty-four (24) hours of receipt of the request (please note that the actual remedy may require a longer duration to complete and that response times only include the time to first arrive on scene, address any immediate obstructions/hazards, identify issues and develop either a temporary or permanent remediation)
- Ensure that the subcontractor de-energizes streetlight fixtures that have been knocked down or conductors that have been severed; makes repairs or alterations to streetlight structural components to protect the immediate safety of the public
- If possible, ensure the subcontractor remedies the fixture issue with the appropriate parts and materials
- Ensure that anytime a fixture is serviced, it is cleaned as necessary, broken lenses and covers replaced, and the entire fixture assembly left in a clean, fully serviceable condition
- Ensure that all waste materials generated from the maintenance services are properly disposed of in accordance with all applicable laws and regulations
- Provide a record of the location, date of the visit, identified issue, remedy, date of remedy completion, and any additional notes
- In the event of a knockdown of a pole, Tanko Lighting will ensure that its subcontractor coordinates with the utility regarding disconnection of power, removes and disposes of the pole and lighting fixture, retaining any salvageable components, and ensures

the site is secured in a safe manner. Tanko Lighting will ensure that its subcontractor coordinates with the utility regarding the emergency cleanup and, in particular, the retrieval of City-owned lighting components

- Once any hazardous conditions are remedied, if additional work is needed to properly restore function to the fixture, within seven (7) working days following the date of emergency response, we will supply to the City a detailed written quotation of the cost and time required to restore the affected light fixture to fully operable condition, including re-installation of the pole where applicable. Tanko Lighting shall commence such repairs following approval and notification to proceed from the City.



Tanko Lighting's project in Kearney, NE

It should be noted that when required to perform service, the making and breaking of the electrical connection to the electrical distribution network (whether for routine or emergency service) may be needed to be performed by the utility. The subcontractor will be responsible for providing notes to our team, which will send the work request to the utility. If Tanko Lighting's subcontractor is unable to complete a repair as the result of action or inaction by the utility, we will so note on its monthly report and include the date and time of all verbal and written communication with the utility.

Traffic Control

Tanko Lighting will ensure that the following traffic control activities are properly coordinated by the subcontractor:

- Conduct operations to cause the least possible obstruction and inconvenience to public traffic. To the extent possible, all traffic will be permitted to pass through the work area. The subcontractor will furnish, erect, and maintain sufficient warning and directional signs, barricades and lights and furnish adequate warning to the public at all times of any dangerous condition to be encountered. The subcontractor's vehicles and equipment will be equipped with suitable warning lights and reflective markings for working in daylight and dark.
- If police details are required, the subcontractor will notify Tanko Lighting and our team will coordinate with the City to obtain approval and schedule the details. Tanko Lighting will work closely with the City at the start of the maintenance services contract to confirm police detail requirements and to ensure that they are minimized while properly maintaining safe traffic control. The cost of the police details will be the responsibility of the City.

Task 2: Post-Conversion Maintenance Services

Once the City accepts the final completion of the LED conversion, Tanko Lighting will commence this task, which will include the following services that will be charged to the City based on the pricing that is included in our Completed Bid Form.

Coordinate Repair Requests

Coordination of repair requests will be handled the same way as in the Pre-LED Conversion phase, with the exception that the City will not need to pre-approve any routine maintenance reports, as Tanko Lighting will respond to all reports per the response times as outlined in the Pre-LED Conversion phase above.

Remedy of Routine Repair Requests

Routine repair will be defined in the same way as in the Pre-LED Conversion phase and routine repair requests will be handled per the same protocols and response times as outlined in the Pre-LED Conversion phase above.

Remedy of Emergency Repair Requests

Emergency Repair will be defined in the same way as in the Pre-LED Conversion phase and emergency repair requests will be handled per the same protocols and response times as outlined in the Pre-LED Conversion phase above.

Remedy of Warranty Repairs

Tanko Lighting will serve as the First Responder and, if the repair issue is identified because of a warranty issue (related to the LED conversion, such as a fixture or photocell failure and issues related to the installation, such as incorrect mounting or wiring of fixture), Tanko Lighting will work with the manufacturer and installer to remedy the warranty issue. If a dispatch results in a location experiencing a warranty-related issue, and the remedy can be applied during the initial visit, the initial visit will be at no charge to the City. Any/all other issues will be handled the same way as in the Pre-LED Conversion phase and the City will be charged on a time-and-materials basis for the dispatch services to the field.

Traffic Control

Traffic control will be handled in the same way as outlined in the Pre-LED Conversion Phase above.



