

**Delaware Valley Regional Planning Commission**

**Request for Proposals  
for  
Guaranteed Savings Agreement**

**Prepared on Behalf of  
45 municipalities in Bucks, Chester, Delaware and Montgomery counties of Pennsylvania**

**Issue Date: October 16<sup>th</sup>, 2015**

**Due Date: November 17<sup>th</sup>, 2015**

**Public Notice**  
**Delaware Valley Regional Planning Commission, on behalf of 45 municipalities in southeastern PA (located in Bucks, Chester, Delaware, and Montgomery counties)**

**Request for Proposals**

Notice is hereby given that the Delaware Valley Regional Planning Commission, on behalf of 45 municipal governments (the “**Municipalities**”) located in Bucks, Chester, Delaware, and Montgomery counties in the Commonwealth of Pennsylvania on October 16th, 2015 at <http://www.dvrpc.org/asp/Consultant/> will accept proposals for the following:

**Guaranteed Savings Agreements**

The **Regional Streetlight Procurement Program** (RSLPP) seeks proposals from qualified energy service companies (each a “**Respondent**”) to serve the program. The municipalities participating in the RSLPP seek to identify a single Energy Services Company (ESCO) to serve the program. The RSLPP assembles the resources municipalities need to design, procure, and finance the transition to LED street lighting tailored to their specific needs. Outdoor lighting systems will primarily include street lighting and roadway applications, though traffic signals, controls and other lighting applications may also be included through this program. The identified ESCO will enter into individual guaranteed savings agreements (“**GSAs**”) with each participating municipality a form of which is attached as Appendix A, and provide an investment grade audit that will identify measures for the conservation of energy (“**CMs**”) in outdoor area lighting systems located within each municipality, and for the procurement and installation of those CMs. The identified ESCO will develop an implementation schedule for the expeditious and quality installation of fixtures across multiple municipalities, in accordance with the executed GSAs. The selected ESCO will pool the buying power of participating municipalities, with the expectation that the streetlights will be procured at a price below that which would be available to any one municipality.

The Request for Proposals packages are available on-line at [insert DVRPC’s address here]. Any additional information may be obtained from the Delaware Valley Regional Planning Commission by e-mailing Liz Compitello at [ecompitello@dvrpc.org](mailto:ecompitello@dvrpc.org).

Responses to this Request for Proposals are being solicited in accordance with the Pennsylvania Guaranteed Energy Savings Act 62 Pa.C.S. § 3752 et seq.

Respondents are required to submit complete responses to this Request for Proposals (“**Responses**”) as instructed in this Request for Proposals.

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## 1. INTRODUCTION AND GENERAL INFORMATION

### 1.1 Introduction.

This Request for Proposals (“**RFP**”) is being issued by the Delaware Valley Regional Planning Commission on behalf of 45 municipal governments in southeastern PA (the “**Municipalities**”) organized under the “Regional Streetlight Procurement Program” pursuant to the Pennsylvania Guaranteed Energy Savings Act 62 Pa. C.S. § 3752 et. seq. (the “**Act**”).

The **Regional Streetlight Procurement Program** (RSLPP) seeks proposals from qualified energy service companies (each a “**Respondent**”) to serve the program. The municipalities participating in the RSLPP will identify a single Energy Services Company (“**ESCO**”) to serve the program. The RSLPP assembles the resources municipalities need to design, procure, and finance the transition to LED street lighting tailored to their specific needs. Outdoor lighting systems will primarily include street lighting and roadway applications, though traffic signals, parking lot lighting, and recreational lighting will also be considered through this program. The identified ESCO will enter into individual guaranteed savings agreements (“**GSAs**”) with each participating municipality, a form of which is attached as Appendix A<sup>1</sup>, and provide an investment grade audit (“**IGA**”) that will identify measures for the conservation of energy (“**CMs**”) in outdoor area lighting systems located within each municipality, and for the procurement and installation of those CMs. The identified ESCO will develop an implementation schedule for the expeditious and quality installation of LED streetlights across multiple municipalities, in accordance with the executed GSAs. The selected ESCO will pool the buying power of participating municipalities, with the expectation that the streetlights will be procured at a price below that which would be available to any one municipality.

The 45 municipalities participating in the RSLPP share a set of common goals and objectives for the outdoor lighting upgrade project they aim to achieve through this program:

- Conversion of existing HPS, MV, Incandescent, MH fixtures to more energy-efficient, higher performing and longer-lasting LED fixtures.
- Minimizing future maintenance and operating costs incurred by the municipality. Though maintenance cost savings are not documented through this program, municipalities recognize the significant savings that will be achieved by the longer lifespans and higher quality of LED streetlights.
- Compliance with lighting standards, improved energy efficiency and aesthetics.
- Reductions in streetlight energy bills.
- In many cases, municipalities desire to implement networked control and monitoring/asset management system.
- In many cases, municipalities wish to consider the relamp of existing incandescent traffic signals or replacement of LED traffic signals that have reached the end of their useful life.
- In many cases, municipalities desire to replace existing parking, recreational, decorative, floodlighting and wallpack luminaires with new LED luminaires.

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<sup>1</sup> Certain schedules may be subject to further modification to conform to the RSLPP program

- This is a *regional* project and selected ESCO will work to make sure that all participants benefit from the services provided through this program.

The successful Respondent will be required under each GSA to conduct an investment grade audit (“**IGA**”) of outdoor lighting systems located in the responsive participating municipality to identify lighting CMs that meet the municipality’s objectives and that taken together are self-funding – meaning that the reductions in energy will be greater in each year than the financing cost of constructing the CMs and there will be no out of pocket costs to each municipality unless the municipality chooses to structure the project this way. The outdoor lighting systems to be evaluated in the IGA are identified in Appendix B Description of Participating Municipalities. When each individual municipality and the successful Respondent have agreed on the CMs and the construction price for the CMs to be installed under the GSA, and subject to completion of the construction financing as described below, the successful Respondent will construct the CMs on the schedule set forth in the GSA. Individual implementation schedules will be developed for each participating municipality as part of the GSA, and these individual schedules will be coordinated through a whole-program RSLPP implementation schedule developed in coordination with the RSLPP steering committee. Following completion of construction, the successful Respondent will conduct monitoring and verification activities in accordance with the GSA and will guarantee achievement of savings such that the CMs taken together are self-funding. The term of the GSA will be consistent with the expected useful life of the CMs, but not to exceed 20 years.

On behalf of program participants, DVRPC has developed an approximated inventory of streetlights (wattage, type, count) installed in each participating municipality that was developed using a copy of each participating municipality’s most recent utility street lighting bill provided to DVRPC. Some information was not provided completely, and is thus missing from this inventory. This inventory is included as Appendix B of this RFP. Additional supplementary information for reference, such as the existence of or desire to consider the retrofit to decorative fixtures, the wish to consider adaptive controls, the wish to retrofit traffic signals or other outdoor area lighting (parking and rec) is included in Attachment B. This RFP also includes a specification for the streetlights to be purchased through this program (listed as Appendix I) modeled after the [U.S. Department of Energy’s Municipal Solid State Lighting Consortium Model Specification for Roadway Luminaires v2.0](#). Respondents will be required to use this specification for their proposal submissions as well as for the ultimate purchase of streetlights through this program.

DVRPC will serve as the coordinator and issuer of this RFP through the selection process. DVRPC is facilitating the review of Respondent proposals, and the municipal participants will identify a group of representatives who will collectively select a single ESCO that best meets the qualifications laid out in this RFP. **Neither DVRPC, the Foundation for Renewable Energy and the Environment (“FREE”), nor Keystone Lighting Solutions assume any obligation to the Respondents.** All GSAs developed through this project will be an agreement between the RSLPP-identified ESCO and the responsive municipalities – DVRPC will not be involved in this process, except as an advisory role to municipalities if requested.

