City of East Providence
Roberto L. DaSilva
Mayor

FOR IMMEDIATE RELEASE
May 7, 2021

CONTACT INFO. :
Office of the Mayor
Dir. of Communications/Project Management
Patricia Resende
(401) 529-3207
presende@eastprovidenceri.gov

City of East Providence announces RFP for streetlight conversion

EAST PROVIDENCE, RI – The City of East Providence has announced a request for proposal for the conversion, purchase, installation and maintenance of its streetlights.

There will be a mandatory virtual pre-bid meeting on Thursday, May 13, 2021 for interested parties. Vendors interested in participating in the pre-bid meeting must RSVP to Dawn Kenney, Procurement Specialist dkenney@eastprovidenceri.gov by Wednesday, May 12, 2021 at noon and provide your contact information (name, company, contact number). A meeting link will then be emailed to the interested party.

CITY OF EAST PROVIDENCE
WEBSITE ADVERTISEMENT
STREET LIGHT CONVERSION AND MAINTENANCE
REQUEST FOR PROPOSAL
EP20/21-16
BID OPENING FRIDAY, JUNE 18, 2021 AT 11:00 AM

The City of East Providence ("the City") is seeking Proposals from qualified contractors ("Contractor(s)" or "Vendor(s)") to provide turnkey projects to:

1) provide pre-LED conversion streetlight maintenance,

2) convert existing municipally-owned streetlights to LED

3) purchase and install streetlight controls, and

4) provide warranty and non-warranty maintenance services following the conversion.

Specifications may be downloaded from the City's website https://eastprovidenceri.gov/rfp FIVE (5) copies of a proposal shall be submitted in one (1) sealed envelope to East Providence City Hall, Controllers Office, Room 103, Attn: Dawn Kenney, Procurement Specialist, 145 Taunton Ave., East Providence, RI 02914 no later than **FRIDAY, JUNE 18, 2021 AT 11AM.** The bids will be publicly recorded. Bids received with a time of 11:01 AM or later will be rejected. The envelope needs to be marked **BID EP20/21-16.**

There will be a MANDATORY virtual pre-bid meeting on THURSDAY, MAY 13, 2021. Please RSVP to Dawn Kenney, Procurement Specialist dkenney@eastprovidenceri.gov by WEDNESDAY, MAY 12, 2021 at noon and provide your contact information (name, company, contact number). A meeting link will be emailed to you.

Any additional questions after the mandatory pre-bid meeting will only be accepted in writing and submitted to Erik Skadberg, City Engineer eskadberg@eastprovidenceri.gov or Daniel Borges, DPW Director dborges@eastprovidenceri.gov no later than **THURSDAY, MAY 20, 2021 AT 4PM**
The City of East Providence reserves the right to reject any or all bids/proposals and reserves the right to award the RFP to the bidder deemed to be in the best interest of the City.

Equal Opportunity/Affirmative Action Employer

Dawn Kenney, Procurement Specialist dkenney@eastprovidenceri.gov

CITY OF EAST PROVIDENCE
SCOPE OF WORK
STREET LIGHT CONVERSION AND MAINTENANCE
REQUEST FOR PROPOSAL
EP20/21-16
BID OPENING FRIDAY, JUNE 18, 2021 AT 11:00 AM

Table of Contents

1. General Scope of Work

Please note that the City reserves the right to make changes related to the wattages, control options, maintenance count, etc. based on requirements around how streetlights on state roads will need to be transferred to RIDOT.

The City of East Providence ("the City") is seeking Proposals from qualified contractors ("Contractor(s)" or "Vendor(s)") to provide turnkey projects to:

1) provide pre-LED conversion streetlight maintenance,

2) convert existing municipally-owned streetlights to LED

3) purchase and install streetlight controls, and

4) provide warranty and non-warranty maintenance services following the conversion.

LED conversion project elements include developing a lighting design (including the recommendation of equipment options for the LED conversion and equipment options for controls), installing lighting samples in the City for review and approval (pilot program), removing and disposing of the existing luminaires and/or ancillary fixtures, installing City-approved LED luminaires, installing in-line fuse disconnects, installing streetlight controls, labeling streetlight poles, as appropriate, retrofitting and/or replacing post top fixtures as required, installing or repairing posts and poles as required, providing an updated streetlight inventory, supplying GPS fixture location and inventory data to the City, and applying for available rebates and incentives. Conversion also includes routine maintenance during the first year where labor and materials are fully warrantied.

Note that the City is "brand neutral" and has not identified a particular LED fixture product or streetlight control option as being the product of choice. The Vendor is expected to provide information to support their selection in sufficient detail so that the City may make informed choices accordingly. On the Bid Form, Vendors may propose two options. Vendor's preferred option is to be expressed as Option # 1. See the Bid Form for additional information.

The costs associated with hosting and maintaining controls network(s) are to be included in the Bid. For each controls option, please provide the annual base cost per unit. See price proposal form for more details. The City retains the option to optimize product selection(s) with the selected contractor(s) or other service providers for these services.

The value of any incentives or rebates from National Grid and the Rhode Island Office of Energy Resources (OER) for the LED conversion may remain with the City or with the awarded vendor to reduce first cost, to be determined by the City. As such, all pricing must reflect the full price of the project. Labor cost is to be included in the per unit pricing. The selected Contractor will be responsible for completing the necessary applications and supporting documentation to capture any incentives, rebates, etc., applying to National Grid and/or OER accordingly, and following up as needed until incentives are received.

The Bidder shall prepare an estimate of the energy and demand (kWh and KW) savings. The Bidder shall calculate energy and demand savings and incentives based on the National Grid tariff, comparing rated wattage of the existing fixture and the rated wattage of the proposed fixture, running on a dusk to dawn schedule (4175 running hours annually). Expectations for dimmed operations should not be included.

Note: Since the City has not made final decisions about dimming schedules, this methodology will allow for simple review and a level field for evaluating bids. The City recognizes that actual costs and savings will be impacted by the RI S05 Tariff, controls selection, adopted dimming schedules and other factors some of which will be decided after contract award.

Maintenance services will include all services necessary to keep the streetlights in good and proper working condition including warranty work, routine repairs, emergency repairs, reporting, and coordination activities and call center operations. Similar maintenance on decorative lights as well as other incidentals are also included as part of this RFP – see the Price Proposal Forms for additional information.

The City may select the same Contractor or different Contractors, for the various Bid Items within this RFP based on the evaluation processes and in accordance with their best interests as described herein.

Prospective firms must provide a complete response addressing all the requirements of this RFP.

1. Detailed Scope of Work

All of the requirements herein (as applicable) shall apply to the following specific Scope of Work (Bid) Items. State of RI prevailing wage rates will apply to all labor activities associated with each Bid Item. Bid pricing for materials shall not include sales tax.

Item 1: **Pre-LED conversion streetlight maintenance, including:**

a. **Unit per-pole pricing for routine maintenance as described herein;**
b. **Time and materials labor rates for routine maintenance and emergency maintenance as described herein;**

Item 2: LED conversion, including all fixtures, hardware, equipment, fused disconnects, confirming inventory, basic lighting design, pilot program, ensuring proper operations of each streetlight, incidentals necessary for a complete turnkey project, call center operations, and year 1 maintenance services. Each bidder must submit two equipment options as described herein. First year warranty and routine maintenance pricing is included within this Bid Item.

Item 3: Streetlight Controls – purchase, installation, commissioning, and training for the control system. Each bidder must submit two (2) control system options as described herein. The Bid shall include the initial (one-time) installation costs for the streetlight control software platform and separately, shall include on-going service fees such as internet-hosting costs or data plans.

Item 4: Post-LED conversion streetlight maintenance (years 2-5), including:

a. Monthly per-pole pricing for routine, non-warranty services;
b. Time and materials pricing for routine, non-warranty services;
c. Labor and material costs for emergency services.

Note: The first-year post-conversion maintenance costs, while labor and material warranties are in effect, are to be included within the conversion bid prices.

Item 5: GIS Lighting Survey - Audit the City's streetlight inventory, before streetlight conversion to create a clean dataset of the existing fixtures and conditions. Create a GIS interchange data set suitable for use with various online GIS systems such as Google Maps, ARC GIS, Map Info etc.

2.01 General and Technical Requirements

All data regarding the streetlights is based on data provided by National Grid; and is to be verified as part of this project. The City is not responsible for inaccuracies in the original National Grid inventory.

The basis for each bid shall be the inventories in the price proposals. The number of fixtures and associated wattages shown should be considered estimates only; the Price Proposal Forms are set up on a unit price basis, and the prices offered by each Contractor shall be used to adjust for any discrepancies that may be found between the National Grid and/or Municipal inventories and the actual conditions found in the field by the Contractor.

The Contractor(s) shall comply with applicable environmental laws and regulations regarding handling of hazardous substances and shall take appropriate measures to ensure the safe handling of such substances as Contractor(s) may encounter in the performance of the approved Contract(s).

The project will be "No Waste", i.e. all equipment will be removed and properly recycled in accordance with all applicable laws and regulations. All disposal costs shall be borne by the Contractor. The Contractor will provide copies of disposal lading documentation to the City and will keep copies on file as required by law.

2.02 Contractor Minimum Qualifications

Prospective firms submitting proposals shall submit at least 5 references of similar projects in the area of streetlight conversion, management and maintenance services. Anyone working above the communication space on utility poles or within electric distribution enclosures shall be electrically qualified as defined by OSHA 1910.269 (hereinafter "Qualified Electrical Worker"). *Customer personnel or Qualified Electrical Workers are never allowed to enter a Company manhole, hand hole, or other enclosed electrical equipment for any reason without the Company's safety supervision personnel being present on site and overseeing said work.*

By submitting a Proposal, the Contractor is certifying that all electricians who would perform work under the Agreement are Qualified Electrical Workers as described above. Contractor must abide by any and all requirements set forth in Appendix B - National Grid's Customer-Owned Streetlight Equipment Standards.

2.03 Purchase and Storage of Goods and Materials

The Contractor shall supply and install LED luminaires approved for the specific road classification and/or application. The Contractor shall also supply controls, luminaire arms (where necessary), in-line fused disconnects (see Appendices A and B), other fuses as required, daily report forms, wiring, and any other materials required to complete the work outlined herein.

The Contractor shall maintain an inventory or have readily available a supply/supplier of luminaires, network controls, or other parts that are routinely used for warranty and non-warranty repairs in order to perform these repairs in accordance with the maintenance response times defined herein. Storage of the parts inventory shall be the responsibility of the Contractor.

The City will provide (at no cost) a central staging area where LED luminaires and other materials may be delivered, stored, picked-up and prepared for installations. Contractors may also deposit the removed luminaires and materials into contractor-provided storage bins at the staging site. Additional staging areas may be provided by the City, based on the location of individual work areas throughout the duration of the project. The Contractor shall have reasonable access to the stored goods and materials. Details about the hours of access will be finalized after the Contractor is selected. Alternatively, the Contractor may provide staging areas at his\her own expense.

2.04 Responsibilities of the Contractor during LED Conversion – Scope of Work Bid Items 2, 3, and 5

The selected Contractor(s) shall provide all labor, equipment, materials, permits and incidental work necessary to completely remove and properly dispose of the existing luminaires and replace them with new LED luminaires with streetlight controls, if said controls are approved by the City. This work will be performed on streetlights listed in the attached streetlight inventories, which is to be verified and updated as part of the project (as noted herein). Additional streetlight and/or decorative fixtures may be added or removed after the acceptance of a final design plan only by an approved change order from the municipality, as noted in the Proposal Terms and Conditions.

Bids shall not include assumptions about lighting design. Decisions regarding appropriate light outputs and dimming criteria will be determined in coordination with the awarded Contractor.

Work will be scheduled on a block-by-block basis in geographic succession using maps provided by the Contractor that will depict the replacement schedule by area. Scheduling is subject to approval by the City's Project Manager, or designee. The Contractor will provide maps and database listings, utilizing the streetlight inventory, of the pole locations where the Contractor will be performing LED replacements.

The Contractor shall use handheld GPS devices to verify and\or update the streetlight coordinates and maps as needed (such as Trimble or other equivalent device as approved by the City) for the duration of the Contract. The Contractor will be responsible to create information sheets on each pole, fixture, and control with location data. This information shall be provided to the City for processing and incorporation into their mapping database. GIS mapping will be the responsibility of the City, unless the optional task 5 is awarded.