Tanko Lighting's project in Ogdensburg, NY

Additional Work

For any special and additional work not covered above by routine or emergency maintenance of fixture (including but not limited to arm transfer service on utility poles, pole knockdown replacements, foundation replacements, starting aids, wire inside pole, access hole covers, underground/overhead conductors and cables, tree trimming, loose anchor bolts, pole/fixture painting, fuse replacements, feed wire replacements, leaning poles, repair/replacements of streetlight equipment due to storm damage, police detail), Tanko Lighting will provide a detailed written quotation of the cost and time required to restore the affected light fixture to fully operable condition, including re-installation of the pole where applicable. Tanko Lighting shall commence such repairs following approval and notification to proceed from the City.

Materials Management

Tanko Lighting will purchase and maintain a fixture inventory of sufficient quantity to be able to perform the routine service work described herein. Tanko Lighting warrants that products furnished conform to the requirements specified, are of good merchantable quality and suitable for the purpose intended.

Tanko Lighting will access and store (if requested) the City-purchased inventory of spare fixtures to facilitate expedient fixture replacement in case of failure. Tanko Lighting will monitor spare fixture inventory and recommend that the City consider purchasing additional fixture stock as needed to maintain a sufficient fixture inventory.

Administrative Support

If requested by the City, Tanko Lighting will provide a detailed written quotation of the cost and time required to provide supporting documentation to assist the City with its pursuit of third parties for any insurance claims.

Reporting

Tanko Lighting will utilize the same live, online and shared spreadsheet Weekly Report that tracks repair requests to include updates of the locations visited and remedies completed. The Weekly Report will be updated daily as feedback is received and will provide a record of the location, date of the visit, identified issue, remedy, date of remedy completion, and any additional notes. The advantage of the online Weekly Report format is that it serves as virtually a real-time snapshot of the activities in progress and will be available for the City to access at any time.

Preliminary Schedule

The City indicated in Section 9. Timeline of its amended RFP that the project's Estimated Completion Date would be July 1, 2021. We can certainly comply with this for both the LED conversion phases and the initial maintenance phase. We will leave it to the City to determine any long-term maintenance services needs and will comply with those as well.

Please find below our preliminary estimated schedule. We will work with the City to determine any additional elements/needs and will provide a final schedule during the project planning phase.

Preliminary Project Schedule:		Month					
Task	Estimated Completion Date	1	2	3	4	5	6
GIS Audit	NTP + 3 - 4 weeks (includes time to gather existing City records)	Yellow					
Data Reconciliation	3 -6 weeks after Audit completion	Blue	Blue				
Design	Initial Cobra Head Design Submission = 4-6 weeks after Data Reconciliation completion;			Yellow			
Financing Assistance	2 weeks after completion of Data Reconciliation				Blue		
Feasibility Analysis	Final Scope of Work & Final Design Submission = 1 week after City feedback				Yellow		
	Concurrent with Final Design Submission				Blue		
Community Outreach	2 – 4 weeks prior to Installation				Blue		
Materials Procurement	Submittals to City = 1 week after City approval of Design;				Yellow		
	Ordering = 1 week after City submittal approval;				Blue		
	Shipment of Fixtures = 4 – 6 weeks from order placement, depending on type of fixture & manufacturer.				Blue		
Logistics Management	2 weeks prior to Installation				Yellow		
Installation	Commencement = 1 week from material receipt;					Blue	
	Substantial Completion = 3 weeks from commencement					Blue	
Commissioning & Final Punch List	3 weeks following Substantial Completion						Yellow
Rebate/Rate Change & Final Reporting	4 weeks following Substantial Completion						Blue
Maintenance Services	Ongoing	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Conclusion

Given our comprehensive and proven project approach, as well as our team’s extensive involvement with municipal streetlight LED design and conversion projects nationwide, our team will leverage its expertise to provide the necessary context and value to assist the City with all the support, recommendations and coordination necessary to ensure the success of this project. Please let us know should you have any questions. We look forward to your feedback.

Regards,



Jason Tanko
Chief Executive Officer

2. RELEVANT PROJECTS

A maximum of 5 descriptions of relevant and similar projects completed.

Please find below five (5) of our completed relevant and similar projects. Please find a complete list of our projects nationwide in Appendix A.