## 1.2 The PennSEF Program.

The RSLPP and this RFP is being undertaken in connection with each municipality's participation in the [Pennsylvania Sustainable Energy Finance \("PennSEF"\) Program](#). The PennSEF Program, administered by FREE in collaboration with the Pennsylvania Treasury Department, provides pooled bond financing for projects that qualify under the Act and also provides assistance to program participants in connection with procurement and contracting under the program. This RFP is issued in reliance on the procurement provisions of the Act. After evaluation of Respondents' submissions in accordance with the criteria set forth herein, the Municipalities will make a preliminary selection of one Respondent to prepare and submit a preliminary energy audits to each participant ("**Preliminary Audit**") in accordance with Appendix F. However, the program will be identifying a single ESCO to serve the entire program in order to achieve bulk pricing and economies of scale through design and installation services. The municipalities expect to make a final selection as a group based on their review of the Preliminary Audit Report they receive, and will make public the Preliminary Audit Report of the selected Respondent if one is selected.

Each Respondent that submits a Preliminary Audit shall also submit (on a confidential basis to the extent requested) data which the municipality reasonably requests to permit it to analyze the guaranteed savings and the costs that are included by the Respondent in its response. The categories of costs include, but are not limited to equipment costs and installation costs by lighting measure, measurement and verification costs, and administrative costs for the project as a whole. Any Preliminary Audit submitted by a Respondent, together with any data submitted pursuant to this paragraph, becomes a part of its Response.

## 1.3 Overview of Whole-program Services

The successful Respondent will be expected to coordinate several whole-program services, as per each municipality's GSA. These whole-program services include:

- Utility Bill Update process: While this process will take place within each individual municipality, the primary utility company serving this program (PECO) has requested that the RSLPP coordinate the bill update process holistically to ensure an expeditious update of the bills that aligns with their data management capabilities. As such, the RSLPP will coordinate a working group with the RSLPP participants, the selected ESCO, and PECO to develop a strategy to ensure successful bill updates occur in this program.
- Participate in Needs Assessment workshop(s) hosted by the RSLPP (anticipated that there will be up to four workshops hosted). These workshops will provide an overview of the data and project-level information that municipalities will need to gather to make the Preliminary Audit phase successful.
- Installation schedule: Each individual GSA will include a Construction and Installation schedule. Each GSA will also include a whole-program Construction and Installation schedule that is developed in cooperation with the RSLPP to ensure equitable, expeditious, and reasonable installation schedules across the program.
- Installation contractors: As the installation contractors are identified for the program and reflected in final IGA schedules for each municipality, the ESCO will coordinate with the RSLPP in identifying a team of installation contractors that meets the needs of the program. This coordination will include a discussion of the feasibility and cost impact of: 1) use of

municipal in-house contractors when desired; 2) use of municipalities' preferred installation and maintenance contractors when desired. For purposes of responding to the RFP, ESCOs are asked to comment on feasibility and cost impact of items 1) and 2) above. There has been no decision yet on this matter and therefore comments are welcome.

- The ESCO will participate in consistent project status meetings with municipalities and their support resources (RSLPP, KLS, PennSEF), as per each individual GSA. In some cases, the RSLPP will request whole-program status meetings for updates on:
  - Project status to date
  - Identified issues and proposed resolutions
  - On-going review of project changes
  - Updated installation schedule

#### **1.4 Overview of Preliminary Audit Stage**

##### **RSLPP Data Transfer:**

The RSLPP will provide the ESCO with the following previously obtained information:

- On behalf of program participants, DVRPC has developed an inventory of streetlights (wattage, type, count) installed in each participating municipality that was developed using a copy of each participating municipality's most recent utility street lighting bill provided to DVRPC. This inventory is listed as Appendix B of this RFP. This inventory will serve as a starting point for Respondent's proposals and the preliminary audit discussions with each participating municipality. There is potential for the inaccuracy of utility company records, and as such the inventory provided in Attachment B will need to be verified and/or corrected by the IGA performed by the ESCO selected for the program. DVRPC will also deliver additional supplementary information gathered from participating municipalities, such as the existence of or desire to consider the retrofit to decorative fixtures, the wish to consider adaptive controls, the wish to retrofit traffic signals or other outdoor area lighting (parking and rec).
- Separate Excel spreadsheets will be provided for all PECO customers participating in the program to the successful respondent (DVRPC will serve as the liaison between PECO and the successful respondent). This spreadsheet will be used for all bill update purposes throughout the duration of the program.

##### **ESCO responsibilities under Preliminary Audit Phase**

In this phase the ESCO will be expected to conduct the following steps and provide the following whole-program deliverables:

- Participate in Needs Assessment workshop(s) hosted by the RSLPP (anticipated that there will be up to four workshops hosted). These workshops will provide an overview of the data and project-level information that municipalities will need to gather to make the Preliminary Audit phase successful.
- In this phase the ESCO will be expected to conduct the following steps and provide the following deliverables with each municipality:



- Review submitted RFP Pricing Matrix (submitted by the successful respondent in response to this RFP) as a baseline for the project scope
  - Successful Respondent will coordinate with each participating municipality on whether existing utility bill data requires modification. Municipality should confirm or modify inventory data if possible and if applicable.
- Identify and confirm electric utility rates and structure
- When applicable, confirm that the municipality has determined the cost and process associated with the purchase of luminaires from the utility
- Identify municipality lighting ordinances that would impact ESCO proposals
- Design of LED lighting system on a one-for-one replacement of existing street light luminaires.
- Solicit additional lighting upgrade requests which could include additional lighting applications with different fixture types than those considered in the original RFP and possible re-design opportunities with cobrahead street lighting. Additional upgrade requests may include decorative post top fixtures, outdoor area lighting, wall packs, and traffic signals.
  - Municipality to supply all required information for the above requests
  - Identify any requirements for pilot installations
- Solicit additional modifications to street lighting system design, such as revised pole spacing or mounting height (when possible), adjusted illumination levels, removal of fixtures). Modifications to street lighting design will only be included if their inclusion still allows for the savings guarantee under this project.
- Review network control strategies, costs and benefits
  - Municipality to indicate their preferences for controls to be included in project
- Identify municipality preferences, if any, for recycling of used luminaires and components
- Prepare and deliver a Preliminary Audit Report that, at a minimum, includes:
  - Overview of CMs in project scope
  - Specified luminaires and controls
    - Based on information provided by the municipalities, the ESCO may be asked to provide photometric analysis of “typical” applications
  - Project costs (using the same format as the RFP product & pricing matrix)
  - Project savings
    - A separate report of savings by fixture type per unit to be used in the future guarantee of savings used in the IGA phase
  - Project cash flow report including PennSEF financing that shows no required outlay
  - Firm quotation of IGA-related costs for items not included in the original RFP scope

The municipality will review the ESCO Preliminary Audit Report and consult with RSLPP, PennSEF, and KLS. The municipality will then make a final decision whether to enter into a GSA and continue on to the Investment Grade Audit (IGA) phase. The Respondent selected by the municipalities will be required to use PennSEF’s standard GSA form, which is attached to this RFP as Appendix A. A Respondent may suggest modifications to the standard GSA form in accordance with Section 2.5 below; however, no modifications will be made to the form of GSA

without approval by FREE. The municipalities expect to make a final selection as a group based on their review of the Preliminary Audit Report they receive, and will make public the Preliminary Audit Report of the selected Respondent if one is selected.

If the municipality continues on with the IGA phase and the ESCO delivers savings on a per unit basis of 90% or greater, it is expected that the Municipality will ultimately proceed with financing and construction phase. If an IGA is delivered that does not meet the 90% savings requirement, the municipality is not responsible for the costs of the IGA. If the municipality does not proceed with a GSA at the end of the IGA phase when the IGA meets the 90% requirement, they may be responsible for part or all of the ESCO's IGA costs. ESCO will define the IGA costs and breakage fee as per the RSLPP ESCO RFP Pricing Matrix defined below in section 3.10.