The Contractor shall complete project reports described herein and will meet all applicable federal, state, utility, and municipal rules, regulations, and requirements.

Pilot Program – the pilot program involves installing 8-10 sample light fixtures and control nodes (as applicable) at the site of the City's choosing, at no cost. The pilot serves to confirm and approve fixture wattages which should be closely considered depending on the controls strategy that is chosen. For example, if simple photocells are to be used, the specified wattages may be too bright. The vendor is responsible to advise the City and verify the wattages with the City prior to ordering any product for installation. The pilot program should be representative of the exact fixtures, wattages, and controls that will be installed during LED conversion as agreed to by the City.

LED Fixture Installation - The work involves removing an existing luminaire and photocell, repairing or adjusting a streetlight arm, and (replacing) wiring as necessary, installing a new LED luminaire, wireless streetlight control as appropriate, and a fuse block while repeating the process until all of the identified luminaires are replaced.

All LED luminaires will be installed according to the manufacturer's instructions. After replacing the existing luminaire with the new LED luminaires, the Contractor will test and confirm proper operation of the streetlights and controls, if included. Work also includes, but may not be limited to:

a. Coordinate and schedule any needed power disconnections and reconnections with National Grid, such as defective wire from the fuse block to the NGRID wire connection on the secondary (triplex) wiring loop, as appropriate.
b. Coordinate traffic control with the City as necessary.
c. Identify the pole location and verify map and pole number; update database with equipment installed, date, latitude and longitude for GPS coordinates, IP addresses, and other information, as needed. Provide this data in a file format suitable to common GIS software and the City's requirements, such as ESRI ArcMap, as well as Microsoft Excel.
    - If luminaire arm is missing or defective, make a note and report to municipal representative and skip to the next location.
    - If a luminaire is on a utility pole but not on the inventory list, report to the municipal representative and perform the conversion as approved, then make a note in the inventory.
d. Affix appropriate Ownership Identification Label (to be provided by the Contractor) prior to installation in accordance with National Grid requirements.
e. Prepare LED luminaire and control for installation. Scan LED luminaire bar code. Ensure that each fixture and control work as intended. If a networked system, also confirm that each control can be seen on the software at the time of installation.
f. Perform safety check:
    - Check the secondary power lines (triplex) to determine the best approach for the luminaire and luminaire arm installation.
    - Check tree/vegetation. If tree /vegetation is obstructing the streetlight, trim branches as necessary to complete the installation; note work done in daily report form.
    - Check utility supply wire to the streetlight ensuring the drip loop is not touching any other wires or equipment. If touching other equipment, make adjustment if necessary; note work done in daily report form.
g. Check luminaire arm for structural integrity and perform routine\minor maintenance tasks (i.e., if bolts are loose, tighten the bolts). If luminaire arm and/or wind rod is damaged or non-repairable make a note to report to appropriate municipal representative and skip to the next location.
h. Check line voltage to the luminaire; update database if necessary.
i. Complete installations of fused disconnect devices as described below and per instructions below and in Appendices A and B.
    - Install inline fused disconnect and cover on streetlight-only pole if power is fed overhead.

- Install inline fused disconnect and cover in underground streetlight-only pole hand hole or in junction box, following approval and under supervision of the Utility.

j. Install LED luminaire and Controls as specified in Contract.
k. Confirm successful operation of the luminaire and control.
l. Note wattage of removed luminaire and LED replacement model, as well as pole number and street name for each. Prepare and store removed luminaire for recycling.
m. Utilize a main vehicle (a properly equipped bucket truck) equipped with Type D Arrow Board for mobile operation.
n. Comply with applicable environmental laws and regulations regarding handling of hazardous substances and take appropriate measures to ensure the safe handling of such materials as may be encountered in the performance of the Contract.
o. Recycle all materials such as old luminaires, paint, paint brushes and other materials responsibly. Provide required lading documentation.

Contractor may propose additional work for the City's consideration.

Electric System Separation - The Contractor will be responsible for creating a physical electrical separation between National Grid's secondary conductors and the municipal-owned street and area light conductors. This fused disconnect device is required to be installed at the time of conversion to LED on Utility-owned poles.

The separation is accomplished by installing a fused disconnect device (e.g., an in-line fuse holder capable of utilizing a midget cartridge style fuse on every street and area light supply located as near as possible to the connection to the National Grid-owned secondary conductors). National Grid will permit the City to install the disconnect devices on existing streetlight locations in an energized condition using Qualified Electrical Workers, which will include the disconnecting of the existing energized supply conductor source to the streetlight luminaire. The Contractor shall design his\her Work Plan such that this activity should not require a visit from National Grid to de-energize or re-energize the streetlight source at the service connection.

The purpose of the fused disconnect device, in addition to providing electrical protection, is to serve as a disconnect point for the municipally-owned streetlight. Once installed, the City's Qualified Electrical Workers may disconnect or reconnect a customer-owned streetlight(s) using the fuse device to perform maintenance or other equipment per Narragansett Electric Co. (National Grid) Guidelines for Customer-Owned Street Lighting Installation and Maintenance Replacement (Appendix A).

For underground customer circuit applications, the Contractor shall locate the disconnect device within an enclosure installed and owned by the municipality and located in close proximity to the designated service connection location within the enclosed National Grid facility. However, at a minimum for existing streetlight installations only, the disconnect device can be located within the base of the first streetlight standard closest to the circuit's service connection.

If it is found that the existing streetlight conductors are defective, corroded, or burned, or the circuits are insufficient, National Grid will allow the Qualified Electrician to install a #10 AWG wire of sufficient length, and will allow the municipality to make the permanent connections to National Grid's secondary wiring loop using the appropriate material and sized connectors, per the National Grid's Customer-Owned Streetlight Equipment Standards (Appendix B).

Traffic Controls - The Contractor shall submit a traffic control plan for approval by the municipality prior to authorization to proceed with the work. The traffic control plan shall stipulate the streets where police are required for traffic control at work zones due to traffic volume and/or safety concerns.

The Contractor shall provide and maintain such signs, barricades and warning lights as are necessary to warn and protect the public at all times if affected by work operations. Contractor shall arrange for police traffic patrols with the Police Department, in accordance with the approved traffic control plan, where required.

The cost of police details (personnel and vehicles) shall be borne by the City, not the Contractor. However, the Contractor is responsible for all other incidental traffic control measures and devices (cones, warning signs, flaggers etc.).

The procedure for securing police detail assistance involves notifying and securing the approval of the City, followed by the direct scheduling of such assistance by the Contractor. In the event of a scheduling change for any reason, the Contractor will be responsible for cancellation of any police detail. The cost of any cancelled work not coordinated with the police department will be the responsibility of the Contractor.

Contractor shall conduct operations as to cause the least possible obstruction and inconvenience to public traffic. Contractor shall maintain and make available to the City a local telephone number and website where they can be contacted twenty-four (24) hours per day.

Quality of the Work- Contractor shall make all necessary repairs and replacements to remedy any and all defects, breaks, or failures of the Work occurring within the conversion period. Such repairs and replacements shall conform to the specifications under which the Contractor originally performed the work.

Payment for LED Fixture Conversion - The LED installation process will be paid according to the final approved Price Proposal form and based on actual quantities as verified in the field and/or modified by approved change order. All streetlight work is subject to approval by the respective City's Project Manager or designee prior to payment authorization. Payments are subject to a standard 5% retainage until the end of the project. The Contractor shall provide a payment schedule for the City's approval after award.

GIS Lighting Survey (optional) – Prior to LED conversion, collect data on existing lighting inventory and identify attributes such as GPS coordinates (latitude and longitude) of each fixture, fixture type, pole mounting configuration, wattage, pole height and type, setback, mast arm length, and ID number. Record any issues such as damage, tree obstruction or electrical hazards. Auditor's software shall be capable of generating a custom mobile application for use by the client and their electrical contractor that provides all location mapping, asset data, and the ability to record installation progress and field notes in real time.
The Contractor shall provide frequent audit reports showing an overview map listing the locations completed during data collection.

The Contractor shall reconcile the data with the City's existing inventory and provide a GIS interchange data and GIS map for the City's use. This may include the development of a data dictionary defining data being collected for use with the GIS interchange data set.

2.05 Responsibilities of the Contractor Pre and Post LED Conversion – Scope of Work Items 1 and 4

The Contractor(s) shall provide warranty and non-warranty maintenance services for each existing light fixture (as of the date of the Contract acceptance) and each new light fixture once converted to LED and accepted by the City.

Call Center Operations – The Contractor shall maintain a Call Center where residents and municipal staff may report outages and other issues and which enables the Contractor to meet the emergency and non-emergency response times and other requirements of this RFP.

a. The Call Center is to be accessible twenty-four (24) hours per day, seven (7) days per week. It shall provide both internet, and phone access.
b. The Contractor shall provide written (electronic) reports detailing the services provided, any coordination efforts with the utility provider, calls received, urgency of the call, caller information (if available), nature of the repair and any other relevant information. The frequency of these reports may vary and is at the discretion of the City.
c. Within the Bid, the Bidder shall describe their approach to the Call Center operations.

Routine Maintenance – As part of routine maintenance, the Contractor will be responsible for initially responding to outages and following up on City or constituent repair requests to the call center. The Contractor shall first determine if the issue can be resolved remotely to avoid field actions if possible. If the issue falls under routine maintenance, it shall be addressed within the timeframe provided herein. With approval from the City, the Contractor may bundle routine maintenance issues to minimize the number of times a truck needs to be rolled. The Contractor shall be responsible for the replacement of failed lamps, ballasts, or other equipment, repair of minor wiring issues, replacement of broken covers, and other failures/issues that occur under warranty or as a result of age and normal deterioration.

Routine maintenance will be performed within five (5) business days of notification, weather permitting.

The selected Contractor shall maintain an inventory or have readily available a supply/supplier of streetlight network controls, photocells, lamps, ballasts and all other equipment\materials that is routinely used for these repairs in order to perform the repairs in the timeframes required.

Immediately following the completion of the repair work, the Contractor shall send an after-action report to the City indicating what actions were taken to resolve the field issue. The Contractor will log this into the reporting system and generate a report of repair actions each billing period for review by the City.

Emergency Repair Service - Emergency service shall be provided by the Contractor twenty-four (24) hours per day, seven (7) days per week, to make immediate or temporary repairs to municipally-owned series and multiple streetlight pole or service knock downs or damage caused by vehicle collision, acts of God, vandals, or as required because of a public safety hazard.

Emergency calls must be authorized under direction of the City unless otherwise specified. When so authorized, the Contractor shall dispatch a qualified service technician and equipment. Response time shall be less than two (2) hours under normal circumstances.

Contractor shall conduct operations so as to cause the least possible obstruction and inconvenience to public traffic. Contractor shall maintain and make available to the City, a local telephone number and website where they can be contacted twenty-four (24) hours per day.

Additional Repair Service - In the event a pole and/or fixture needs to be replaced and/or additional poles or lights are requested, the Contractor shall submit a quote via e-mail to the applicable municipal representative for approval. Upon approval, the Contractor shall proceed with the replacement. The successful Contractor will be expected to note and then report to the City's representative any outages found in the process of responding to a streetlight maintenance request.

Utility Coordination - The Contractor will be required to coordinate streetlight repair and maintenance activities with the utility where required. However, the City are interested in minimizing these costs to the extent practicable.

The procedure for securing assistance from the utility involves notifying and securing the approval of the City, followed by the direct scheduling of such assistance by the Contractor. The Contractor shall be responsible for following up with the utility on a weekly basis to determine the status of any outstanding work requests. If the utility has completed its work, and the streetlight is still not functioning, the Contractor shall return to finalize the repair. In the event of a scheduling change for any reason, the Contractor will be responsible for cancellation of any utility assistance. The Contractor will pay for any utility assistance that it fails to cancel in a timely fashion.

Reporting - The Contractor shall provide reports in spreadsheet format, (Microsoft Excel), outlining the following information: location of repair, pole number, adjacent street address, coordination activity with utility company, complaint number, date complaint received, date repair due, date of actual service, if repair has been turned over to utility and if so the work request number, and any other pertinent notes. The monthly reports shall include summary information, as requested by the City (e.g. total number of calls, average response time).