- Brewer, ME:** Tanko Lighting provided the City of Brewer with a turn-key LED streetlight conversion for the City's approximate 900 streetlight fixtures. Our team's involvement included a comprehensive GIS audit, acquisition support, data reconciliation, design, materials procurement, installation coordination, commissioning, rebate/rate change submissions with CMP, and project management support.
Reference: Frank Higgins, City Engineer; 221 Green Point Road, Brewer, ME 04412; 207-989-7800; fhiggins@brewermaine.gov
- Burlington, MA:** Tanko Lighting provided the Town of Burlington with a turn-key LED streetlight conversion for the Town's approximate 2,500 streetlight fixtures. Our team's involvement included a comprehensive GIS audit, data reconciliation, design, materials procurement, community notification, installation coordination, rebate/rate change coordination, and project management support.
Reference: Timothy Mazzone, Senior Engineer; 25 Center Street, Burlington, MA 01803; 781-270-1640; tmazzone@burlington.org
- Warren, MA:** Tanko Lighting provided the Town of Warren with turn-key support to implement its LED streetlight conversion project of 437 lights. Our team provided GIS auditing, data reconciliation, design, cost/savings estimates, financial feasibility analysis, project management support, product procurement support, installation coordination, rebate/rate change support, and administrative services.
Reference: Dario Nardi, Chairman/Board Selectmen; 48 High Street, Warren, MA, 01083; 413-231-2888; nardi@warren-ma.gov
- East Lyme, CT:** Tanko Lighting implemented an LED streetlight conversion for the Town of East Lyme, CT, which included project management support, acquisition assistance, engineering services, cost-benefit analysis of various technologies, GIS field auditing and commissioning, product procurement, environmental disposal/recycling, data reconciliation, installation management, rebate/rate change support, administrative services, and ongoing maintenance services.
Reference: Joe Bragaw, Director of Public Works; 860-691-4118; JBragaw@eltnhall.com
- West Hartford, CT:** Tanko Lighting provided the City of West Hartford with turn-key support to implement its comprehensive streetlight conversion project of more than 6,500 fixtures. Tanko Lighting provided project management support, GIS auditing and commissioning, data reconciliation, acquisition support, design, rebate/rate change support, and administrative services.
Reference: Catherine Diviney, Energy Specialist, 860-561-7581; Catherine.Diviney@westhartfordct.gov



Tanko Lighting's project in Burlington, MA

3. REFERENCES

A minimum of three current references including contact information for the completed projects cited above.

Please find our references' contact information listed in Section 2: Relevant Projects, above.

4. EXPERIENCE WITH FINANCING

A description of the contractor's experience and ability to facilitate tax-exempt municipal leasing OR performance contracting with energy savings stipulated as would pertain to this project. There is no obligation that a proposal include both financing options.

Tanko Lighting has extensive experience with identifying and coordinating both cost-effective financing, as well as incentives and utility rebates for its clients. For those clients interested in private financing, we work with a variety of third-party private financing entities (including local banks) to explain the project and coordinate secure financing options for our clients. We also provide required reporting for financed projects, including final financial analyses based on the installed products. Further, we have the ability to provide a performance contract and guaranteed savings for this project. However, we do not recommend this contract structure – please see Task 5: Financing Options in the Services section of our Cover Letter for more information.

5. COMPLETED BID FORM

Completed bid form with luminaire and equipment specifications, warranties, and testing reports attached. Bids must be submitted on the actual form furnished herewith. All blank spaces for prices must be filled in, in ink or word processor. The bid form is intended to be inclusive of all cost to complete all work associated with the project as herein described, whether specifically stated or not.

Please find our Completed Proposal Form in Appendix B. Please note the following about our pricing:

- Tanko Lighting is recommending three different manufacturers' products for the cobra-head fixtures – GE's ERLH LED fixture, Philips' RFS LED fixture, and Eaton's Nano fixture. All these fixtures have ten-year warranties, and are reputable and proven, as each have decades of experience. We will work with the City to evaluate the three submitted brands and develop a final recommendation based on the estimated 20-year savings. Please note that the fixture pricing is based on an average cost per fixture and may vary slightly based on wattage/distribution type.
- Our Cost Proposal includes the cost of the photocell for every line item in Section 5 Luminaires and Equipment. We are recommending a long-life (and extended warranty) product from Tork.
- Our current Cost Proposal includes a Cbright screw-in option for the decorative fixture replacements. This is the most cost-effective option for the City and we have seen much success with this product. However, we can provide additional options for the decorative fixtures upon gaining a better understanding of the City's preferences and upon completion of the audit.
- We have not included the costs for implementation of any Smart City technologies, but can provide them upon request from the City after further understanding of the City's preferences.
- The City noted in Round One of its Questions and Answers that it is not interested in numbering the poles and we have thus not included this in our proposed pricing. However, this is an important way of identifying locations in the field, particularly when the City or residents are reporting outages (as neither will have access to the geo-locations when in the field). We thus highly recommend that the City consider including a pole ID numbering system in the scope of work for this project. We have extensive experience with developing pole ID numbering systems (as we do this work for almost all of our projects), as well as specifying tag characteristics, material and location on the pole. We can provide the City a scope of work and pricing upon request but recommend that this task be integrated into Phase 1, Task 4: Design so that it is carefully integrated into the replacement plan for the project. We will also integrate the procurement of materials into Phase 2, Task 1: Fixture Selection/Procurement and the installation of the pole ID numbering system into Phase 2, Task 4: Installation should the City add the pole ID numbering system to the scope of work for the project.
- Our maintenance pricing is based on a \$2/fixture/month price that includes all administrative services (call center, website for outage reports, dispatch, tracking and reporting services), as well as in-field labor and materials for all routine maintenance services. Please note that after Year 2, the annual cost of maintenance increases by 5% each year.
- Our pricing for damage and emergency maintenance is an hourly rate for the additional labor related to emergency maintenance only. Materials for remedying emergency services are not included in the hourly rate provided.
- Sales tax is excluded from all provided pricing.