### **1.5 Services of Successful Respondent**

The Respondent selected by the municipalities will be required to use PennSEF's standard GSA form, which is attached to this RFP as Appendix A. A Respondent may suggest modifications to the standard GSA form in accordance with Section 2.5 below; however, no modifications will be made to the form of GSA without approval by FREE.

The selected Respondent will be required to deliver payment and performance bonds in the amount of the contract price for construction of the CMs under each municipality's GSA.

The selected Respondent shall provide complete turn-key services, developing the engineering designs and specifications necessary to implement the CMs, managing the project through installation, and providing annual reports on savings achieved throughout the contract period. The selected Respondent will also be required to provide a performance guarantee – a contractual commitment to each municipality that project implementation will result in a specified reduction in energy (and/or water use and/or reduction in wastewater) over a set period of years. This guarantee, when translated into dollars based on existing and projected utility rates, will offset annual debt service on the project financing. If in a given year the guaranteed reduction in energy, water or wastewater use is not achieved due to a failure attributable to Respondent such Respondent will be required to reimburse the Owner the resulting dollar savings shortfall.

To ensure actual savings, the selected Respondent will provide monitoring and verification (“**M&V**”) of installed CMs. M&V activities include assessing that equipment is performing to specifications and performing calculations of the actual energy or water savings resulting from the implementation of the Project. The Respondent selected by the Owner is required to share designated data with the Owner and FREE. These requirements will be defined in the GSA.

The services to be provided by the Respondent will include the following:

#### **Investment Grade Audit**

The ESCO will conduct the following activities for the RSLPP whole program during the Investment Grade Audit Phase. These whole-program services will be reflected in each individual GSA:

- Using an aggregated bill of material including all requested municipality fixtures and controls, negotiate product pricing. While the procurement will occur after IGA, the BOM will need to be constructed throughout the IGA phase as construction and implementation schedules are finalized with each municipality.
  - The ESCO agrees to supply the RSLPP with the aggregated BOM and the RSLPP reserves the right to provide the ESCO with a separately qualified and negotiated product a package, to which the ESCO can apply the documented handling % identified in this RFP response.
- Working with the RSLPP, the successful Respondent will identify an installation team that is approved by participating municipalities. This coordination will include a discussion of the feasibility and cost impact of: 1) use of municipal in-house contractors when desired; 2) use of municipalities' preferred installation and maintenance contractors when desired. There has been no decision yet on this matter. Additionally, the successful respondent will work with the RSLPP to develop a whole-program installation schedule and process.
- Coordinate bill-update process of updates in billing and rebates with the municipality's respective electric distribution company, if applicable. Updates will reflect retroactive corrections to currently installed street lighting system in the case of an existing inaccuracy in billing, and will reflect the changes made to each municipality's respective inventory of streetlights as they are retrofitted through this project;
- Manage process for submitting Act 129 rebates with utility

The ESCO will conduct the following activities for each municipality, using the SOW outlined in each municipalities Preliminary Audit as a starting point:

- Conduct a field audit and, using a spreadsheet provided by the RSLPP, provide a database of all luminaires within the identified project scope including, but not limited to, the attributes listed below. The successful Respondent will be required to share this field audit data with the RSLPP, including the municipalities, DVRPC, Keystone Lighting Solutions, and FREE. A comprehensive list of all possible data points is provided below:
  - Pole Information
    - Utility Pole ID
    - Asset ID number
    - Street Location (nearest street intersection or street address)
    - GPS location (latitude and longitude coordinates)
    - Pole Type (i.e. Wood, Steel, Aluminum, Fiberglass)
    - Pole Color
    - Pole Height
    - Pole Diameter
    - Pole Condition,
    - Pole mounting height (vertical distance from pavement to luminaire) and
    - Electricity feed (overhead or underground)
    - Pole spacing
  - Luminaire Information
    - # of Luminaires/Pole

- Style (i.e. cobrahead)
- Luminaire Size
- Lens Type (clear/flat, clear/sag, prismatic, other)
- Color
- Distribution Type
- Lamp Technology Type (e.g. HPS, MV, MS, MSPS, etc.) and wattage
  - if a standard ANSI C136.15 external label is available, this will be provided in lieu of lamp type
- Ballast Type
- Nominal line voltage to luminaire
- Arm length (horizontal distance from pole to luminaire)
- Mounting Height (ground level to bottom of luminaire)
- If available, fixture manufacturer, model number
- Site Conditions
  - Obstructions to light distribution (i.e. trees)
  - Separate photos of the pole identification tag, the pole and the luminaire
  - Additional photos may be taken to identify special conditions such as obstructions, non-standard spacing, etc.
- Design of LED lighting system on a one-for-one replacement of existing street light luminaires and/or when requested by the municipality to meet identified performance standards
- Design and engineering of lighting upgrade requests which could include additional lighting applications with different fixture types than those considered in the original RFP and possible re-design opportunities with cobrahead street lighting. Additional upgrade requests may include decorative post top fixtures, outdoor area lighting, wall packs, and traffic signals.
- Additional photometric modeling when it supports re-design proposals (i.e. lower lumen output or fixture quantity reduction) showing all photometric assumptions and performance consistent with IES LM-50 illuminance, uniformity and glare/BUG rating requirements
- Design and engineering of additional modifications to street lighting systems, such as revised pole spacing or mounting height (when possible), adjusted illumination levels, removal of fixtures) that achieve energy savings according to individual municipal request. Designs should incorporate each municipality's request to remove fixtures, de-illuminate, or add additional poles and luminaires, if requested. (Additional poles and luminaires will only be included if their inclusion still allows for the savings guarantee under this project).
- If desired, pilot-testing of the selected CMs
- Coordinate the timing and details of updates in billing and rebates with the municipality's respective utility company and electric distribution company, if applicable. Updates will reflect changes in billing wattages as a result of fixture retrofits, updates to services location distribution charges if consolidations take place, and retroactive corrections to currently installed street lighting system in the case of an existing inaccuracy in billing, and will reflect the changes made to each municipality's respective inventory of streetlights as they are retrofitted through this project.

- Prepare and deliver an Investment Grade Audit Report in accordance with the GSA. In summary, the IGA report will include
  - Final Project Scope of Work (ECMs)
  - Final Installation Schedule
  - Final M&V Plan
  - Final Pricing for Materials and Installation
  - Final Lease Payment Schedule

### **Construction/Implementation**

The ESCO will conduct the following whole-program activities for the Construction/Implementation phase:

- Develop a “Whole Program” Implementation Schedule in coordination with the RSLPP team and participating municipalities.
- Consistent project status meetings with municipalities and their support resources (RSLPP, KLS, PennSEF)

The ESCO will conduct the following activities for each municipality in this phase:

- Pre-Construction Activities
  - Convene a pre-construction meeting
  - Obtain all required permits
  - Bulk equipment procurement and purchasing in accordance with the specification outlined in this RFP
- Construction Activities
  - Transport of all equipment, labor, consumables and materials to and from the job site;
  - Installation of the selected CMs in accordance with an established installation schedule as per the GSA;
  - On-site construction management and inspection services;
  - Consistent project status meetings with municipalities and their support resources (RSLPP, KLS, PennSEF)
    - Project status to date
    - Identified issues and proposed resolutions
    - Requests for support
    - On-going review of project changes
    - Updated installation schedule
  - Disposal of removed materials and construction waste management in compliance with all local, state and federal requirements, including material separation and recycling hazardous waste disposal or recycling for mercury vapor lamps and ballasts;
- Project Close-Out Activities
  - Finalize of updates in billing and rebates with the municipality’s respective electric distribution company, if applicable. Updates will reflect retroactive corrections to currently installed street lighting system in the case of an existing

- inaccuracy in billing, and will reflect the changes made to each municipality's respective inventory of streetlights as they are retrofitted through this project;
- Manage process for obtaining Act 129 rebates with utility

### **Commissioning/Guarantee/Monitoring Phase**

In this phase the ESCO will be required to provide the following services:

- Functional testing and commissioning of CMs;
- Continuing operations and maintenance for all or selected CMs (if part of ESCO obligation under GSA or other agreement);
- Full manual of cut sheets, service information, and retro-commissioning standards;
- Management of warranty claims for installed products
- Staff training on routine maintenance and operation of systems may be requested depending on each municipality's needs.
- Staff training on installed control system, if applicable
- Savings guarantee ; and
- Monitoring and verification for measurement and reporting of the performance (i.e. illumination levels) and savings from CMs for the duration of the financing.