Other Assistance - At the City's request, the Contractor shall make themselves available to attend City Council and other meetings in order to report on issues concerning the street-lighting system

2.06 Other Services

The Contractor should identify any other services that it will provide as part of the contract.

2.07 Deliverables and Schedule

Deliverables shall be considered those tangible resulting work products that are to be delivered to the City such as reports, final streetlight inventory, copies of incentive applications, warranty documentation, cut sheets and other items related to this project.

The following deliverables related to the LED conversion shall be provided on a daily, weekly, bi-weekly, monthly or other basis as needed, and shall include but not be limited to:

a. Daily report submitted at the beginning of the next work day, by fax or e-mail as directed by the City detailing the number of streetlights removed, number of LED streetlights installed, number of poles skipped and reason why the poles were skipped, traffic detail provided, utility coordination, and any incident or situation and additional work that happened during the work day. The reports shall identify locations by street and pole number. The reports shall

also indicate the planned or proposed work for the following week.

b. Monthly summary report detailing work completed for submission to National Grid.

c. Pay requests will be on a monthly basis and will detail work performed per line item as specified in the Price Agreement and any negotiated work performed during that time. All payment requests shall be made utilizing AIA standard payment forms 702 and 703.

d. Access to the inventory database, as appropriate.

e. Final summary report that includes the final inventory (streetlight and decorative) at the conclusion of the project.

2.08 Warranty and Performance

All parts and labor shall be covered under warranty as described below.

The Contractor represents and warrants that:

A. They will perform all Services set forth herein in a good and workmanlike manner, in conformance with the specifications and requirements of the approved Contract, and in accordance with the highest applicable professional and/or industry standards;

B. Each of their employees, subcontractors, and others assigned to perform Services have the proper skill, training, and background to be able to perform Services in a competent, timely, and professional manner and that all Services shall be so performed; and

C. They will, at all times during the term of an approved Contract, maintain and keep current all licenses, technical certifications, and certificates of insurance required to perform the work set forth in the Contract.

Warranty work shall have at a minimum a one-year (1-year) workmanship warranty period from the date of total project completion and acceptance by the City. The manufacturer's warranty for the LED luminaires and controls shall be at least ten (10) years. Contractor shall submit completed original Manufacturer warranty documentation, issued to the appropriate City, prior to acceptance of the work.

The one (1) year and ten (10) year warranty periods for all equipment will begin upon final acceptance of the entire project for the City, not on the install date of each individual piece of equipment.

Contractor shall make all necessary repairs and replacements to remedy any and all defects, breaks, or failures of the Work occurring within the workmanship warranty period. Such repairs and replacements shall conform to the specifications under which the Contractor originally performed the work. Contractor shall also repair any damage or remedy any disturbance to property or improvements if caused by the Contractor's work and if the damage or disturbances occurs within the warranty period. If Contractor performs warranty work, the warranty work also shall have a one (1) year workmanship and ten (10) year materials warranty period from the date of acceptance by the municipality.

The Contractor shall notify the City if such problems occur within the one (1) year period. The City, or their designated representative, will provide the Contractor with written Notice of the need to perform warranty work unless it is determined that an emergency exists, that delay would cause

serious additional loss or damage, or if any delay in performing the work might cause injury to any member of the public. If the Contractor, after written Notice, fails within five (5) days to comply with the municipality's request, the municipality has the right to perform the warranty work either by hiring another Contractor or by using its own forces. In that event, the Contractor and its Surety shall be liable to the municipality for the cost of the work performed and any additional damage suffered by the City, including reasonable attorney's fees incurred by the City for this event.

2.09 Period of Performance

CONVERSION

It is the responsibility of the contractor to ensure the proper flow of materials and scheduling of labor to meet project timelines. The LED conversion shall be completed within one hundred and twenty (120) calendar days (weekends and holidays included) from the notice to proceed with LED conversion work. The failure to complete work within the stipulated timeframe will result in the assessment of liquidated damages in the amount of five hundred dollars ($500) for each day the work is past due unless just cause can be provided to the City for the delay. "Just cause" is defined as acts of god such as floods, earthquakes, acts of terrorism or other natural disasters that have been clearly documented by the Contractor. Normal amounts of rain, wind, or poor weather conditions will not be considered as just cause for extending the contract duration. Please note that the liquidated damages are not penalties, but rather pre-determined damages.

The initial term of this Agreement shall begin on the Effective Date and shall expire one (1) year later unless terminated sooner as provided herein. The Bidder shall provide a schedule at the outset of the project that identifies specific milestones and the anticipated date of completion.

The Parties may agree, by mutual consent, to extend the Agreement for an additional one (1) year period. All original or duly negotiated and mutually agreed upon terms and conditions shall apply during any such extension period.

Conversion work may not begin until all National Grid and Office of Energy Resources (OER) approvals for incentives and rebates are approved and authorization to proceed is furnished.

MAINTENANCE

Pre-LED conversion maintenance shall begin as of the date of transfer of ownership of lights to the City and shall continue uninterrupted for the term of this contract or until all of the fixtures have been converted to LED. The City shall issue a Notice to Proceed for this work once the transfer is complete.

Post-LED conversion maintenance shall begin upon written acceptance by the City of the LED conversion project ("Conversion Effective Date"). The initial term of this Price Agreement element (Post-LED Conversion Maintenance) shall begin on the Conversion Effective Date and shall expire three (3) years later unless terminated sooner as provided herein. This contract will be for an initial three (3) year period with two (2) additional one (1) year extensions.

The additional two (2) years may be taken individually or in multiple years with the same terms and conditions. At least sixty (60) days prior to the expiration of the initial term, or extension, the Parties shall commence discussions if they desire to extend the Price Agreement. The Contractor shall provide a written extension proposal within thirty (30) calendar days following the

municipality's request for such a proposal. However, nothing binds or requires either Party to extend this Price Agreement. The total term of this Price Agreement shall not exceed five (5) years.

2.10 Work Performed by the City

Municipal staff shall make available sufficient hours of staff personnel as is required to meet with the Contractor and provide such information as required.

The City has assigned the following personnel or their designees to this project. Contact information will be provided upon contract award.

- Erik Skadberg, City Engineer, City of East Providence
- Daniel Borges, Director of Public works, City of East Providence

The City, or their designee, will perform the following specific duties:

a. Approve the lighting design, pilot program, and completed streetlight inventory.
b. Inspection and monitoring of the project.
c. Provide instruction and direction for additional work that the Contractor might perform.
d. Cover the cost of police detail, in accordance with the respective City-approved traffic control plans.
e. Provide guidance on maintenance services.
f. Provide lay down area.
g. Serve as a central point of communication as issues arise during the lighting conversion process.

2.11 Place of Performance

The work will be performed on poles as depicted herein or as otherwise negotiated by the City. The City reserves the right to add to the Price Agreement additional sites, such as but not limited to municipal parking lots, schools, parks, and other lighting on municipal properties not listed herein. The City reserves the right to negotiate pricing for alternative and/or additional fixture types.

2.12 Public Safety

Contractor shall comply with the following safety requirements:

a. Work performed on all poles must follow the applicable requirements of OSHA and shall ensure all such work is performed by a Qualified Electrical Worker.
b. Work in Utility's manhole, hand hole, or other enclosed electrical equipment shall be performed in coordination with and under the supervision of the Utility, as per Appendices A and B.
c. Temporary traffic control based on municipally approved traffic control plans.

Locations with limited access include the following:

Some streets may be off limits during holidays and special events (pre-planned road races, etc.). Emergency situations may result in limited or restricted access to certain streets on an as-needed basis. No additional compensation shall be allowed for limited or restricted access as defined herein. A delay of work caused by a special event sponsored by the City shall be considered "just cause" for a delay of the LED conversion. The LED conversion schedule will be extended proportionately for any special event delays caused at the request by the City to avoid liquidated damages.

2. Proposal and Content Organization

By submitting a response, the Contractor is accepting all contract conditions, terms, and documents that are a part of, referenced by, or attached to this RFP.

The Contractor must provide all information and follow the format outlined herein. Additional materials in other formats may not be considered. The City may reject as non-responsive at their sole discretion any proposal or any part thereof, which is incomplete, inadequate in its response, or departs in any substantive way from the required format. Proposal responses shall be organized in the following manner:

a. Cover Letter
b. Table of Contents
c. Description of Firm and Experience, including Project Team and Equipment
d. Project Approach and Understanding - Conversion
e. Project Approach and Understanding – Pre and Post-Conversion Maintenance
f. Proposed LED Luminaires and Controls Manufacturer Warranties and Cut-Sheets
g. Bid Forms and Price Proposal Forms

3.01 Cover Letter

The Cover Letter must state the name of the person(s) authorized to represent the Contractor in any negotiations, the name(s) of the person(s) authorized to sign any contract that may result, the contact person's name, mailing or street addresses, phone and fax numbers and email addresses.

A legal representative of the successful firm authorized to bind the firm in contractual matters must sign the Cover Letter and the Proposal response.

3.02 Table of Contents

Please provide a *Table of Contents* after the Cover Letter giving a clear identification by section and page number. Such sections will be those listed below.

3.03 Description of Firm and Experience (Maximum Points – 30)

1. Provide a company profile and describe your firm's legal structure. Include:
    a. Company ownership. If incorporated, the state in which the company is incorporated and the date of incorporation.

    b. Location of the company offices.

    c. Number of employees both locally and nationally.

    d. Location(s) from which employees will be assigned.

    e. Name, address, and telephone number of the Bidder's point of contact for a contract resulting from this RFP.

    f. Company background/history and why Bidder is qualified to provide the services described in this RFP.

    g. Length of time Bidder has been providing services described in this RFP. Please provide a brief description.

h. Resumes for key staff to be responsible for performance of any contract resulting from this RFP.

2. Describe areas of expertise and other information that would be helpful in characterizing the firm. Describe the firm's internal procedures and/or policies associated or related to work quality and cost control. Describe the resource availability, which may include the various levels of experience of the personnel to be provided and vehicles and equipment to be used, to perform the work for the duration of the project.

3. Briefly describe other engagements by your firm that demonstrate relevant experience and that best characterize the firm's capabilities, work quality, and cost control.

4. Describe your firm's familiarity and experience working with utility and other incentive programs. Please note that a minimum of 3 years prior experience is expected.

5. Provide the approximate number of people and how many crews will be assigned to the LED conversion and maintenance sections of this project. Describe your firm's workforce, including the prior experience of all qualified certified journeyman linemen on staff, who are capable of performing as Qualified Electrical Workers as described in this RFP. Please include:

A. Names of key team members, including those of any subcontractors, who will be performing the work on this project, and:

   a. their responsibilities on this project

   b. current assignments and location

   c. experience on similar or related projects

   d. unique qualifications

   e. percentage of their time that will be devoted to the project.

Contractors must notify and receive approval of the City for any changes to proposed subcontractors.

6. Provide a list and descriptions of the vehicle(s) and equipment to be used including important features such as the main vehicle (bucket truck) which is equipped with Type D Arrow Board for mobile operation.

3.04 Project Approach and Understanding – LED Conversion (Maximum Points – 20)

Provide a narrative description of how the firm proposes to design a replacement plan and then replace the City's inventory of utility and municipal-owned streetlights with LED streetlights and streetlight controls. Your firm should rely on expertise and experience with similar projects to demonstrate how it will effectively complete the proposed project within the allowable timeframe. The narrative should describe your firm's overall approach to the project including but not necessarily limited to the following elements:

1. Describe how you will work with the City to determine appropriate wattages, lumen output, color

temperature, color rendering, and overall quantity of light. Describe your process for choosing and installing sample fixtures for visual review within the Pilot Program area in the City.