Tanko Lighting's LED Conversion in Berlin, CT

Value-Added Options

There are a variety of options for value-added services that Tanko Lighting can offer the City with this project. However, it should be noted that Tanko Lighting highly recommends proceeding with the LED streetlight conversion as a priority, to expedite the savings and then shift to other potential value-added services such as:

- **Traffic Control:** There are several different manufactures that offer expanded capabilities other than traditional streetlight control measures. One such expanded use is traffic control. Tanko Lighting has narrowed down the three traffic control related issues most commonly mentioned by our clients – parking congestion, emergency responses, and monitoring traffic flow and violations.
 - **Parking Congestion:** The industry standard is to install motion sensors into parking lot lights. With the use of motion sensors, the parking lights can display a “green light” to show distant drivers that spaces are available as well as a “red light” notifying drivers that no spaces are available. This type of technology is most beneficial for large crowded outdoor parking lots.
 - **Emergency Response:** Some manufacturers offer an “Intelligent Cities” upgrade, which can significantly increase applicable uses for the streetlight controls. One such feature currently used to help emergency responses is the use of flashing emergency signal lights. This features utilizes a red flashing light on the bottom of a streetlight and is used by paramedics and police officers to move past traffic with ease. This would allow advanced notification to drivers that emergency vehicles are inbound and allow for a much faster response time. Another common use of the red flashing lights is to notify citizens of an amber alert or natural disaster. The ability to turn on emergency lights is one of the most efficient ways to communicate to citizen of a potential danger.
 - **Traffic Flow/Traffic Monitoring:** This is typically accomplished using security cameras and a designated safety coordinator to manage the incoming data. The benefits of security cameras include assisting in police investigations, automatic ticketing systems, or even use software to trace where a certain incident occurred at a certain time of day. The City could decide to pay for software packages for these tools to be self-monitored.



Tanko Lighting's New London, CT project

Tanko Lighting has many industry partnerships that it can leverage to provide these products, should the City be interested.

- **Wi-Fi:** Many cities have approached Tanko Lighting with interest in a city-wide Wi-Fi system to provide free streaming internet access for residents. Public Wi-Fi is a growing trend, but is currently utilized on only select streets or portions of a city. Some of the concerns related to such a system include bandwidth, requirement of direct fiber and cost to the municipality. Successful projects have involved private companies which pay the upfront cost while returning revenue to the municipality via advertisement to users. Tanko Lighting is familiar with the options and will assist with providing a quote for such a system at the request of the City.
- **Car Charging Stations:** Over the last few years, there has been a large increase in demand for electric vehicles and public charging stations. Many municipalities that explore this technology are hesitant in regard to cost. We have several partnerships in this sphere and will work in the best interest of the City to explore installing these car charging stations while trying to achieve the lowest possible pay-back period. We believe that the best practice is to lease municipal-owned land to a company to provide the services while receiving revenue by having designated companies advertise and pay for use of the land.
- **Small Cell Phone Tower Installations:** The streetlighting industry is plagued with several past failed attempts to install telecommunications devices onto municipally-owned streetlight infrastructure, such that today many cities will not even consider the concept of obtaining revenues from wireless cellular leases. However, the telecommunications industry is quickly evolving to the point that technological advancements have minimized infrastructure needs, while customer demand has increased the industry's capacity requirements. It is thus wise for the City to consider wireless cellular leases on its streetlight infrastructure, as the opportunities are plentiful. Yet, to shield the City from some of the previous pitfalls, Tanko Lighting will partner with a

national firm to provide turn-key services that will reduce burden on Town staff and streamline the City's ability to comprehensively approach the industry for the most advantageous revenue streams.

Our partner is an innovative project management company specializing in the wireless telecommunications industry. It has strong relationships with all the major wireless and telecommunications companies and has coordinated projects for wireless carriers and tower companies to build new wireless facilities, audit and modify existing facilities per each network's objective, and execute colocation projects. This partner's services include providing lease negotiations for the property owner and carrier, adding additional carriers to existing facilities, auditing existing facilities, designing and engineering the facility, and permitting each facility through each jurisdiction. This partner also has extensive expertise with municipal streetlight applications, and works with municipal and utility entities to negotiate leases on streetlights in the public right-of-way, lattice towers, and power poles.