The RSLPP anticipates **bond financing in Spring 2016**. To do this, the RSLPP has developed the following indicative schedule for the program:

- Data Transfer and Needs Assessment Workshops: 1 week from ESCO selection
- Preliminary Audits: 1 month after Data Transfer completed
- Investment Grade Audit/Pre-development/Financing: 3.5 months after Preliminary Audits completed

### **1.6 RFP Documents.**

Each Respondent should inspect its copy of the RFP to ensure that a complete set of the documents, including the appendices, is included. All required items set forth in Section 2 of this RFP must be submitted. If a Respondent discovers that its copy of the RFP is incomplete, it should immediately contact DVRPC at the above address. DVRPC will make appropriate and reasonable arrangements on behalf of the participating municipalities and with the Respondent to provide any missing items. A Respondent must prepare its Response using a complete RFP, including any addenda issued by DVRPC on behalf of the participating municipalities prior to the date established for submission of the Response. None of DVRPC, the Municipalities, its agents or employees will be responsible for errors, omissions, incomplete submissions or misinterpretations resulting from the Respondent's use of an incomplete RFP in preparing or submitting its Response.

This RFP has been made available only for the purpose of soliciting Responses related to the GSA. No license or grant is conferred or implied to the Respondent or to any other person for any purpose.

**1.7 RFP Addenda.**

During the period provided for the preparation of Responses, DVRPC, on behalf of the municipal participants, may issue addenda or amendments to this RFP. These addenda will be numbered consecutively and will be distributed to each Respondent that has requested and received RFP package. Each Respondent is required to acknowledge receipt of all addenda at the time of submission of the Response by submitting an executed acknowledgement in the form attached hereto as Appendix C. All Responses to this RFP shall be prepared with full consideration of the addenda issued prior to the Response submittal date.

**1.8 Anticipated Selection Schedule.**

The Selection Team for this RFP will include 1) representatives from each of the four county-level consortiums who represent the municipal participants in this program; 2) additional municipal representatives from the RSLPPs Technical Development Committee.

Issuance of RFP .....	October 16 <sup>th</sup>
Pre-Response Meeting .....	October 27 <sup>th</sup>
Deadline for Receipt of Written Questions.....	October 30 <sup>th</sup>
Deadline for Receipt of Responses (2:00 p.m. EST).....	November 17 <sup>th</sup>
Respondent Interviews.....	December 2 <sup>nd</sup>
Preliminary Selection of Respondent.....	December 4 <sup>th</sup>
Final Selection of Respondent .....	Anticipated February 2016

**2. GENERAL INFORMATION AND INSTRUCTIONS FOR PREPARATION AND SUBMISSION OF RESPONSES.**

**2.1 General Information.**

The 45 municipalities participating in the RSLPP share a set of common goals and objectives for the outdoor lighting upgrade project they aim to achieve through this program:

- Conversion of existing HPS, MV, Incandescent, MH fixtures to more energy-efficient, higher performing and longer-lasting LED fixtures.
- Minimizing future maintenance and operating costs incurred by the municipality. Though maintenance cost savings are not documented through this program, municipalities recognize the significant savings that will be achieved by the longer lifespans and higher quality of LED streetlights.
- Compliance with lighting standards, improved energy efficiency and aesthetics.
- Reductions in streetlight energy bills.
- In many cases, municipalities desire to implement networked control and monitoring/asset management system.
- In many cases, municipalities wish to consider the relamp of existing incandescent traffic signals or replacement of LED traffic signals that have reached the end of their useful life.
- In many cases, municipalities desire to replace existing parking, recreational, decorative, floodlighting and wallpack luminaires with new LED luminaires.

- This is a *regional* project and selected ESCO will work to make sure that all participants benefit from the services provided through this program.

Municipalities are interested in contracting for CMs that relate to upgrades to outdoor lighting systems, including street and roadway lighting, traffic signals, parking lot lighting, and recreational lighting. Respondents must have the capability to consider, design, procure, and implement a range of lighting CMs, including, but not limited to:

- Outdoor area lighting and controls:
  - LED roadway luminaire applications including the lamps, fixtures, and adaptive wireless controls and monitoring systems
  - LED traffic signals
  - LED and other high-efficiency lighting applications in parking lots, recreational fields, and other outdoor area lighting applications.
  - Evaluation of existing system functionality for improvements through removal of fixtures, adjustment of illumination levels, consolidation of “taps” or other improvements to the system’s infrastructure that would result in energy conservation.
- Energy Purchasing, Bill Adjustments, and fixture procurement
  - A program to reduce energy costs through rate adjustments, changes to more favorable rate schedules, negotiation of lower rates, auditing of energy service billing for outdoor lighting systems being evaluated through this program.
  - Working with investor owned utility companies and electric distribution companies on bill updates and rate adjustments to reflect past or present changes in installed technology.
  - Coordination of rebates with the municipality’s respective investor owned utility.
  - Coordination of purchasing of streetlights in municipalities that do not currently own their street lighting systems (as shown in Appendix B, this represents three participating municipalities)

## 2.2 Submission of Responses.

Responses shall be submitted to DVRPC on behalf of the municipalities participating in the Regional Streetlight Procurement Program on or before 2:00 p.m. E.S.T. on November 17th, 2015. Electronic responses must be sent to Liz Compitello, [ecompitello@dvrpc.org](mailto:ecompitello@dvrpc.org) and copied to John Griffies, [jgriffies@dvrpc.org](mailto:jgriffies@dvrpc.org). Print responses must be enclosed in an opaque, sealed envelope or box:

- (1) addressed to:

Liz Compitello  
Senior Research Analyst  
Delaware Valley Regional Planning Commission  
190 N. Independence Mall West, 8th Floor  
Philadelphia, PA 19106-1520



(2) bearing the name and address of the Respondent written on the face of the envelope or box; and

(3) clearly marked “Response to Request for Proposals for Guaranteed Savings Agreements, Regional Streetlight Procurement Program”.

One original copy of the Response with the signature of an authorized representative of the Respondent and nine (9) copies, and one scanned digital copy of the Response in searchable PDF format on a compact disk or flash drive shall be submitted to DVRPC. Any forms to be completed provided in MS Excel format should be completed and returned in MS Excel format. The original shall be unbound. Delivery shall be by hand delivery, certified mail/return receipt requested or overnight courier.

All Responses submitted will remain unopened until the specified deadline for receipt of the Responses. Any Response or portions thereof that are submitted and received after the specified deadline will be marked “received late” and will be returned unopened to the Respondent submitting it.

The delivery of the Response to the DVRPC on behalf of municipalities on the above date and prior to the time specified herein is solely the responsibility of the Respondent. DVRPC will not under any circumstances be responsible for the loss of, delay or non-delivery of any Response sent or delivered, by mail or otherwise, prior to opening the Response.

### **2.3 Obligation to Enter into GSA.**

A Respondent finally selected by the collective group of municipality and upon approval of the individual GSA by each municipality pursuant to this RFP after review and acceptance of its Preliminary Audit must execute the GSA.