2. Describe your strategy for using control systems to maximize incentives and limit on-going utility costs.
3. Describe storage and staging areas you will require during the project. You may include a discussion of how your firm will make personnel adjustments if project goals and standard are not being attained. Provide a short description of how traffic control will be handled on residential streets and on arterial streets.
4. Describe the type of handheld devices to be used by your crews and how you will furnish and utilize these devices in the field to verify and update the municipalities' streetlight databases as the conversion to LEDs, perhaps with network controls, is completed. Specify the type of device to be used and explain how the device will interface with and update the streetlight databases. Explain how you will format the databases as needed to work with the handheld devices and to have data available to the City through Excel or other approved software. Explain how you propose to work with maps to track progress. Explain how you will share the database, train municipal representative(s), and report monthly progress to National Grid.
5. Provide a Proposed Project Schedule to complete the work within the required timeframe as described in this RFP. Provide the impact of multiple participating communities on the project schedule.
6. Describe your firm's safety policies and procedures as they relate to handling high-pressure sodium lamps and other hazardous items. How are employees directed to deal with broken lamps? What precautions are taken to prevent damage to lamps during luminaire removal, clean-up activities, and transport? Do the procedures specifically address handling high-pressure sodium lamps and other types, including mercury vapor lamps, in public areas or in environmentally sensitive areas? Describe your firm's environmental spill or release response procedures and training in general and specifically as they would apply to the materials to be handled for this project and the firm's equipment that will be used.
7. Describe how you propose to commission the streetlights and controls including provision of commissioning reports.
8. Describe your firms approach to training of municipal staff on the network control software.
9. Include any other information you feel will be helpful in assessing your firm's ability to meet the LED conversion requirements of this RFP.

3.05 Project Approach and Understanding – Maintenance (Maximum Points – 20)

1. Describe in detail the services to be offered to meet the requirements of this RFP. Responses must include a clear explanation of warranty, routine, emergency, and additional maintenance definitions, scope and practices.
2. Describe Call Center operations including intake and response protocols for routine and emergency calls, reporting practices, online portal, staffing, oversight, and arrangement of operation.

3.06 Proposed LED Luminaires and Network Controls, Including Manufacturer Warranties (Maximum Points – 20)

1. LED Luminaires

All proposed luminaires shall be eligible for National Grid and Office of Energy Resource incentives. They shall be Design Lights Consortium qualified where possible, dimmable through the use of proposed controls, and meet the requirements described in *Specification for LED Luminaires*.

Specify the preferred LED luminaires proposed to replace the HPS, MV, INC, and/or other streetlights as depicted in the streetlight inventory in your proposal. Respondents shall provide two (2) options for LED luminaires as follows:

Option 1: This shall be the Contractor's preferred product for roadway luminaires. Describe the technical capabilities and features that make it your preferred option. Specify the manufacturer, model numbers, rated wattage and manufacturer's warrantees, and attach cut sheets for the proposed luminaires. Include an estimate of the energy and demand (kWh and KW) savings as described in this RFP.

Option 2: This may be an alternate product that meets the technical specifications herein. Describe the differences in technical capabilities and features of the product that make it worthy of consideration. Specify the manufacturer, model numbers, rated wattage and manufacturer's warrantees, and attach cut sheets for the proposed luminaires. Include an estimate of the energy and demand (kWh and KW) savings as described in this RFP.

2. Streetlight Controls

The City is interested in installing smart controls on all streetlights in the inventory (aside from streetlights that will be transferred to RIDOT after conversion, which shall receive photocells only). The aim is to have dimming, scheduling and light management capability on all City-owned streetlights. In addition, the City is interested in boosting WIFI connectivity and adding additional sensors in some areas and neighborhoods. Product proposals shall be "state of the art" in terms of technology and allow for interoperability via cloud-based dashboard management system (Options 1 and 2). The control nodes shall be fully functional in salt air environments and capable of operating within the variable voltage range allowed by regulation. Bidders are encouraged to offer up to three (3) types of control nodes with varying capabilities and prices, as described below.

Option 1: Products proposed under option one (1) shall be a smart controls system with capabilities for light and asset management such as scheduling, dimming, alarms/notifications, and remote control. Please note that the city is not interested in a dimulator.

Option 2: Products proposed under option two (2) shall be a smart controls system that allows for integration of additional capabilities, such as public WiFi, public safety features, and more.

Option 3: Standard photocell for on/off operation.

Describe the technical capabilities and features of each type of control node offered; include examples of their use in other communities, if applicable. Provide supporting documentation and opinion as to the benefits of each option.

3. Decorative / Post Top Fixtures:

Specify the LED luminaires proposed to replace or retrofit the post top streetlights in the City inventories. Describe the technical capabilities and features of the proposed products. Specify the manufacturer, model numbers, rated wattage and manufacturer's warrantees, and attach cut sheets for the proposed luminaires. These fixtures must have the capacity to install a photocell or smart

controls with a 7-pin node. Include an estimate of the energy and demand (kWh and KW) savings as described in this RFP.

Respondents may offer up to two (2) Proposals for different types of Decorative Luminaires as detailed below:

Option 1: A replacement fixture for Decorative Streetlights.

Option 2: A drop in retrofit kit for Decorative Streetlights. Please note that the City is not interested in a screw-in type retrofit option.

3.07 References (Maximum Points – 10)

Provide references that include three (3) previous municipalities or other government agencies for which similar LED conversion work was performed and (3) previous municipalities or other government agencies for which similar maintenance work was performed. Note that extensive descriptions or references to vaguely related projects are discouraged and may negatively impact the overall outcome of the evaluation. References may be called and their responses used in the evaluation process.

Information provided shall include:

a. Client/Business name;
b. Project description;
c. Project dates (starting and ending);
d. Client/Business project manager name and telephone number;
e. Contract amount.

3.08 Price Proposals (Maximum Points – 75)

Complete the Bid Form and submit along with a separate Price Proposal as per the instructions within this RFP. Please note that all Price Proposals should be submitted in a marked envelope that is separate from the technical proposal outlined above. The envelope should be clearly marked "price proposal" and include the bidders name, address information, bid name, and bid number.

Price proposals will be evaluated after all qualification packages have been reviewed and scored. Qualifying price proposals will be calculated and rated. The scores from the qualifications and pricing evaluation will then be added to determine the final score for ranking purposes.

3. Evaluation Criteria

The evaluation of proposals will be conducted in a time frame convenient to the City. The City reserves the right to award on the basis of cost alone, accept or reject any or all proposals, and to otherwise act in its best interest including, but not limited to, directly negotiating with any Contractor who submits a proposal in response to this RFP and to award a contract based upon the results of those negotiations alone. Further, the City reserves the right to waive irregularities it may deem minor in its consideration of proposals. The City has the right to reject any or all proposals for good cause in the public interest and may waive any evaluation irregularities that have no material effect on upholding a fair and impartial evaluation selection process.

Proposals found to be technically or substantially non-responsive at any point in the evaluation process will be rejected and not considered further. Qualification proposals that are rated with a combined

average score less than seventy-five (75) will not be considered for further evaluation during the price proposal evaluation phase. The City may elect to require bidders to provide presentations and interviews for further consideration of award.

PHASE 1

The first phase is an initial review to determine if the proposal, as submitted, is complete. To be complete, a proposal must meet all the requirements of this RFP.

PHASE 2

The second phase is an in-depth analysis and review based on criteria defined under *Proposal Content and Organization.* In the event that the City requires further information and/or a demonstration of any equipment or process offered in any proposal, all Contractors asked for same will do so at no cost.

Each proposal response will be evaluated in accordance with the following evaluation criteria:

EVALUATION CRITERIA – PROPOSAL RESPONSES	
Criteria	**Maximum Score**
1. COVER LETTER	N/A
2. TABLE OF CONTENTS	N/A
3. DESCRIPTION OF FIRM AND EXPERIENCE	30
4. PROJECT APPROACH & UNDERSTANDING - CONVERSION	20
5. PROJECT APPROACH & UNDERSTANDING - MAINTENANCE	20
6. PROPOSED LEDs AND CONTROLS	20
7. REFERENCES	10
Maximum Technical Proposal Total:	**100**

If oral interviews or presentations are determined to be necessary, this next step will consist of oral presentations and further clarification of the Contractor's response. The municipalities reserve the sole right to select the number of Contractors, as determined by the evaluation scoring, to be interviewed.

PHASE 3

Following completion of the RFP proposal evaluations, the third phase is a comparison of each proposal's evaluation score relative to the costs proposed.

The Municipalities will individually score the Price Proposals from Contractors whose RFP evaluations place them in the Competitive Range in accordance with the following evaluation criteria:

Criteria	**Maximum Score**
1. CONVERSION PRICES, WARRANTIES – LEDs	20
2. INSTALLATION PRICES, WARRANTIES - CONTROLS	20
3. T&M AND PER POLE MAINTENANCE PRICES	15
4. ADDITIONAL MAINTENANCE SERVICE PRICES	20
Maximum Price Proposal Total	**75**

The Price Proposal evaluation score will be added to the Proposal Response evaluation score to determine a **TOTAL TECHNICAL AND PRICING SCORE (Maximum: 175 points)**.

Appendix B - National Grid's Customer-Owned Streetlight Equipment Standards

This document contains information that is provided for reference purposes only, and should not be construed or used as a substitute for an analysis of the applicable tariffs, agreements, and safety regulations specific to each particular customer.

CUSTOMER OWNED OUTDOOR LIGHTING – TABLE OF CONTENTS			
	OUTDOOR LIGHTING CONSTRUCTION STANDARD	**PAGE NUMBER**	**ISSUE**
		10 – ***(page 1 of 14)***	**07/14**

1. SAFETY:

The number 1 priority of every job is:

SAFETY!

National Grid's distribution poles carry electric lines that operate at voltages as high as 34,500 volts and can carry very high amperages.

National Grid's underground infrastructure carries the same very high distribution voltages and amperages in a confined space, and may also carry sub-transmission or transmission lines that operate at even higher voltage levels.

Outdoor lights are installed within the electric space on a distribution pole. Performing work on outdoor lights may require the worker to be in close proximity to the distribution lines.

It is the responsibility of the customer that owns and maintains outdoor lighting to insure that all personnel working on the outdoor lighting system are qualified to work in the designated electric supply space on a distribution pole in accordance with OSHA 1910.269.

OVERHEAD DISTRIBUTION
No customer, customer's employees, or contractors are ever allowed to perform any work on National Grid 120/240 volt or 120/208 volt secondary conductors.

UNDERGROUND DISTRIBUTION
No customer, customer's employees, or contractors are ever allowed to enter a National Grid manhole or handhole for any reason without National Grid safety supervision personnel being present on site.

IF UNSURE: - **STOP** – Call National Grid for assistance.

No outdoor lighting repair is too important to sacrifice personal safety.

2. **GENERAL:** These Standards identify requirements to enable a customer to safely install, remove, and maintain a customer owned outdoor lighting system which is installed on National Grid distribution poles and connected to National Grid overhead or underground secondary conductors.

Standards: All customer owned outdoor lighting shall be in compliance with the applicable provisions of the National Electric Safety Code, (NESC) latest edition, and the applicable National Grid Construction Standards.

Note: (As of July 1, 2014, the latest edition of the NESC is the 2012 edition)

Customer Owned Equipment: The customer shall be responsible to own, operate, and maintain all outdoor lighting equipment beyond the service tap connections to National Grid. This shall include, but not be limited, to the following:

1. Supplying all material and labor.
2. Transferring an overhead supplied outdoor light attachment to a new pole in the event of a pole replacement.
3. Relocating an overhead supplied outdoor light attachment to accommodate other construction activities on the pole.
4. Performing any work required on the outdoor lighting underground conduit system, conductors, foundation, pole, arm and luminaire.
5. Emergency 24 hour response to remove or make safe the outdoor light attachment in the event of a broken pole.

NOTE: In an emergency, National Grid personnel may perform, at customer expense, any customer outdoor lighting work National Grid deems necessary to maintain public or employee safety.

Electrical Separation: The customer is responsible to create an electrical separation between the National Grid secondary conductors and the customer owned outdoor lighting conductors. This is required to insure the safety of National Grid and customer employees. It also clearly defines where National Grid ownership ends and customer ownership begins. This is accomplished by installing a dual pole in-line fuse holder with a midget cartridge style fuse on every outdoor light supply located as near as possible to the connection to the National Grid owned secondary conductors. This fuse, in addition to providing electrical protection, shall serve as a future disconnect point for the customer owned outdoor light. Once installed, the customer may disconnect or reconnect a customer owned outdoor light only by means of the in-line fuse holder. See Figure 6 for overhead supplied outdoor lights, and Figures 7, 8, 9, or 10 for underground supplied outdoor lights. See Figure 12 for in-line fused disconnect details.

Ownership Identification: The customer is responsible to label all customer owned outdoor lighting luminaires in accordance with National Grid Construction Standards. See Figures 1 and 2.