While this strategy would be beneficial to the City, it would likely take time to cultivate. Thus, we recommend that the City proceed with the LED conversion first and then consider the wireless revenue strategy as a secondary effort – and possibly integrate it at a later phase.

Once we obtain a better understanding of the City's needs and preferences, we can also coordinate sample installations of products as part of our product recommendations process, should the City be interested.

6. APPENDICES

- Appendix A – Projects List
- Appendix B – Completed Proposal Form
- Appendix C – Subcontractor's Electrical Licenses

APPENDIX A

Tanko Lighting in Massachusetts		
Municipality	Number of Fixtures	Scope of Work
Town of Palmer, MA	902	Audit, Design, LED Conversion, Including Controls
City of Leominster, MA	3,637	Audit, Design, LED Conversion, Including Controls
Town of Andover, MA	1,564	Audit, Design, LED Conversion
City of Watertown, MA	783	Audit, Design, LED Conversion
Town of Warren, MA	437	Audit, Design, LED Conversion
City of Everett, MA	2,965	Audit, Design, LED Conversion
City of Lowell, MA	7,000	Audit, LED Conversion Contract
Town of Winchester, MA	1,571	Audit, LED Conversion Contract
Town of Sharon, MA	1,600	Audit, LED Conversion Contract
Town of Hopkinton, MA	563	Audit, LED Conversion Contract
Town of Wayland, MA	714	Audit, Design, LED Conversion
Town of Millis, MA	436	Audit, LED Conversion Contract
City of Malden, MA	3,694	Audit, LED Conversion Contract
Westfield Electric MUNI Utility, MA	4,000	Design and Photometrics
City of Somerville, MA	4,842	Design/PM of Install
Town of Sudbury, MA	591	Audit and Design, LED Conversion Contract
City of Burlington, MA	2,400	Audit, Design, LED Conversion
Town of Winchendon, MA	564	Audit, LED Conversion Contract
City of Boston, MA	4,000	Audit/Data Reconciliation of Decorative Fixtures
Town of Ayer, MA	520	Audit, Design, LED Conversion & Controls
City of Medford, MA	4,618	Audit, Design, LED Conversion
Town of Ware, MA	823	Audit, Design, LED Conversion, Maintenance
City of Gardner, MA	1,532	Audit, Design, LED Conversion
Town of Clinton, MA	923	Audit, Design, LED Conversion
Town of Hanover, MA	505	Audit, Design, LED Conversion
Town of Webster, MA	1,485	Audit, Design, LED Conversion
Town of Weymouth, MA	3,720	Audit, Design, LED Conversion & Controls
Town of Erving, MA	163	Audit, Design, LED Conversion
Town of North Andover, MA	1,302	Audit, Design, LED Conversion
Town of Dalton, MA	740	Audit, Design, LED Conversion
Town of Franklin, MA	1,648	Audit, Design, LED Conversion
Town of Dracut, MA	1,555	Audit, Design, LED Conversion
Town of Northbridge, MA	1,181	Audit, Design, LED Conversion
Town of Westport, MA	205	Audit, Design, LED Conversion
Town of Manchester-by-the-Sea, MA	363	Audit, Design, LED Conversion
Town of Dudley, MA	600	Audit, Design, LED Conversion
City of Marion, MA	350	Audit, Design, LED Conversion
Town of Lexington, MA	2,700	Audit, Design, LED Conversion
Town of Newbury, MA	500	Audit, Design, LED Conversion
Town of Oxford, MA	945	Audit, Design, LED Conversion
Town of Bridgewater, MA	1,286	Audit, Design, LED Conversion
Town of Billerica, MA	2,600	Audit, Design, LED Conversion
Town of Spencer, MA	885	Audit, Design, LED Conversion
Town of Saugus, MA	2,850	Audit, Design, LED Conversion
Town of Longmeadow, MA	1,500	Audit, Design, LED Conversion
Total Project Fixtures:	77,762	Contract Total: 44

Tanko Lighting in New Hampshire		
Municipality	Number of	Scope of Work
Town of Goffstown, NH	460	Full Turn-Key LED Conversion
Town of North Stafford, NH	49	Full Turn-Key LED Conversion
Town of Londondery, NH	143	Full Turn-Key LED Conversion
Town of Jaffrey, NH	151	Full Turn-Key LED Conversion
Total Project Fixtures:	803	Contract Total: 4