### **2.4 Pre-Response Meeting.**

A pre-Response meeting (the “**Pre-Response meeting**”) will be held for the benefit of all potential Respondents by DVRPC and the Municipalities on October 27th, 2015. The Pre-Response Meeting will begin at 9:00am, at the Delaware Valley Regional Planning Commission (190 N. Independence Mall West, Philadelphia, PA 19106). A call-in option will be made available upon request (click [here](#) to e-mail Liz Compitello to request a call in option). Potential Respondents are strongly encouraged to take part in the Pre-Response meeting. Respondents are also encouraged to have, at a minimum, the persons responsible for coordinating the technical components of any Response in attendance at the Pre-Response Meeting. A summary from the Pre-Response Meeting will be issued as an addendum, via electronic mail/and posted on DVRPCs website, which must be noted on the Acknowledgment of Addenda form attached hereto as Appendix C.

### **2.5 Questions/Clarifications Request.**

Questions or suggestions relating to this RFP, the GSA or the outdoor lighting systems may be submitted in writing by e-mail and/or fax to each of the following people for receipt by no later

than October 30<sup>th</sup>, 2015. Submission of questions by e-mail is strongly preferred.. When submitting a question by e-mail, please use the subject line “RSLPP RFP Question.” Respondents accessing this RFP electronically may click [here](#) to e-mail:

Liz Compitello, Senior Research Analyst  
Delaware Valley Regional Planning Commission  
190 N. Independence Mall West, 8th Floor,  
Philadelphia, PA 19106-1520 Email: [ecompitello@dvrpc.org](mailto:ecompitello@dvrpc.org)  
Fax: 215-592-9125

Respondents are instructed to notify the individual listed above of (a) any material information and/or lack of material information provided or omitted with respect to this RFP that it believes is not accurate and/or correct and (b) all conflicts, errors or discrepancies in this RFP, within forty-eight hours of their receipt of this RFP.

The form of GSA has been developed for the PennSEF Program, and no modifications will be made to the form of GSA without approval by FREE.

DVRPC, the municipal participants and their consultants will not be responsible for any failure to receive and/or respond to any questions submitted.

## **2.6 Cost of Preparation.**

Each Response and all information required by this RFP will be prepared at the sole cost and expense of the Respondent.

## **2.7 Site Familiarity.**

It is the responsibility of each Respondent before submitting a Response to (a) examine this RFP thoroughly, (b) become familiar with and consider all federal, state and local, and utility-related laws, regulations, ordinances, procedures, permits, approvals and orders that may affect the cost, installation, timeline, performance or furnishing of the GSA and the proposed CMs, (c) become familiar with the inventory of streetlights presented as (Appendix B), and (d) become familiar with the local utility’s tariff for street lighting service, the local utility’s processes for updating bills to either reflect inaccuracies in their existing inventory or to reflect updates to the street lighting system as a result of previous activities by the municipality or activities that take place through this program, the local utilities process with selling and transferring ownership of streetlights to municipalities, and obtaining Act 129-related rebates for all eligible equipment purchased through this program. All as it deems necessary to fully inform itself about any material or relevant factors, including ecological, environmental and relevant legal, economic, sociological or regulatory facts or circumstances, as well as factors that may affect performance and proposal prices, relating to the GSA, the proposed CMs and/or its Response.

Before submitting a Response, each Respondent shall, at its own expense, make or request or obtain any additional examinations or studies and obtain any additional data and information that may affect its cost, progress, performance or furnishing of the services that the Respondent deems necessary to compile its Response. Access to each participating municipality’s street lighting or other outdoor area lighting system for additional inspections is not contemplated by

the municipal participants prior to preliminary selection of a preferred Respondent. The failure or omission of the Respondent to receive and examine any form, instrument or document, or to make required inquiries, will not relieve the successful Respondent from any obligations and responsibilities relating to the GSA and the proposed CMs.

As part of a Respondent's Response, a Letter of Intent, fully executed by the Respondent's principals, must be included, in the form of the Letter of Intent set forth in Appendix D of this RFP.

## **2.8 Disclosure of Information.**

If the Respondent chooses to include material of a proprietary nature in the Response, DVRPC will use reasonable efforts to keep such material confidential to the extent permitted by applicable law. The Respondent must specifically identify each page of its Response that contains such information by properly marking the applicable pages as containing proprietary information. Preferably, any sections that contain material of a proprietary nature shall be severable or removable from the Response to assist DVRPC in protecting this information. The Respondent also shall include the following notice in the introduction of the relevant Response:

*The data on pages \_\_\_ identified by \_\_\_ and labeled "Proprietary Information," contain information that is a trade secret and/or which, if disclosed, would cause substantial injury to [Respondent's] competitive position. [Respondent] requests that such data be used only for the evaluation of the Response, and understands that disclosure will be limited only to the extent that DVRPC determines it proper or to the extent that DVRPC deems disclosure necessary according to law."*

DVRPC assumes no liability for any loss, damage, or injury that may result from any disclosure or use of marked data or any disclosure of this or other information.

Any information provide by a Respondent, whether or not designated as confidential, may be shared with FREE, FREE's consultants, DVRPC, Keystone Lighting Solutions, and members of the RSLPP to permit them to provide assistance through the PennSEF Program.

DVRPC reserves the right to place any Responses on public display and/or make Responses available for public review.

N.B.: all of the above provisions are subject to the DVRPC's obligations to comply with Pennsylvania's Right-to-Know Law, 65 P.S. § 67.101, et. seq.

## **2.9 Withdrawal.**

A Respondent may request withdrawal of its Response prior to the specified deadline for receipt of the Responses, provided that a written request to withdraw the Response is hand delivered to DVRPC, by or on behalf of, an authorized representative of the Respondent, or the request is delivered by certified U.S. mail. The request to withdraw the Response must be received by the

DVRPC prior to the specified deadline for receipt of the Responses. While DVRPC will seek to honor such withdrawal request, DVRPC shall incur no liability for failure to do so.

### **2.10 Disposal of Responses.**

Following the conclusion of the selection process, DVRPC shall dispose of any and all copies of responses by DVRPC pursuant to this RFP in accordance with the state records management manual promulgated by the Commonwealth of Pennsylvania, Historical and Museum Commission. In no event will DVRPC have any liability for any loss, damage or injury that may result from any disclosure or use of marked proprietary information or data.

## **3. CONTENTS OF RESPONSE.**

All Responses must be submitted complete with all requested information and are to be in conformance with the instructions set forth herein and as required by subsequent addenda, if any.

### **3.1 Completeness.**

Each of the instructions set forth in this RFP must be followed in order for a Response to be deemed responsive to this RFP.

### **3.2 Form.**

The Respondent shall provide the appropriate information required for each Section in accordance with the following content and format requirements.

- The response documents shall be submitted in two forms:
  1. Electronically on CD or flash drive.
  2. Print hard copy
- Ten (10) copies in print/hard copy form must be submitted.
- Each volume and all related information shall be bound as a single document. One of the copies shall be unbound. If this is impractical, an exhibit document accompanying the volume may be submitted.
- The responses shall be concise, clear, factual and complete with a minimum of extraneous material.
- The Response shall be indexed and sectioned and shall be prefaced with a table of contents.
- The response documents shall be typed or printed on 8-1/2" x 11" paper.

### **3.3 Organization.**

Responses submitted in response to this RFP shall consist of the following:

Section I	Executive Summary; Letter of Intent; Acknowledgment of Addenda; List of Submitted Items (pursuant to Section 3.4)
Section II	General Information (pursuant to Section 3.5)
Section III	Certification of Meeting Minimum Requirements (pursuant to Section 3.6)
Section IV	Financial Qualifications (pursuant to Section 3.7)
Section V	Technical and Project-Related Qualifications including (pursuant to Section 3.8)
Section VI	Implementation Plan (pursuant to section 3.9)
Section VII	Scenario Exercise and Pricing and Plan that includes indicative pricing for luminaires, controls, equipment, and services provided (pursuant to section 3.10)
Section VIII	M&V proposal in accordance with Section 3.11
Section IX	Organizational Approach (pursuant to Section 3.12)
Section X	Supplemental Information (pursuant to Section 3.13)

### **3.4 Executive Summary; Letter of Intent; Acknowledgment of Addenda; List of Submitted Items.**

Section I of the Response must contain the Respondent's Executive Summary, Letter of Intent, in the form of Appendix D of this RFP, and Acknowledgment of Addenda (on the Respondent's official letterhead, in the form attached hereto as Appendix C). The Executive Summary must summarize all key points of the Response.