Worker Qualifications: All customer work shall be completed only by personnel qualified to work in the electric supply space on a distribution pole (herein referred to as “Qualified Worker”) in accordance with OSHA 1910.269. An executed copy of the OSHA 1910-269 ACKNOWLEDGEMENT FOR THE USE OF QUALIFIED ELECTRICAL WORKERS form is mandatory.

Final Connections to National Grid 120/240 VAC or 120/208 VAC Secondary Conductors: For OVERHEAD supplied lighting, National Grid will permit a Qualified Worker to make all connections and disconnections of customer owned outdoor light supply conductors to the company owned secondary and grounding conductors. For UNDERGROUND supplied lighting, National Grid will permit a Qualified Worker to make all connections and disconnections of customer owned outdoor light supply conductors to the company owned secondary and grounding conductors provided that National Grid personnel are present to provide safety supervision and access to the underground facilities.

LIGHTING OWNED
AND MAINTAINED BY
(NAME OF CUSTOMER)

3. CONSTRUCTION DRAWINGS:

Figure 1 – Ownership Identification Label for Customer Owned Outdoor Luminaires

1. All customer owned outdoor light luminaires shall be identified with a label to clearly define ownership and maintenance responsibilities.

2. Ownership identification labels shall be reflective white with black lettering. See Figure 1.

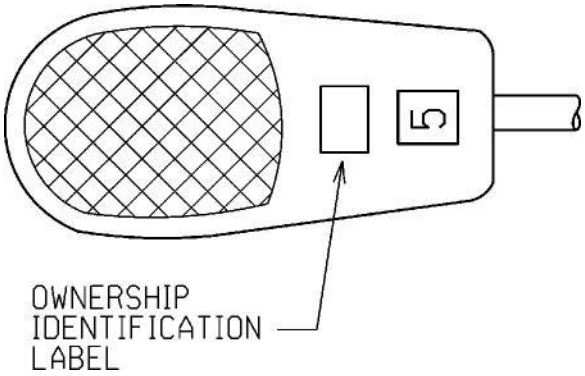

Figure 2 – Installation of Ownership Identification Label

1. Ownership identification label shall be installed on the lower door of a horizontal roadway luminaire such that it is clearly visible from the ground. See Figure 2.

2. For post top, floodlight, and other luminaires, the ownership identification label shall be installed on the luminaire housing in a location such that it is clearly visible from the ground.

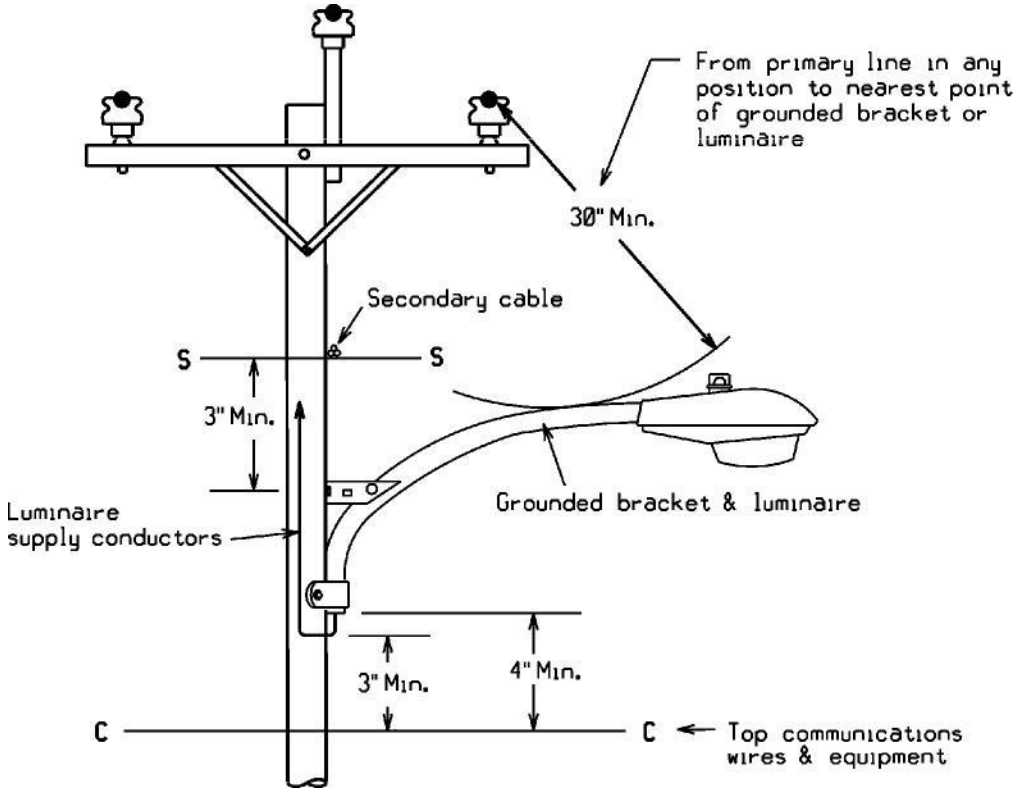

Figure 3 – Outdoor Light Clearance from Overhead Conductors

1. Primary Conductors – Maintain minimum 30-inch clearance from any primary conductor or cable to nearest point of grounded luminaire or bracket.

2. Secondary Conductors – Maintain minimum 3-inch vertical clearance from secondary wires or cable to nearest point of grounded luminaire bracket. (NESC Table 239-1)

3. Communications Cables – Maintain minimum 4-inch vertical clearance from closest communication cable to nearest point of grounded luminaire bracket. (NESC Table 238-2)

   Maintain minimum 3-inch clearance from closest communications cable to nearest point of luminaire supply conductors drip loop. Luminaire supply conductors must be covered with non-metallic flexible conduit. (NESC 238D)

4. Location on Pole – Always install the outdoor light BELOW the secondary conductors. This applies to new installations and any time an existing outdoor light is relocated or transferred to a new pole.

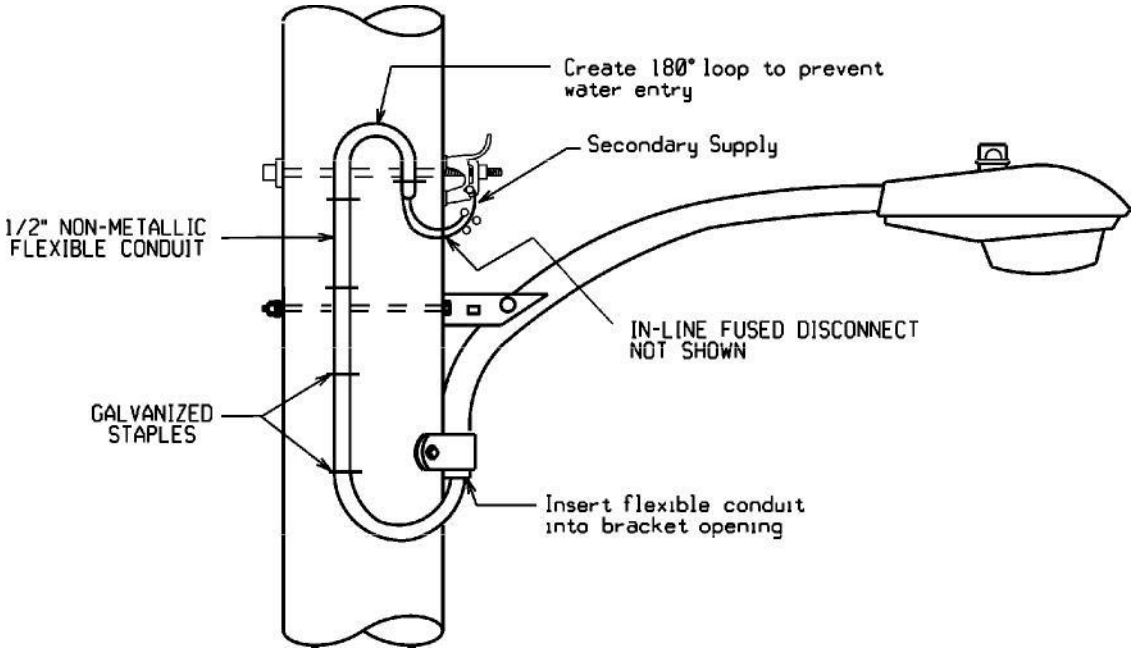

Figure 4 - Mechanical Protection for Overhead Supplied Outdoor Light Fixture Conductors

1. NESC Table 239G1 requires that all luminaire supply conductors (#10 AWG) shall have mechanical protection (1/2" non-metallic flexible conduit) installed from the point where they leave the pole end of the bracket to the connection to the secondary supply in order to take advantage of the clearance dimensions shown on page 5.

2. Insert the non-metallic flexible conduit into the bracket opening and extend up the pole to the secondary supply.

3. Create a 180 degree loop at the secondary supply to prevent rain water from entering and becoming trapped inside the flexible conduit.

4. Secure the non-metallic flexible conduit with galvanized staples spaced 12-inches apart or closer as necessary.

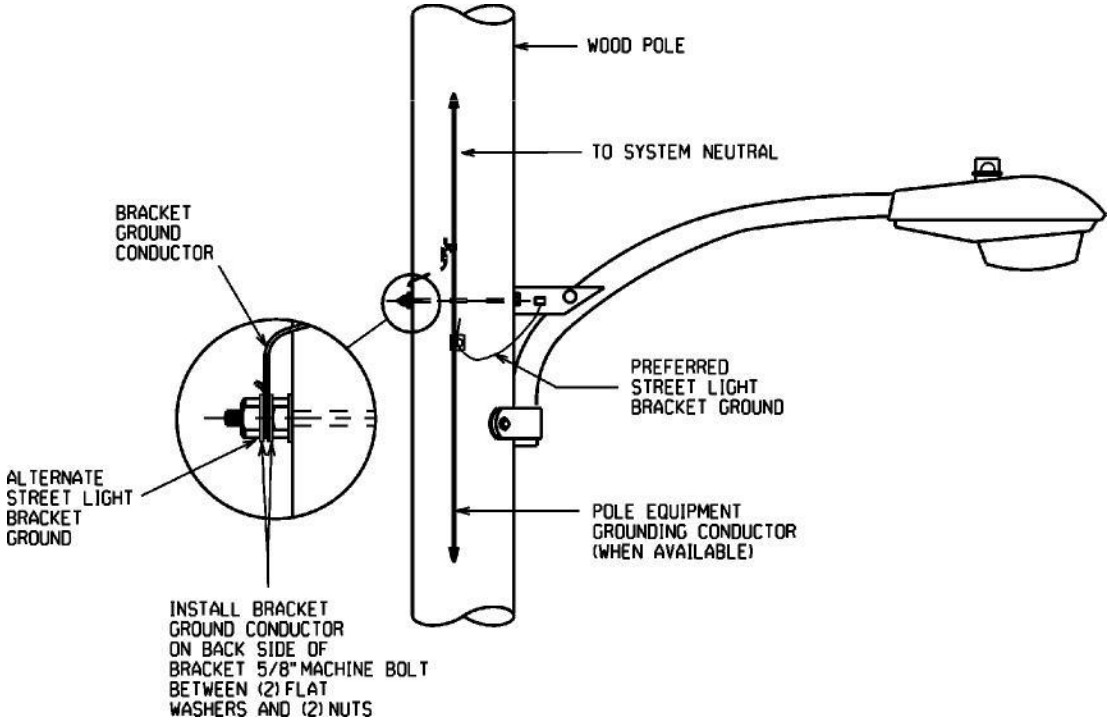

Figure 5 – Grounding of Overhead Supplied Outdoor Light

1. Every outdoor light bracket shall be grounded. Install a #4 AWG stranded copper conductor with enough length to connect to the pole equipment grounding conductor (when available) or to the secondary system neutral. Final connections to National Grid conductors may be made by a Qualified Worker.

2. Many brackets have a bracket grounding bolt located near the wood pole end of the bracket. If none exists, install a bracket grounding bolt on the bracket or connect grounding conductor to the back side of the 5/8” square head machine bolt which secures the bracket to the pole.