Tanko Lighting in Connecticut		
Municipality	Number of Fixtures	Scope of Work
Borough of Jewett City, CT	220	LED Conversion
Town of Berlin, CT	2,537	Audit, Acquisition, LED Conversion, Maintenance Contracts
City of New London, CT	2,516	Audit, LED Conversion
Town of Vernon, CT	1,669	Audit, Acquisition, LED Conversion, Maintenance Contracts
Town of West Hartford, CT	6,500	Full Turn-Key LED Conversion
Town of Rocky Hill, CT	1,683	Audit, Acquisition Contract
Town of Wolcott, CT	728	Audit, Acquisition, LED Conversion, Maintenance Contracts
Town of Groton, CT	1,550	Audit, Acquisition, LED Conversion, Maintenance Contracts
City of Meriden, CT	4,799	Audit, Acquisition, LED Conversion, Maintenance Contracts
Town of Darien, CT	843	Audit, Acquisition, LED Conversion, Maintenance Contracts
Town of Glastonbury, CT	1,000	Audit, Acquisition, LED Conversion Contract
Town of East Lyme, CT	1,498	Audit, Acquisition, LED Conversion, Maintenance Contracts
Town of Montville, CT	1,777	Full Turn-Key LED Conversion & Maintenance
Town of Granby, CT	157	Full Turn-Key LED Conversion
City of Groton / Groton Utilities, CT	2,256	Audit, Acquisition, LED Conversion Contract
Town of Old Lyme, CT	396	Pilot Audit, Pilot LED Conversion Contract
Town of Putnam (Spc District), CT	858	Full Turn-Key LED Conversion
Town of Mansfield, CT	800	Audit, Acquisition, LED Conversion Contract
Town of Bristol, CT	5,500	Full Turn-Key LED Conversion
Town of Farmington, CT	1,728	Audit, Acquisition, LED Conversion Contract
Town of Sterling, CT	75	Full Turn-Key LED Conversion
Town of Chester, CT	313	Full Turn-Key LED Conversion
Town of Ledyard, CT	292	Full Turn-Key LED Conversion
City of Norwich, CT	5,049	Full Turn-Key LED Conversion
Town of Gales Ferry, CT	87	Full Turn-Key LED Conversion
Town of Stonington, CT	1,700	Acquisition Support, Full Turn-Key LED Conversion
City of Waterbury, CT	7,250	Audit, Data Reconciliation, Design, Rebate/Rate Changes
Town of Middlefield, CT	351	Audit, Data Reconciliation, Design
City of Waterford, CT	1,976	Full Turn-Key LED Conversion
Town of Suffield, CT	680	Full Turn-Key LED Conversion
City of Middletown, CT	5,080	Full Turn-Key LED Conversion
Total Project Fixtures:	61,868	Contract Total: 31

Tanko Lighting in New York		
Municipality	Number of Fixtures	Scope of Work
City of Buffalo, NY	33,000	LED Conversion/Acquisition Feasibility Analysis
City Ogdensburg, NY	933	Full Turn-Key LED Conversion
City of Geneva, NY	1,696	Full Turn-Key LED Conversion
City of Gloversville, NY	1,243	Feasibility Analysis, Acquisition Support
City of East Rochester, NY	700	Feasibility Analysis
Total Project Fixtures:	37,572	Contract Total: 5

Tanko Lighting in Nebraska		
Municipality	Number of Fixtures	Scope of Work
Village of Howells, NE	200	Audit, Data Reconciliation, Design
City of Aurora, NE	200	Audit, Data Reconciliation, Design
City of Kearney, NE	3,306	Audit, Data Reconciliation, Design, Installation Management
Total Project Fixtures:	3,706	Contract Total: 3