Section I of the Response must also contain a list of the items required to be submitted with the Response, in the form of Appendix E, with each item initialed by the Respondent to indicate that the Respondent has included those items with the Response.

### **3.5 General Information.**

Section II of the Response must contain the following information set forth in the following order:

(1) A description of the Respondent, including the company name, address, telephone number, fax number (if available), email address(es), and company website (if available). If the Respondent has multiple offices, the description of the Respondent shall include information about the location of the parent company and any and all branch offices from which projects could be managed.

(2) The Respondent's form of ownership, including state of residency or incorporation, and number of years in business as an energy service company or provider. For joint venture entities that have not undertaken at least two (2) guaranteed energy savings performance contract projects together as a joint venture, this information shall be submitted for each Respondent separately.

(3) A brief description of the history and growth of the Respondent including general information about the Respondent's personnel resources, including disciplines and numbers and classifications of employees, and locations and staffing of the offices from which project could be managed. Indicate the number of guaranteed energy performance contracting projects implemented by the Respondent.

(4) A description of any event where the Respondent has been declared in default on any guaranteed energy performance contracting projects in the five (5) years immediately prior to the submittal of the Response.

(5) A disclosure and discussion of any litigation, mediation, arbitration, or administrative proceedings related to guaranteed energy performance contract projects in which the Respondent has been involved in the five (5) years immediately prior to the submittal of the Response including but not limited to litigation, mediation, arbitration, or administrative proceedings with owners and/or architects. List and give brief explanation of all active or pending litigation related to guaranteed energy savings performance contract projects.

(6) Indicate whether the Respondent is currently a member of and/or accredited by NAESCO. Respondents are not required to be accredited by NAESCO, but NAESCO-accredited Respondents will receive additional consideration.

### **3.6 Certification of Meeting Minimum Requirements.**

Section III must contain a certified sworn statement by an individual possessing the authority to bind the Respondent asserting that the Respondent meets the minimum qualifications required to be prequalified for these services. The signed and notarized certification shall state as follows:

(1) The Respondent certifies that neither it nor its principals are currently ineligible, debarred, suspended, or otherwise excluded from bidding or contracting with the Commonwealth of Pennsylvania, any other state, the federal government, or any agency, subdivision, department, or authority of the foregoing.

(2) The Respondent certifies that neither it nor its principals have been terminated for cause, are currently in default, and/or have been declared in default on any public works contract or guaranteed energy savings performance contract within the five (5) years preceding the submittal of its Response.

(3) The Respondent certifies it has or will have bonding capacity for jobs up to \$\_[Respondent to specify]\_. The Respondent further certifies that the surety that will underwrite the required bonds is on the most recent U.S. Treasury Listing of Approved Sureties and has an A.M. Best rating of A-or better, an A.M. Best Financial Class Size of V or higher, and is licensed to do business in the Commonwealth of Pennsylvania.

(4) The Respondent certifies it has a current Commercial General Liability (CGL) Insurance policy and is insurable in following minimum coverage amounts: (i) bodily injury, including death, limits of one million dollars (\$1,000,000) for each accident, (ii) property damage limits of two million dollars (\$2,000,000) for each accident and (iii) ten million dollars (\$10,000,000) for the aggregate of operations, and will be able to obtain builder's all-risk insurance for the construction of the CMs.

(5) The Respondent certifies it has a current Professional Liability (Errors and Omissions) Insurance policy for design professionals, consulting engineers and architects, and all other applicable consultants with the minimum coverage of one million dollars (\$1,000,000) per claim.

(6) The Respondent certifies it has all necessary, valid and current licenses to do business in the Commonwealth of Pennsylvania.

(7) The Respondent certifies it has demonstrated a commitment to safety with regard to Worker's Compensation by having an Experience Modification Rate (EMR) over the past three (3) years of 1.2 or less.

(8) The Respondent certifies it has completed no fewer than ten (10) guaranteed energy savings performance contract projects within the last ten (10) years and that each of these projects has a minimum of one (1) year repayment and savings performance history.

(9) The Respondent certifies that no official or employee of Keystone Lighting Solutions, the Commonwealth of Pennsylvania, FREE, Drinker Biddle & Reath LLP, Becker Capital or other subcontractors hired by FREE expressly to assist FREE in the development of the PennSEF Program, nor any business entity in which an official of the Commonwealth of Pennsylvania, FREE, Drinker Biddle & Reath LLP, Becker Capital or other subcontractors hired by FREE expressly to assist FREE in the development of the PennSEF Program has an interest, has been employed or retained to solicit or aid in the connection with Respondent's Response, and that no such person will be employed by Respondent in connection with services provided to the PennSEF Program.

(10) The Respondent certifies that all information and documentation submitted with its Response is true and correct.

### **3.7 Financial Information.**

The Respondent must provide the following information in Section IV of the Response:

(1) A copy of the Respondent's audited financial statements for the most recent three (3) fiscal years prepared in conformity with generally accepted accounting principles including the balance sheet, income statements and statement of cash flows. The firm name, as well as the office address and telephone number of the individual who performed the audit of the financial statements must be included. The individual or firm must have been a certified public accountant at the time of the audit.

(2) Bonding references including bonding company name, address, contact person, telephone number and information on the Respondent's maximum bonding capability. The surety that will underwrite the bonds for the Respondent must be on the most recent U.S. Treasury Listing of Approved Sureties and must have an A.M. Best rating of A-or better, an A.M. Best Financial Class Size of V or higher, and must be licensed to do business in the Commonwealth of Pennsylvania. Attach documentation verifying listing with the U.S. Treasury, AM Best ratings, and registration with the Pennsylvania Insurance Commissioner's office. Provide a letter or other supporting documentation from a bonding company indicating the Respondent's capacity to bond projects under the PennSEF Program.

(3) The total value of all guaranteed energy savings performance contracts awarded to the Respondent during the previous three (3) years.

(4) A list of three financial references, including a banking reference, noting the name, address, and telephone number.

### **3.8 Technical and Project-Related Information.**

Section V of the Response must contain the Respondent's related technical experience. The Respondent must demonstrate its ability to undertake the construction of the street lighting and other outdoor area lighting CMs by providing the technical qualifications of the Respondent, principal subcontractors, and individual team members. The group of municipalities participating in this RSLPP reserves the right to conduct an independent investigation of the Respondent's and its subcontractors' technical qualifications by contacting references, accessing public information, or contacting independent parties. Additional information may be requested during the evaluation of technical qualifications. At a minimum, the Respondent must provide the following information to demonstrate its technical qualifications:

(1) A completed Project History Form in the form attached hereto as Appendix G and the LED Street Lighting and Outdoor Area Lighting Energy Savings Form in the form attached hereto as Appendix H for up to ten (10) guaranteed energy savings performance contract projects for street lighting implemented by the Respondent. Each of the projects must have a minimum of a one (1) year repayment history and savings performance. Each project must be currently managed or must have been managed by the specific branch, division, office, or individual that would be assigned to projects under the PennSEF Program. Client references will be contacted.

(2) A description of any projects where the Respondent has made payments to a client under the terms of the guaranteed energy savings performance contract as a result of not meeting the guaranteed energy savings.



(3) Provide a sample Savings Measurement and Verification Plan from a completed guaranteed energy savings performance contracting project for an LED street lighting, which includes a proposal for Option B M&V implemented by the Respondent including an estimate of the total number of measurement points currently being monitored by the Respondent for that project.

(4) Provide a sample Investment Grade Energy Audit for a street lighting system conducted by the Respondent which includes detailed energy and economic calculations.

(5) Provide a sample Operations and Maintenance Manual for an LED street lighting system developed by the Respondent.