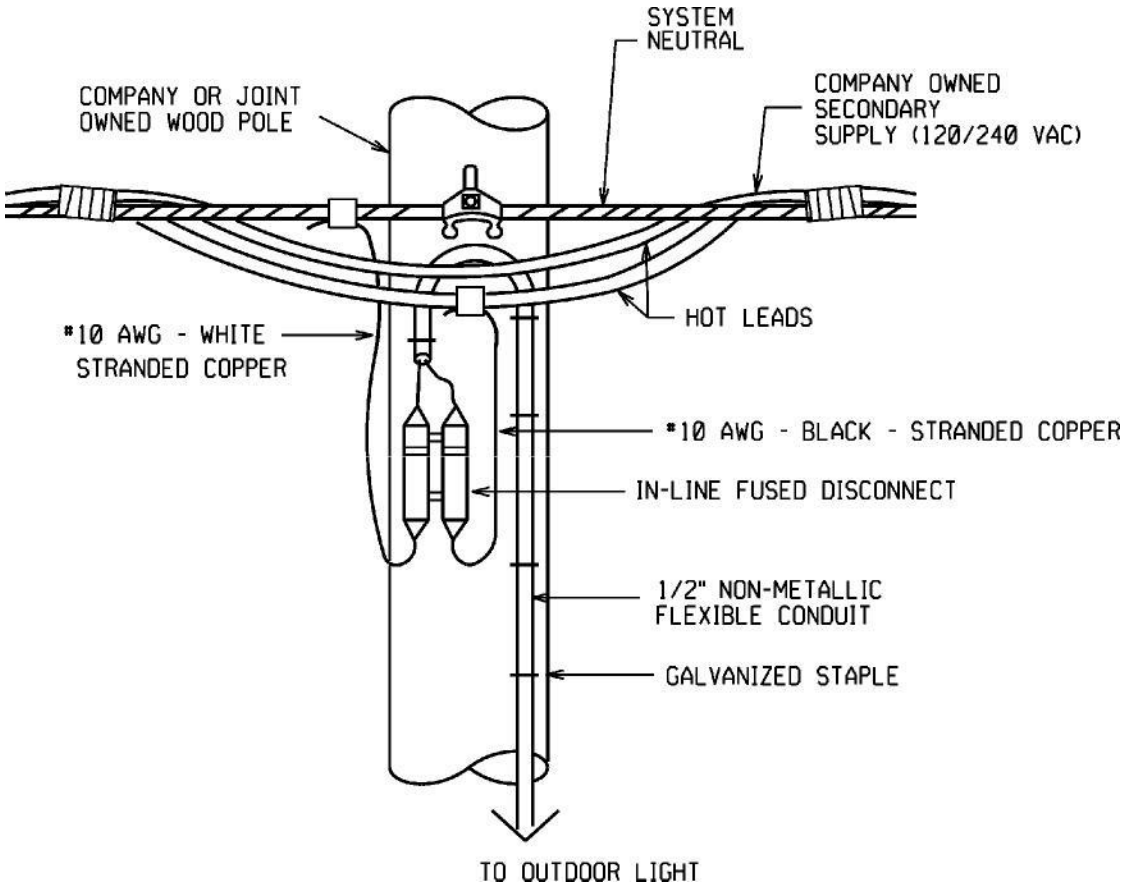

Figure 6 – Connection of Overhead Supplied Customer Owned Outdoor Light to National Grid Overhead Secondary Conductors

1. Every customer outdoor light shall have an in-line fused disconnect as described in “Electrical Separation” on page 3. See page 14 for details on the in-line fused disconnect.

2. Secure the in-line fused disconnect to the pole using a spring loaded conduit clip or galvanized staple.

3. Provide sufficient slack in the luminaire wiring to facilitate fuse replacement.

4. Outdoor lighting fixture wiring shall be #10 AWG 7-strand copper BLACK-WHITE with RHH/RHW/USE-2 insulation.

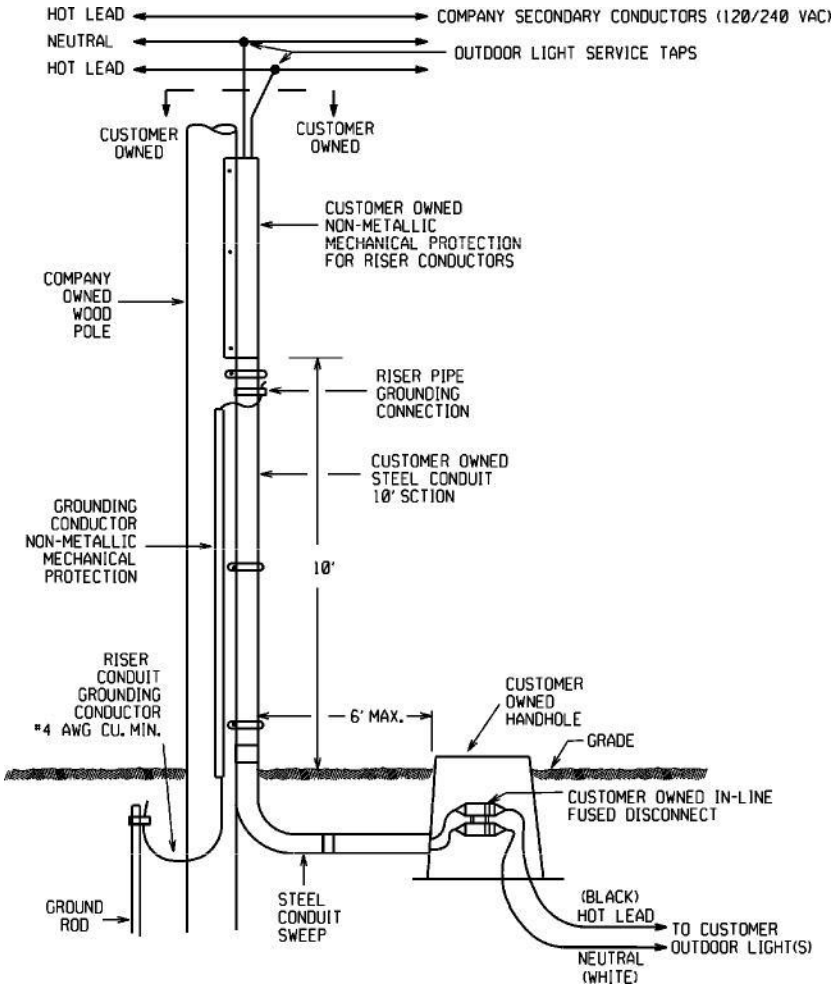

Figure 7 – Connection of Customer Owned Outdoor Lighting Riser to National Grid Overhead Secondary Conductors

1. Install customer owned handhole as shown in Figure 7. Customer owned handhole shall house the in-line fused disconnect. See page 14 for details on the in-line fused disconnect.

2. Always install the riser conduit away from vehicle traffic.

3. No more than (2) riser conduits may be attached to a pole. Consult National Grid Engineering if more than (2) risers are desired.

4. Underground supply conductors shall be #6 AWG 7-strand copper (minimum) with RHH/RHW/USE-2 insulation. Conductors shall be color coded BLACK = Hot lead, WHITE = Neutral.

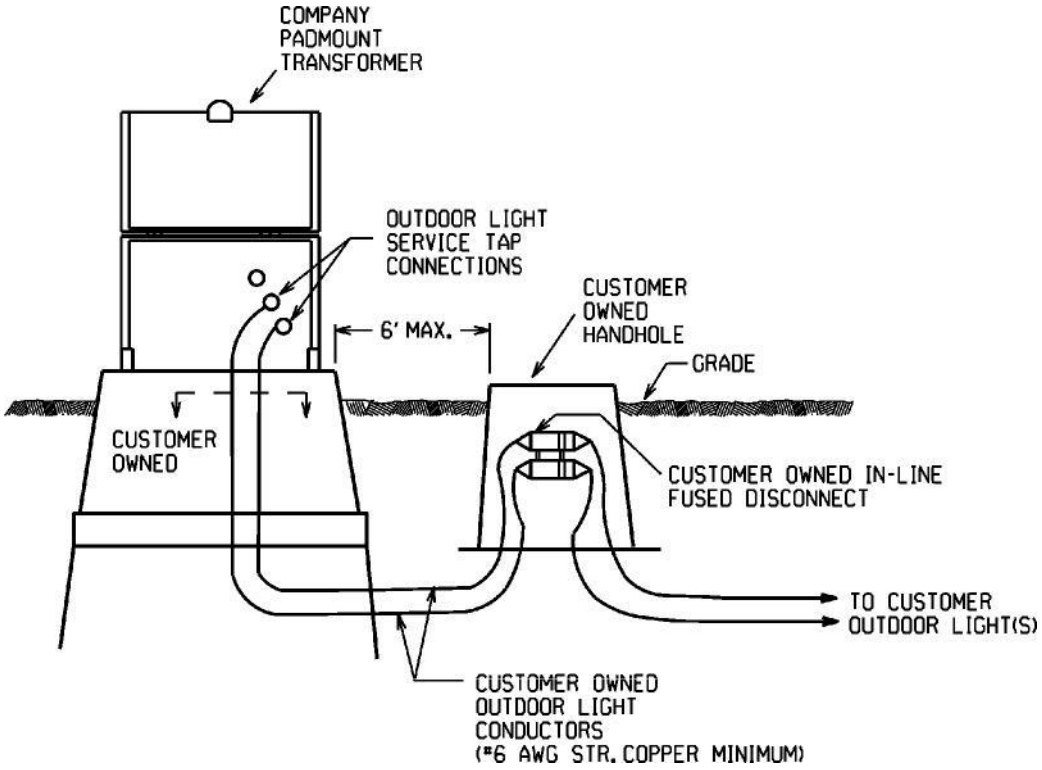

Figure 8 – Connection of Underground Supplied Street Light to National Grid Padmount Transformer

1. Install customer owned handhole as shown in Figure 8. Customer owned handhole shall house the in-line fused disconnect. See page 14 for details on the in-line fused disconnect.

2. Underground supply conductors shall be #6 AWG 7-strand copper (minimum) with RHH/RHW/USE-2 insulation. Conductors shall be color coded BLACK = Hot lead, WHITE = Neutral.

3. In cases where a new customer conduit is to be installed into a National Grid padmount transformer, National Grid shall determine the conduit entrance location at the padmount transformer foundation. The customer shall install the conduit to just outside this location. National Grid shall then create the opening in the padmount foundation and extend the customer conduit into the padmount foundation.

4. All electrical connections or disconnections to the secondary supply may be performed by a Qualified Worker, however, in every case, National Grid personnel shall be present to provide safety supervision and to unlock and relock the padmount transformer.

CONNECTION OF CUSTOMER OWNED LIGHTING TO NATIONAL GRID PADMOUNT TRANSFORMER			
ISSUE	**STANDARD NUMBER**		
07/14	**10 – *(page 10 of 14)***	**CUSTOMER OWNED OUTDOOR LIGHTING STANDARD 1 8**	

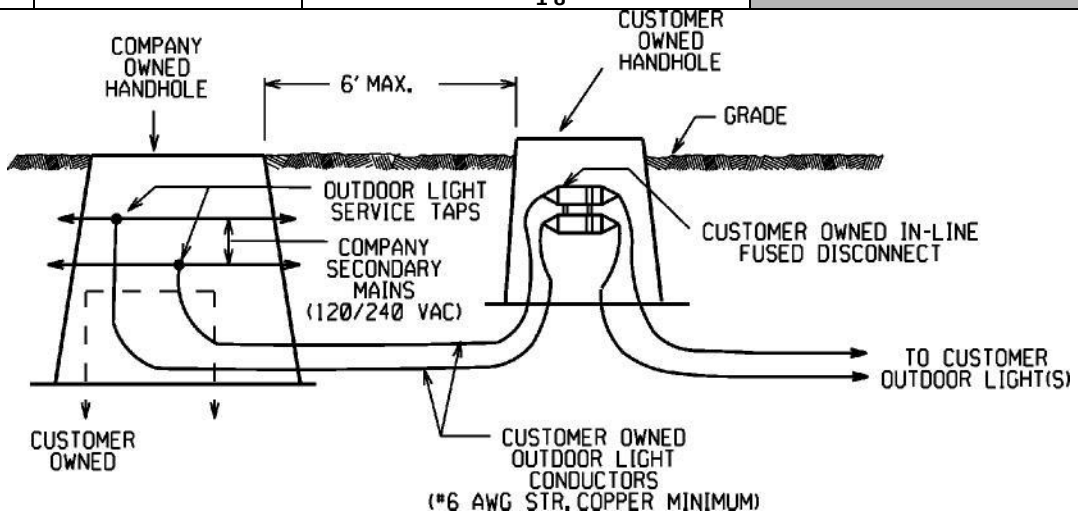

Figure 9 – Connection of Underground Supplied Customer Owned Outdoor Lighting to National Grid Handhole or Manhole – Standard Connection

1. Install customer owned handhole as shown in Figure 9. Customer owned handhole shall house the in-line fused disconnect. See page 14 for details on the in-line fused disconnect.