Tanko Lighting in California		
Municipality	Number of Fixtures	Scope of Work
City of Santa Clarita, CA	16,200	Pole Inspection, Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Rancho Cucamonga, CA	15,000	Streetlight Pilot
		Acquisition Support, Material Procurement (Fixtures & Controls), Installation, Rebate/Rate Change & Ongoing Maintenance
City of Chino Hills, CA	4,450	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, Commissioning, and Maintenance Services
City of Santa Ana, CA	11,500	Audit, Design, Data Reconciliation, Acquisition Support
City of Simi Valley, CA	8,000	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Acquisition Support, Procurement, Install, Commissioning and Maintenance
City of Fullerton, CA	6,600	Audit, Data Reconciliation, Photometric Design, and Feasibility Analysis
		Material Procurement, Installation, Rebate/Rate Change & Ongoing Maintenance
City of Orange, CA	4,400	Feasibility Analysis
City of Tustin, CA	3,500	Audit, Data Reconciliation, Feasibility Analysis, Acquisition Support, Procurement, Installation Management, Commissioning, Rebate/Rate Change
	500	Acquisition Support
City of West Hollywood, CA	2,500	Audit, Data Reconciliation, Feasibility Analysis, Pilot Installations
		Distribution Pole Acquisition Assistance
City of La Verne, CA	2,500	Audit, Data Reconciliation, Design, Feasibility Analysis and Acquisition Support
City of La Puente, CA	2,100	Audit, Data Reconciliation, Photometric Design, and Feasibility Analysis
		Acquisition Support, Material Procurement, Installation, Rebate/Rate Change & Ongoing Maintenance
City of Bell, CA	1,600	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, Commissioning, and Maintenance
City of Signal Hill, CA	1,300	Audit, Data Reconciliation, Design, Feasibility Analysis and Acquisition Support
City of Stanton, CA	1,300	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Acquisition Support, Procurement, Install, and Commissioning
City of Claremont, CA	1,300	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Acquisition Support, Procurement, Install, and Commissioning
City of Corona, CA	8,700	Material Procurement, Installation (Fixtures & Controls), and Rebate/Rate Change
City of Hayward, CA	7,700	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Vista, CA	2,300	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Napa, CA	4,500	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Rancho Cordova, CA	6,500	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Lodi, CA	7,200	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Berkeley, CA	8,000	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Morgan Hill, CA	2,500	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Modesto, CA	9,000	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Vallejo, CA	9,000	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install Management, and Commissioning
City of Santa Clara, CA	3,000	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Alameda, CA	3,200	Turnkey Conversion Services including Data Reconciliation, Procurement, Install, and Commissioning
City of Oakland, CA	37,000	Audit, Commissioning, Data Reconciliation
City of San Bruno, CA	2,000	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install Management, and Commissioning
City of Sonoma, CA	1,200	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install Management, and Commissioning
City of Oakland, CA	526	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Sunnyvale, CA	7,000	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement (Fixtures and Controls), Install, and Commissioning
City of Fresno, CA	360	LED Streetlight Material and Install
City of Berkeley, CA	3,200	Pole Inspection/Condition Assessment
Lawrence Berkeley National Laboratory	1,400	Audit, Data Reconciliation, Specifications Development, Controls Installation (30 fixtures)
City of Goleta, CA	1,575	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Acquisition Support, Procurement (Fixtures and Controls), Install, and Commissioning
City of Thousand Oaks, CA	7,900	Acquisition Support and Smart City Feasibility Analysis
City of Santa Fe Springs, CA	6,500	LED Pilot Installation, Financial and Feasibility Analysis
City of Pico Rivera, CA	4,500	Turnkey Conversion Services including Audit, Design, Acquisition Support, Data Reconciliation, Procurement, Install, and Commissioning
City of Glendora, CA	2,500	Acquisition Support
City of Ventura, CA	9,000	Acquisition Support
City of Poway, CA	3,600	Turnkey Conversion Services including Audit, Design, Data Reconciliation, Procurement, Install, and Commissioning
City of Coalinga, CA	1,000	Feasibility Analysis
Total Project Fixtures: 243,611		Contract Total: 47



Tanko Lighting in Tennessee		
Municipality	Number of Fixtures	Scope of Work
City of Dyersburg, TN	3,300	Audit, Data Reconciliation, Design (Subcontractor to Prime)
City of Paris, TN	2,541	Full Turn-Key (Subcontractor to Prime)
City of Rockwood, TN	808	Full Turn-Key (Subcontractor to Prime)
Total Project Fixtures:	6,649	Contract Total: 3

Tanko Lighting in Various Other States		
Municipality	Number of Fixtures	Scope of Work
City of Miami Lakes, FL	900	Full Turn-Key LED Conversion
Chelan County Public Utility District, WA	7,000	Audit, Data Reconciliation, Design
Kauai Island Utility Cooperative, HI	3,500	Full Turn-Key with Controls
City of Mesa, AZ	40,000	Development of Street Light Master Plan
City of Brewer, ME	600	Full Turn-Key LED Conversion
City of Orono, ME	240	Full Turn-Key LED Conversion
City of Independence, OH	1,000	Audit, Data Reconciliation, Design, Acquisition Support, Feasibility Analysis
City of O'Fallon, MO	4,500	Acquisition Support
City of Ballwin, MO	2,113	Acquisition Support
City of Carbondale, IL	1,800	Audit and Data Reconciliation
City of Athens, OH	1,100	Audit, Data Reconciliation, Design, and Feasibility Analysis
City of Keller, TX	3,200	Feasibility Analysis
City of Grapevine, TX	2,700	Feasibility Analysis
City of Missoula, MT	6,000	Feasibility Analysis
Total Project Fixtures:	74,653	Contract Total: 14

APPENDIX B

CITY OF SANFORD, MAINE

IMPROVEMENTS TO THE CITY STREETLIGHT SYSTEM

BID DATE: WEDNESDAY, NOVEMBER 6, 2019 @ 11:00 AM

PRE-BID: WEDNESDAY, OCTOBER 2, 2019 @ 11:00 AM

PROPOSAL FORM

TO: Ian Houseal, Director of Community
Development City of Sanford
City Hall, 919 Main Street
Sanford ME 04073