(6) Provide a sample Commissioning Plan from an LED street lighting project implemented by the Respondent.

(7) Provide a sample Customer Savings Report from a guaranteed energy performance contract project for LED street lighting implemented by the Respondent.

(8) Provide three references from clients for whom the Respondent has provided similar projects, indicating whether the work was that of the Respondent and/or specific staff who will be assigned to the Project. Identify the client contact name, organization, type of work provided, and the contact's address, telephone number and e-mail (if applicable). Respondent must indicate whether any of these clients were public entities.

(9) Provide a narrative explanation that describe your ability and experience with modeling appropriate photometric performance of street lighting systems. Describe your approach and ability to design LED street lighting conversions to maximize energy savings and overall value.

(10) Provide a discussion of previous experience negotiating prices for program similar to the size and scope of the RSLPP. Discuss approach and results.

### **3.9 Implementation Plan**

Section VI of the Response must contain the Respondent's Implementation Plan. The Implementation Plan must provide

1. A detailed schedule for all phases of the project as a whole, including but not limited to the following.
  - a) All aspects of the project listed in section 1.4 and 1.5 of this RFP
  - b) Lead-time for product procurement
  - c) Anticipated equipment delivery date
  - d) Pilot phase
  - e) Construction start and completion by site or major area
  - f) Project walk through and punch list development
  - g) Project sign off
2. Organization and approach as it relates to implementation

- a) Describe the roles and organization of your proposed team for this project (including ESCO and all subs).
  - b) List facilities and equipment available to team members throughout the project.
  - c) Describe your project management approach. Provide a detailed description of how the team and scope of work will be managed for installation.
  - d) Describe the roles of key individuals on the team.
  - e) (Resumes and references for all team members should be provided). Resumes shall show relevant experience, for the Project's Scope of Work as well as the length of employment with the proposing Contractor. Key members, especially the project manager, shall have significant demonstrated experience with this type of project, and should be committed to stay with the project for the duration of the project (through construction at minimum).
3. Narrative of whole-project approach. Describe team's unique approach to the unique procurement and installation timelines required under this project. The narrative should include but not be limited to answering the following questions: How will the team be flexible and responsive to the needs and implementation schedules for multiple municipalities across a project area? How will the team approach pilot installations for LED fixtures to ensure all municipalities will be satisfied with fixtures ultimately purchased and installed through the program? How will the ESCO approach design and installation of additional measures such as controls, traffic signals, outdoor area lighting?

### 3.10 Streetlight Design and Pricing Plan

Respondents must submit a Streetlight Design and Pricing Plan. This plan will serve the following purposes for this program:

- Provided the basis to evaluate Respondents on the quality of LED street lighting design
- Serve as the baseline fixture and labor prices used throughout the duration of the project.
- The replacements that are proposed by the Respondent for this exercise will provide the basis for preliminary audit pricing for one-for-one replacement of existing streetlight cobrahead luminaires. The specification and corresponding Photometric Analysis templates and Product and Pricing Submittal worksheet were developed using the five categories of streetlights commonly found in Attachment B (derived primarily from municipality's streetlight utility bills).
  - The products listed in the Respondent's Worksheet may be amended in the preliminary audit and the investment grade audit as long as they meet or exceed the performance standards and are the same or lower than the pricing provided in the Respondent's Streetlight Design and Pricing Plan.

To complete the Streetlight Design and Pricing Plan, Respondents must use Appendix I, *Regional Streetlight Procurement Program Specification and luminaire designation scenario's* to develop following:

1. **Photometric Analysis Worksheet (forthcoming as Appendix K):** A photometric analysis worksheet must be completed for project designs for each luminaire designation scenario reflecting compliance with performance requirements. Photometric analysis

should be submitted in .PDF format with the file name clearly depicting which lighting application is represented. All files should provide a lighting statistics matrix showing separate calculation areas for Roadways, Sidewalk 1 and Sidewalk 2. Each calculation area will show the following statistics Fixture Type, Manufacturer and Model #, Initial Delivered Lumens, LLD, LDD, LATF, LLF (calculated from previous), Illuminance levels (Max, Min & Average), Uniformity Ratios (Max/Min, Average/Min & Max/Average), Max. veiling luminance ratio and surface reflectance. If any of the performance requirements for a given lighting application are not met, the photometric analysis must indicate those deficiencies and an explanation of why the proposed solution should be considered acceptable.

**Required to access worksheets: Worksheets are provided in PDF form as part of this RFP. (Photometric Analysis Worksheet is forthcoming) Respondent's must contact Liz Compitello for a copy of the Excel worksheet. Click [here](#) to e-mail:**

2. **Product and Pricing Submittal Worksheet (Provided as Appendix J).** The worksheet includes pricing for streetlights, equipment, design, and installation services provided for the project. For reference, the respondents should consider the inventory of streetlights provided as Attachment B for this Pricing Plan – the total counts from this inventory have been pre-populated into “Fixture Type Quantity.” Respondents must use the worksheet to provide required information for **each luminaire** proposed to meet the designation replacement that shows the luminaire complies with the minimum requirements of this specification and RFP. Note that the Respondent is not required to provide a single manufacturer for all fixtures and components that they identify in the worksheet.

**Required to access worksheets: Worksheets are provided in PDF form as part of this RFP. Respondent's must contact Liz Compitello for a copy of the Excel worksheet. Click [here](#) to e-mail:**

Respondents must also provide a narrative describing their unique approach to negotiating prices for the size and scope of the RSLPP. Elaborate on whether this procurement effort is capable of providing added value beyond standard approach, i.e. Total Cost of Ownership or other solutions that add value and transparency to the procurement process.

### 3.11 M&V Plan.

Section VIII of the Response must contain the Respondent's proposed M&V Plan for a minimum of two years of measured savings. The Plan must also contain Respondent's M&V planned activities for the length of the guarantee period. Respondent may offer more than one Plan. The cost of each plan proposed by the Respondent must be separately provided, including M&V Plan annual cost and any anticipated increase in lighting system cost which depends upon the Plan eventually selected by a Participant.

ESCOs must develop an M&V Plan for the project that is in accordance with the RSLPP approach outlined below:

RSLPP approach to M&V Plan:

1. The M&V Plan must measure each municipal project separately, reporting key technical performance metrics (defined below). The Plan provided in response to this RFP shall propose:
  - Method to Determine Baseline
    - Respondent shall describe in detail a proposed Plan to establish the baseline for determination of achieved savings. A preliminary baseline will be provided as part of the Respondent's submittal in reply to this RFP. The final baseline will be established during the IGA and must include electricity use measurements for a minimum of a 2% sample of the batch of each type of lighting system being removed. Respondent is to propose a method to establish run hours for fixtures to be replaced. Respondent shall propose a consultation process with Participants and outline the report which Participants, RSLPP and its experts will be provided. The Respondent shall describe its proposal to finalize the baseline.
  - Method for Post-Installation Wattage Measurement
    - Respondent shall describe the proposed sampling procedure and sampling rate for post-installation fixture wattage measurements. This proposal must comply with the procedures by FEMP M&V Guidelines for exterior lighting regarding relative precision level and confidence level. RSLPP expects a relative precision level of 10% and a confidence level of 90%.
  - Semi-Annual Inspection Reporting
    - Respondent shall describe the proposed sampling procedure and sampling rate of lighting fixtures to inspect annually. The proposed sampling plan shall include at least 10% of the total fixtures installed with no selected fixture having been selected in the prior two years of M&V activities. The Plan shall describe how lights will be visually inspected and a database will be created to report each Participant and to RSLPP and its experts the rates of failed ballasts, burnt out lamps, and lamp replacements that vary from installed conditions.
  - Annual Measurement Reporting
    - RSLPP requires the use of either or a combination of two post-installation methods to verify annual savings for the initial two years of the project: Option A with a minimum sampling rate of 2% of the batch of each type of installed lighting system in which design wattage is compared to actual wattage for each sampled bulb in the last month of each of 2 years of initial operation; Option B, when LED networked controls are installed, in which design wattage is compared to actual wattage of networked bulbs with a minimum measurement frequency of twice per year. The Plan shall describe how wattage and lumens measurements will be taken for a 2% sample when Option A is used or how a database shall be created and populated for LED systems with networked controls. The Respondent shall propose a method to determine run hours for measurements under either protocol. The Respondent may propose a combination of Option A and B measurements; the basis for use of a combination of the protocols shall be explained in the response to this RFP. Response to this section of the RFP shall describe the database and reporting to be provided to each Participant and to RSLPP and its experts.
  - Annual M&V Report