2. Underground supply conductors shall be #6 AWG 7-strand copper (minimum) with RHH/RHW/USE-2 insulation. Conductors shall be color coded BLACK = Hot lead, WHITE = Neutral.

3. In cases where a new customer conduit is to be installed into a National Grid manhole or handhole, National Grid shall determine the conduit entrance location in the manhole/handhole, The customer shall install the conduit to just outside this location. National Grid shall then create the opening in the manhole/handhole wall and extend the customer conduit into the manhole/handhole.

4. All electrical connections or disconnections to the secondary supply may be performed by a Qualified Worker, however, in every case National Grid personnel shall be present to provide safety supervision.

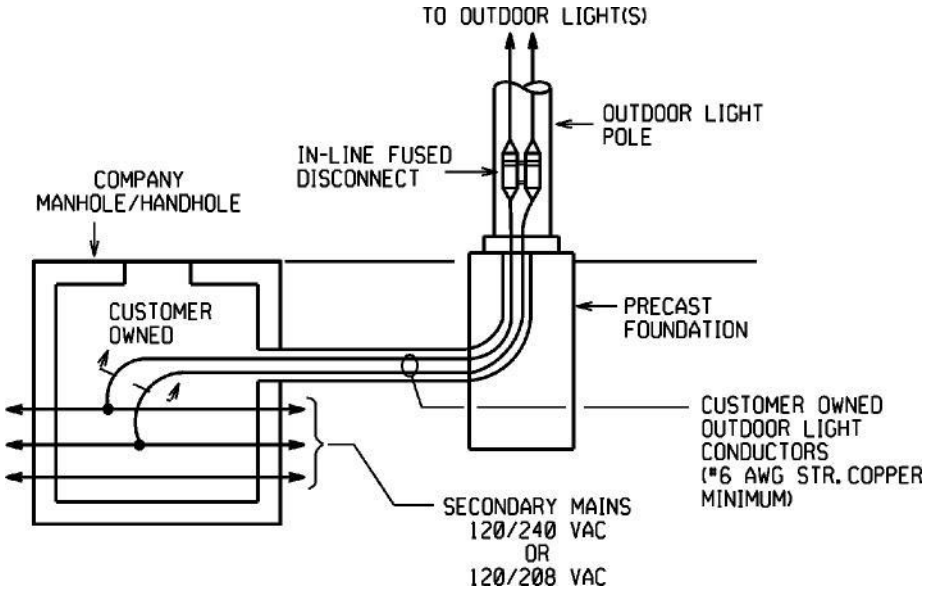

Figure 10 – Connection of Underground Supplied Customer Owned Outdoor Light to National Grid Handhole or Manhole – Non-Standard Connection

1. For all new installations and modifications to existing installations, the customer is required to install an in-ground handhole located as close as possible to the company provided electrical source point, as illustrated in Figures 7, 8, and 9.

2. In the rare case where the customer owned concrete outdoor lighting foundation is immediately adjacent to the National Grid manhole/handhole, installation of an in-ground customer owned handhole may be impossible. In this case, the in-line fused disconnect may be installed inside the pole access handhole. **This is allowed only in cases where no physical space exists to install the in-ground customer owned handhole.** Note that the #6 AWG underground supply conductors between the manhole and the base of the outdoor light are customer owned.

3. Underground supply conductors shall be #6 AWG 7-strand copper (minimum) with RHH/RHW/USE-2 insulation. Conductors shall be color coded BLACK = Hot lead, WHITE = Neutral.

4. In cases where a new customer conduit is to be installed into a National Grid manhole or handhole, National Grid shall determine the conduit entrance location in the manhole/handhole, The customer shall install the conduit to just outside this location. National Grid shall then create the opening in the manhole/handhole wall and extend the customer conduit into the manhole/handhole.

5. All electrical connections or disconnections to the secondary supply may be performed by a Qualified Worker, however, in every case National Grid personnel shall be present to provide safety supervision.

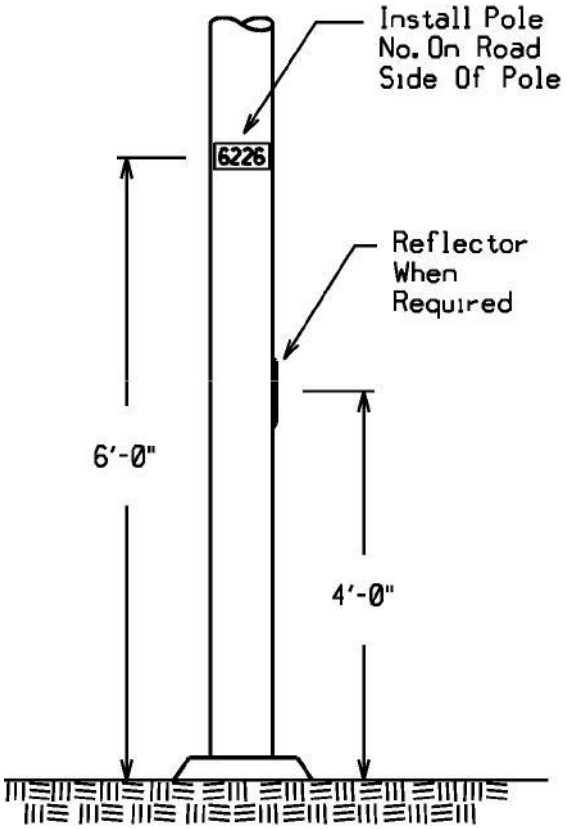

Figure 11 – Pole Numbering - Underground Supplied Customer Owned Lighting

1. Every underground supplied customer lighting pole shall be numbered in accordance with Figure 11.
2. Always use 1-3/4-inch x 3-inch, high intensity white reflective pole number decals.
3. Pole number decals shall be installed horizontal to each other as shown in Figure 11 – not vertical.

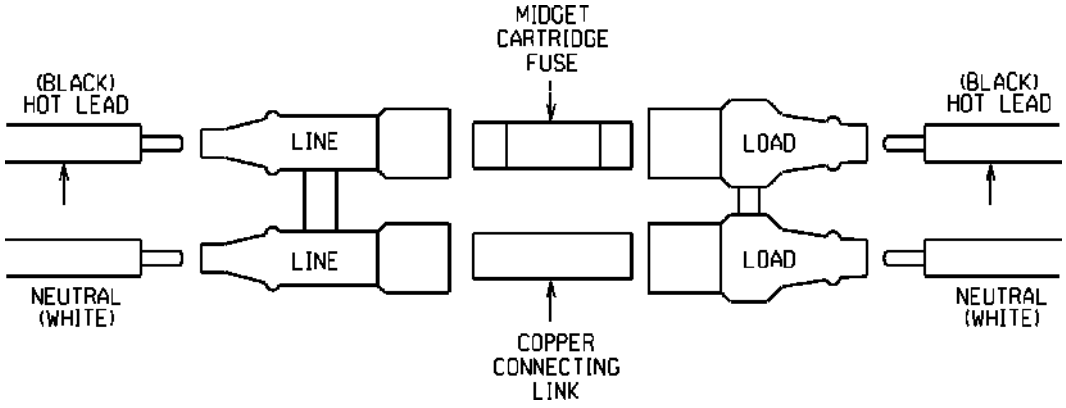
MIDGET
CARTRIDGE
FUSE
(BLACK)
HOT LEAD
LINE
LOAD
(BLACK)
HOT LEAD
LINE
LOAD
NEUTRAL
(WHITE)
NEUTRAL
(WHITE)
COPPER
CONNECTING
LINK

Figure 12 – In-Line Fused Disconnect Details

1. All customer owned outdoor lighting equipment shall be fused using a dual pole, watertight, in-line fuse holder and cartridge style fuse. This fuse, in addition to providing electrical protection, shall serve as a disconnection point for the customer owned outdoor lighting equipment.

2. Fuse Holder
The fuse holder shall be a watertight device suitable for use in an outdoor environment.

   The fuse holder shall be totally insulated, thus having no exposed energized parts.

   The fuse holder shall accept #14 AWG - #6 AWG stranded copper conductors on both ends.

   The fuse holder shall be a dual pole device allowing simultaneous disconnection of both the 120 VAC hot lead (black wire) and the neutral conductor (white wire).

   The fuse holder shall be designed such that, when separated, the midget cartridge fuse and copper connecting link shall be held captive in the load end of the fuse holder.

   The fuse holder shall be polarized to prevent accidental reversal of the live leg and neutral connections.

3. Cartridge Fuse
The fuse shall be a non-glass type, midget style cartridge fuse. Fuse dimensions shall be 13/32" diameter x $1^1/_2$" length.

4. Neutral Connection
The neutral conductor shall not be fused. Install a 13/32" diameter x $1^1/_2$" length copper connecting link in place of a cartridge fuse.

5. Always provide sufficient slack in wiring to facilitate fuse replacement.

IN-LINE FUSED DISCONNECT DETAILS			
ISSUE	**STANDARD NUMBER**	**CUSTOMER OWNED OUTDOOR LIGHTING STANDARD 142**	
07/14	**10 – *(page 14 of 14)***		

Appendix C

SPECIFICATIONS FOR LED LUMINAIRES

1.0 INTRODUCTION

This specification provides the necessary information to allow for selection of LED luminaires which meet the key parameters of this project. Requirements were developed to meet the objectives of this project and allow for a common basis of design against which all proposals can be evaluated for suitability. Incomplete submittals or failure to meet any of the stated criteria may result in rejection of a proposal. Submittal entries will be evaluated based on best overall value rather than lowest price.

2.0 RELATED DOCUMENTS

Contract Drawings and Conditions of Contract (including General Conditions, Addendum to the General Conditions, Special Conditions, Technical Specifications Sections and all other Contract Documents) apply to the work of this section.

3.0 DEFINITIONS

3.1 Lighting terminology used herein is defined in IES RP-16. See referenced documents for additional definitions.

3.2 Exception: The term “driver” is used herein to broadly cover both drivers and power supplies, where applicable.

3.3 Clarification: The term “LED light source(s)” is used herein per IES LM-80 and TM-21 to broadly cover LED package(s), module(s), and array(s).