Having carefully examined the existing conditions affecting the work, we, the undersigned, hereby agree to provide financing options, labor, material, supplies, equipment, facilities, disposal, photometric analysis, digital reports, processing for all utility rebates and rate schedules, and maintain the streetlight system in strict accordance with, the Specifications dated **September 12, 2019** as prepared by the City of Sanford and that the undersigned will accept in full payment thereof of the following sums and schedules to wit:

1)	Audit / Project Design Phase (audit and project design per fixture installed)	\$ 15.00	/fixture
2)	Construction Phase (labor per fixture to install cobra head-type luminaire on utility poles including all associated equipment / fixture) <i>(excluding Police Department Traffic Detail where required.)</i>	\$ 140.00	/fixture
3)	Closeout Phase (closeout of the project per fixture installed)	\$ 10.00	/fixture

5)	Luminaires and Equipment:		
	Cobra-head style luminaires including associated equipment (propose up to six models including all associated equipment installed)		
	1.	GE ERLH	\$ 154.90 /fixture
	2.	PHILIPS RFS	\$ 150.32 /fixture
	3.	EATON- NANO	\$ 152.39 /fixture
	4.		\$ /fixture
	5.		\$ /fixture
	6.		\$ /fixture
	Decorative fixture retrofits <u>(OPTIONAL BID)</u> standard - 		
	(labor and materials per fixture for each type of retrofit fixture)		
	1.	Main St, Sanford CBRIGHT SCREW IN W/ SHIELD 	\$ 323.00 /fixture
	2.	Central Park, Sanford CBRIGHT SCREW IN W/ SHIELD 	\$ 323.00 /fixture
	3.	Main St, Springvale CBRIGHT SCREW IN W/ SHIELD 	\$ 323.00 /fixture
	4.		\$ /fixture
	Brackets necessary for new streetlight locations (propose up to three brackets including all associated equipment installed)		
	1.	Assuming a new 6ft Steel arm installation.	\$ 795.00 /bracket
	2.		\$ /bracket
	3.		\$ /bracket
	Miscellaneous material mark-up where not otherwise stated (percentage)		10 %

List all Sub-Contractors:
On Target Utility Services - will serve as our in-field subcontractor for LED fixture installations and ongoing maintenance. See proposal for more information.

The undersigned certifies that the prices above include the cost of all work to complete the project as herein described, whether specifically stated or not.

The undersigned estimates completion of the work by:	7/1/21 or before - see proposal
The undersigned acknowledges the receipt of addenda #:	Q&A Round One and Round Two

The undersigned further agrees that after notification by the City of the acceptance of his/her proposal, he/she will execute a contract with the City within thirty (30) days, Saturdays, Sundays and holidays excepted, and that he/she will commence the work within one hundred twenty (120) days after the execution of the contract unless otherwise specified in Supplemental Specifications or directed by the City in writing, and that he/she will prosecute the work to its completion.

The undersigned hereby further declares that the only person or parties interested in this proposal as principals are named below; that the proposal is made without any connection with any other person or party making any proposal for the same work; and that no person acting for or employed by the City of Sanford is directly or indirectly interested in this proposal or in any contract which may be made under it or in profits expected to arise therefrom, except as provided by the City Charter. The full names and addresses of all persons or parties interested in this proposal as principals are named below; (Give first and last names in full; and in case of a corporation, give names and addresses of President, Treasurer and Manager; and in case of a partnership, give names and addresses of members):

President = Jason Tanko; 220 Bayshore Blvd., San Francisco, CA 94124
Treasurer/Manager = Clare Bressani Tanko, 220 Bayshore Blvd., San Francisco, CA 94124

FIRM NAME	Tanko Streetlighting, Inc. ("Tanko Lighting")
INDIVIDUAL NAME	Jason Tanko
TITLE	Chief Executive Officer
LEGAL ADDRESS	220 Bayshore Boulevard, San Francisco, CA 94124
PLACE OF BUSINESS	220 Bayshore Boulevard, San Francisco, CA 94124
FIRM'S IRS ID #	26-2819585
DATE	11/6/19
TELEPHONE #	415-254-7579
FAX #	415-822-3626
E-MAIL ADDRESS	jason@tankolighting.com
SIGNATURE	

APPENDIX C

On Target (Subcontractor) Staff Electrical Licenses

Name	License number
Barry Richards	MS60017819
Eric Allaby	Jy40092268
Paul Dawe	Jy40092402
Logan Emery	Jy40092575
Keegan Cain	Hp20042623
Matt Oliver	Hp20042577
Cam Gaghan	Hp20042788