4.0 PRODUCT REQUIREMENTS

4.1 Tabulated summary of key parameters and product criteria.

Existing Luminaires			New Luminaire Requirements							
Luminaire Type	Lamp Wattage	Source	Minimum Initial Lumens	Maximum Wattage	Distribution Type	Input Voltage	Maximum Weight	Maximum EPA	Mounting	Driver
Flood	250W	HPS	13,500	140	6x6	120-227	120-277	3.1ft^2	Yoke	Dimmable
Flood	400W	HPS	18,500	220	6x6	120-227	120-278	3.1ft^2	Yoke	Dimmable
Roadway	50W	HPS	3900	30	Type 2	120-227	120-290	0.3 ft^2	arm (2" normal)	Dimmable
Roadway	100W	HPS	6800	50	Type 2	120-227	120-286	0.3 ft^2	arm (2" normal)	Dimmable
Roadway	100W	MV	3900	50	Type 2	120-227	120-294	0.3 ft^2	arm (2" normal)	Dimmable
Roadway	105W	INC	3900	30	Type 2	120-227	120-292	0.3 ft^2	arm (2" normal)	Dimmable
Roadway	150W	HPS	6800	50	Type 2	120-227	120-294	0.3 ft^2	arm (2" normal)	Dimmable
Roadway	175W	MV	6800	50	Type 2	120-227	120-294	0.3 ft^2	arm (2" normal)	Dimmable
Roadway	250W	HPS	15,500	140	Type 2	120-227	120-288	0.5ft^2	arm (2" normal)	Dimmable
Roadway	400W	HPS	25,000	220	Type 2	120-227	120-289	0.75ft^2	arm (2" normal)	Dimmable
Roadway	400W	MV	25,000	220	Type 2	120-227	120-297	0.5ft^2	arm (2" normal)	Dimmable
Post	100W	HPS	6800	50	Type 5	120-227	120-284	0.3 ft^2	Tenon (3x3 standard)	Dimmable
Post	50W	HPS	3900	30	Type 2	120-227	120-290	0.3 ft^2	arm (2" normal)	Dimmable

***Please note that all final wattages and luminaires that fall slightly below minimum initial lumens output should be approved by the City through the pilot program and prior to installation, depending on the City's control strategies.**

Existing Luminaires			New Luminaire Lighting Requirements (Maintained Levels)				
			Roadway			Sidewalk	
Luminaire Type	Lamp Wattage	Source	Average at Pavement	Ave:Min Uniformity	Max Veiling Luminance Ratio	Average at Pavement	Ave:Min Uniformity
Roadway	100W	HPS	0.7fc	6	0.4	0.2fc	4
Roadway	100W	MV	0.4fc	6	0.4	0.2fc	4
Roadway	105W	INC	0.4fc	6	0.4	0.2fc	4
Roadway	150W	HPS	0.7fc	6	0.4	0.2fc	4
Roadway	175W	MV	0.7fc	6	0.4	0.2fc	4
Roadway	250W	HPS	1.3fc	4	0.4	0.5fc	4
Roadway	250W	MV	.9fc	4	0.4	0.3fc	4
Roadway	400W	HPS	1.8fc	4	0.4	0.6fc	4
Roadway	400W	MV	1.3fc	4	0.4	0.5fc	4
Roadway	50W	HPS	0.4fc	6	0.4	0.2fc	4

4.2 General requirements

4.2.1 Luminaires shall satisfy the key criteria summarized in section 4.1.

4.2.2 Luminaires shall be listed on the Design Lights Consortium Qualified Products List and qualify for National Grid and OER incentives.

4.2.3 Transmissive optical components shall be applied in accordance with OEM design guidelines to ensure suitability for the environment (e.g., electromagnetic, thermal, mechanical, chemical).

4.2.4 Luminaire shall be designed for ease of component replacement and end-of-life disassembly.
4.2.5 LED light source(s) and driver(s) shall be RoHS compliant.
4.2.6 Luminaire shall accept the voltage or voltage range specified at 60 Hz and shall operate normally for input voltage fluctuations of plus or minus 10 percent.
4.2.7 All internal components shall be assembled and pre-wired using modular electrical connections.
4.2.8 The following shall be in accordance with ANSI C136.37.
4.2.8.1 Wiring and grounding
4.2.8.2 Terminal blocks for incoming AC supply wiring (electrical)
4.2.8.3 Photocontrol receptacle
4.2.8.4 Latching and hinging
4.2.8.5 Mounting provisions
4.2.8.6 Ingress protection: minimum rating of IP66 for Optical assembly, and IP65 for Electrical components compartment.

4.3 Painted or finished luminaire surfaces exposed to the environment
4.3.1 Shall exceed a scribe creepage rating of 8 (per ASTM D1654) after 3000 hours of exposure testing to salt\fog per ASTM B117.
4.3.2 Coastal finish option shall exceed a scribe creepage rating of 8 (per ASTM D1654) after 5000 hours of exposure testing to salt\fog per ASTM B117.
4.3.3 The coating shall exhibit no greater than 30% reduction of gloss per ASTM D523, after 500 hours of QUV testing at ASTM G154 Cycle 6.
4.3.4 Fixtures shall be available in a black finish.

4.4 Vibration
4.4.1 Luminaires shall meet requirements for Level 2 (bridge/overpass) per ANSI C136.31

4.5 Thermal management
4.5.1 Luminaire shall start and operate in ambient temperature range from -40C to 40C.
4.5.2 Maximum rated case temperature of driver and other internal components shall not be exceeded when luminaire is operated in ambient temperature range specified.
4.5.3 Mechanical design of protruding external surfaces (heat sink fins) shall facilitate hose-down cleaning and discourage debris accumulation.
4.5.4 Non-passive means of cooling are not allowed. This includes the use of liquids or other mechanical cooling systems.

4.6 Photocontrol receptacle, and photocontrol
4.6.1 Receptacle
4.6.1.1 Luminaires to be supplied with a 7-pin ANSI C136.41 compliant receptacle with the dimming leads from the driver connected to the receptacle pads and specified in ANSI C136.41. Drivers shall all be 0-10 volt dimming capable.
4.6.2 Photocontrol
4.6.2.1 Shall be rated for minimum 20 years, with 10-Year Warranty.
4.6.2.2 Shall have LED inrush protection on the 7-pin node. Please specify type.
4.6.2.3 Shall have extreme surge protection of 1280J/40kA utility or 2120J/40kA UL

listed.

4.6.2.4 Shall have double thick enclosure and lens with additional UV inhibitor.

4.6.2.5 Shall be UL listed to U.S. and Canadian safety standards.

4.6.2.6 Shall be 120V to 480VAC, 60Hz.

4.6.2.7 Shall have load rating of 1000 watts, 1800 VA ballast.

4.6.2.8 Shall have average power consumption: <0.5 watts @ 120V.

4.7 Electrical immunity

4.7.1 Luminaire shall be listed for wet locations by a U.S. Occupational Safety Health Administration (OSHA) Nationally Recognized Testing Laboratory (NRTL).

4.7.2 Manufacturer shall indicate on submittal form whether failure of the electrical immunity system can possibly result in disconnect of power to luminaire.

4.7.3 Enhanced surge protection devices (SPD) are required. SPDs shall be rated to protect the luminaire up to 10kV\5kA combination wave surges in accordance with ANSI C136.2 (Most Current) and UL 1449 recognized. Extreme -20kV/10kA can be an option.

4.7.4 Failure mode of surge protection is to leave the luminaire off.

4.8 Interference and power quality

4.8.1 Luminaire shall comply with FCC 47 CFR part 15 interference criteria for Class A (non-residential) digital devices.

4.8.2 Luminaire shall comply with section 5.2.5 (luminaires rated for outdoor use) of ANSI C82.77 at full input power and across specified voltage range.

4.9 Color attributes

4.9.1 Color Rendering Index (CRI) shall be no less than 70 with the option of 80 or higher.

4.9.2 Nominal Correlated Color Temperature (CCT) options shall be available in 2700K, 3000K and 4000K +/- 8%.

4.10 Identification

4.10.1 Luminaire shall have an external label per ANSI C136.15.

4.10.2 Luminaire shall have an internal label per ANSI C136.22.

5.0 PRODUCT REQUIREMENTS by product category

5.1 Roadway Luminaires

5.1.1 Optical Features

5.1.1.1 Borosilicate or any tempered glass optical enclosure is preferred not required.

5.1.1.2 Any plastic materials used in the optical assembly that affect the light output and distribution shall be appropriately heat and UV resistant. Plastic materials shall have been evaluated and exhibit a Yellowness Index (YI) over the useful life of the product of no more than 30%. YI reference ASTM E313 (ASTM D1925). A list of relevant plastic materials used, and the plastic material manufacturer's "YI" data report

shall be provided with the bid documents.

5.1.2 Electrical Features

5.1.2.1 Expected life of LED light engines of >100,000 hours at 25C.

5.1.2.2 LED's lumen depreciation equal to or greater than L85 at 100,000 hours.

5.1.2.3 Expected life of the electronic driver of 100,000 hours at 25C ambient.

5.1.2.4 Driver shall be easily accessible.

5.1.2.5 Surge protection device shall be connected in series with the luminaire load and shall disconnect power at the end of life. Device shall allow no more than 10% of pass-through to surge energy under either differential or common mode surge.

5.1.3 Mechanical Features

5.1.3.1 Luminaires with rugged die-cast aluminum housing are preferred. Polycarbonate door is acceptable.

5.1.3.2 Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter with 2-bolt clamping mechanism.

5.1.3.3 Tool-less entry to electrical compartment with 3 station terminal block and quick disconnects.

5.1.3.4 Bubble level located inside the electrical compartment for levelling of luminaire during installation.

5.2 Floodlights

5.2.1 Optical Features

5.2.1.1 Shielding options available to control light trespass and uplight where required.

5.2.1.2 Segmented internal reflectors designed to produce beam pattern as specified in the tables in section 5.1.

5.2.2 Electrical Features

5.2.2.1 Expected life of LED light engines of >100,000 hours at 25C.

5.2.2.2 LED's lumen depreciation equal to or greater than L80 at 100,000 hours.

5.2.2.3 Expected life of the electronic driver of 100,000 hours at a 25C ambient.

5.2.2.4 Surge protection device shall be connected in series with the luminaire load and shall disconnect power at the end of life. Device shall allow no more than 10% of pass-through to surge energy under either differential or common mode surge.

5.2.3 Mechanical Features

5.2.3.1 Low copper content die cast aluminum A360 allow castings. Die-cast aluminum housing with integral heat sink fins is preferred.

5.2.3.2 Tool free access to electrical compartment with stainless steel latches.

5.2.3.3 Knuckle adjustable to fit 2-3/8" to 2-7/8" tenon.

6.0 QUALITY ASSURANCE

6.1 Before approval and purchase, Owner may request luminaire sample(s) identical to product configuration(s) submitted for inspection. Owner may request IES LM-79 test reports of luminaire sample(s) to verify performance is within manufacturer-reported tolerances.

6.2 Electrically test fully assembled luminaires before shipment from factory.

6.3 After installation, Owner may perform IES LM-50 field measurements to verify performance requirements, giving consideration to manufacturing tolerances and measurement uncertainties as outlined in IES LM-61 and NEMA LSD 63.

7.0 WARRANTY

7.1 Warranty shall be for a minimum period of ten (10) years and shall cover maintained integrity and functionality of the following:

7.1.1 Luminaire housing, wiring, and connections

7.1.2 LED light source(s)

7.1.2.1 Negligible light output from more than 15 percent of the LED packages constitutes luminaire failure.

7.1.3 LED driver(s) and associated surge protection device.

7.2 Warranty period shall begin with the date of project completion as per RFP, or as negotiated by owner such as in the case of an auditable asset management system. Note that warranty on labor shall be for a minimum of one (1) year as per RFP.

8.0 MANUFACTURER SERVICES

8.1 Manufacturer shall provide on-site installation and troubleshooting support in addition to via telephone and/or email.

9.0 ELIGIBLE MANUFACTURERS

9.1 While the products indicated above are preferred, any manufacturer offering products that comply with the required product performance and operation criteria may be considered. If you chose to submit alternate products, please clearly indicate in your bid response

9.2 All roadway luminaires supplied must be from the same manufacturer. All floodlights supplied must be from the same manufacturer that may be different from the roadway light manufacturer.

10.0 REQUIRED SUBMITTALS

10.1 Product cutsheets

10.1.1 Luminaire cutsheets

10.1.2 Cutsheets for LED light source(s)

10.1.3 Cutsheets for LED driver(s)

10.1.4 Provide diagrams illustrating light output and input power as a function of control signal.

10.1.5 Cutsheets for surge protection device

10.2 Instructions for installation and maintenance

10.3 IES LM-79 luminaire photometric report(s) from an accredited test laboratory.

10.4 Lumen maintenance calculations and supporting test data

10.4.1 Shall be in accordance with LED Lighting Facts guidance.

10.4.1.1 Exception: calculations shall be based on 100,000 hours of operation and average ambient temperature of 25C

10.5 Summary of reliability testing performed for LED driver(s)

10.6 Written product warranty as per section **Error! Reference source not found.** above.

10.7 Safety certification and file number indicating compliance with UL 1598

10.7.1 Applicable testing bodies are determined by the US Occupational Safety Health Administration (OSHA) as Nationally Recognized Testing Laboratories (NRTL) and include: CSA (Canadian Standards Association), ETL (Edison Testing Laboratory), and UL (Underwriters Laboratory).

10.8 Documentation from the luminaire and controls manufacturer(s) confirming interoperability of their products and identifying the manufacturer responsible for resolving any interoperability issues.

10.9 Documentation from the controls manufacturer(s) regarding any cybersecurity certifications the system has, including but not limited to UL 2900, IEC 62443, NIST Cybersecurity Framework, or other certifications to test the cybersecurity of system.