- Respondent shall propose a process for drafting the annual M&V Report and obtaining comment from Participants and from the RSLPP and its experts before issuing a final version of the report. Respondent will include detailed reporting of performance using RSLPP-specified technical metrics and economic indicators (see below). Respondent shall propose a detailed table of contents for its annual M&V report which spells out performance reporting.
2. Key technical performance metrics should include, but are not limited to:
    - a. Lumens directly below and at 5, 10 and 15 feet from fixture (pre- and post-installation)
    - b. Fixture kW and run hours (pre- and post-installation)
    - c. Fixture Lumens/Watt (pre- and post-installation)
  3. Each M&V Plan proposed by the Respondent must also report estimates of the following cost indicators:
    - a. \$/installed watt
    - b. M&V cost/installed watt
    - c. M&V cost/saved kWh
  4. Respondents are expected to provide initial estimates of cost indicators noted in 4. Based on street lighting projects completed by the company in the past five years.

The selection committee reserves the right to request additional information on each M&V Plan submitted by the Respondent.

### **3.12 Organization and Approach.**

Section IX of the Response must contain a narrative of the Respondent's Organization and Approach

#### **Organization and Approach**

- Describe the roles and organization of your proposed team for this project. Indicate the composition and number of project staff, facilities available and experience of your team as it relates to this project.
- Describe the roles and organization of your proposed subcontractors that will be part of the team for this project. Indicate the composition and number of project staff, facilities available and experience of your team as it relates to this project.
- Describe your project management approach. Provide a detailed description of how the team (including ESCO and all subs) and scope of work will be managed. Describe your ability and experience with modeling appropriate photometric performance of street lighting systems. Describe your approach and ability to design LED street lighting conversions to maximize energy savings and overall value to the Agency.
- Describe the roles of key individuals on the team (including ESCO and all subs). Provide resumes and references for all key team members. Resumes shall show relevant experience, for the Project's Scope of Work as well as the length of employment with the proposing Contractor. Key members, especially the project manager, shall have significant

demonstrated experience with this type of project, and should be committed to stay with the project for the duration of the project.

### **3.13 Supplemental Information to be Provided at Respondent's Option.**

The Respondent must include in Section X any other information that it deems relevant or useful for the Municipalities to consider in evaluating the Respondent's response. The Respondent should also include any concerns regarding the suitability of the Sites or any information or suggestions that the Respondent deems relevant to the Municipalities.

## **4. RESPONSE AND EVALUATION SELECTION.**

### **4.1 Evaluation Criteria.**

The Municipalities shall reject any Response:

- (1) from a Respondent that the Municipalities determine, in its sole discretion, will not be able to complete the construction of the CMs in accordance with the requirements of the GSA, including but not limited to requirements pertaining to experience, moral integrity, operating capacity, financial capacity, credit, and workforce, equipment, and facilities availability; or
- (2) that, in the Municipalities sole discretion, does not conform in all material respects to the requirements of this RFP.

The group of municipalities, unless it exercises its right to reject all responses, award the GSA to the one that submitted the Response that best meets the group of municipalities needs based on the follow criteria:

- Prequalification under the PennSEF Program
- Knowledge of and experience with municipal LED street lighting retrofit projects
- Knowledge of and experience with municipal outdoor lighting retrofit projects (including LED traffic signals and other LED outdoor applications such as parking lots and recreational lighting)
- History and financial strength of the Respondent
- Experience of the Respondent in completing similar projects
- Demonstrated ability to concomitantly manage multiple municipalities' schedule requirements for design, procurement, and installation
- Experience with effectively communicating project details to municipal staff and elected officials
- Knowledge of Pennsylvania DOT regulations for permitting and construction of roadway and outdoor lighting projects
- Knowledge of local utility tariffs, billing processes, transferring of ownership to municipalities, and act 129 rebates for streetlights and traffic signals
- Knowledge of Pennsylvania energy efficiency programs, requirements, regulations, and financial incentives

- Familiarity of the types of equipment specified through the Municipal Solid State Street Lighting Consortium Model Specification for Roadway Luminaires
- Ability to effectively and expeditiously communicate within the ESCO project team
- Ability to effectively and expeditiously communicate with the representatives of the RSLPP on behalf of the program as a whole
- Ability to effectively, openly, and expeditiously communicate individual municipal project detail and schedule with the representatives of the municipalities participating in the RSLPP
- Ability to procure streetlights requested in this program to achieve bulk pricing while maintaining quality standards according to the specification outlined in this RFP
- Responsiveness and understanding of the scope of work, and management of site conditions
- Clarity and conciseness of the submittal, and preliminary audit report

#### **4.2 Conditions.**

By responding to this RFP, the Respondent acknowledges and consents to the following conditions relative to the submission, review and consideration of its Response:

- The issuance of this RFP is not intended to, and may not be construed to, commit the Municipalities or any other individual, consultant or entity to any obligation related hereto, including but not limited to the execution of the GSA.
- None of the Municipalities, its staff or any of its consultants will be liable for any claims or damages resulting from the solicitation or collection of Responses.
- All Responses will become the property of DVRPC and the Municipalities and will not be returned. Respondent also agrees that “Response,” means all information and materials submitted with respect to this RFP, regardless of whether such information is tangible or intangible and including, without limitation, all (i) documentation, pictures, drawings, notes, and revisions and (ii) intellectual property rights related thereto.
- By submitting its Response to DVRPC, a Respondent permits the Municipalities to use the Response as it sees fit, including alteration, combination with other materials (including materials not submitted by Respondent), and public display and distribution. Respondent hereby grants, and represents and covenants that it will in the future grant to the Municipalities an unlimited, perpetual, royalty-free, transferable, sublicensable, fully paid-up right to publicly display, distribute, use, build, design, reproduce, and make derivative works from the Response.
- All activities related to preparing a Response shall be subject to compliance with all applicable federal, State and local laws, environmental regulations and/or other applicable requirements, including, but not limited to, any “Buy American” requirements.
- A Respondent shall meet with Municipal representatives and the general public to discuss its Response upon request of the Municipalities.
- All documentation and information provided by DVRPC and the Municipalities in connection with this RFP, the Appendices hereto, are believed to be accurate and correct; however, the Municipalities makes no guarantees as to the accuracy of the information provided. By submitting its Response, each Respondent agrees to and acknowledges its obligation and ability to perform whatever due diligence is necessary to inform itself

fully as to any relevant or material information or lack thereof as available in making a response thereto.

- Any person or entity, by accepting this RFP, will be deemed to have accepted the responsibility to consult with, and rely only on, his or its own tax advisors in connection with all federal and state tax matters in this RFP and that none of the Municipalities nor its advisors are rendering any advice or opinion in connection with such tax matters.

#### **4.3 Rights of the Municipalities.**

The Municipalities reserves, holds, and may exercise, at its sole discretion, the following rights and options with regard to this RFP:

- To supplement, amend, or otherwise modify this RFP.
- To change or alter the schedule for any events called for in the Anticipated Selection Schedule set forth in Section 1.8.
- To conduct investigations of any or all of the Respondents and their Responses as the Municipalities deems necessary or convenient, to clarify the information provided as part of the Response, including discussions with contact persons or prior clients, regulatory agencies and visits to any facilities or projects referenced in its Response, and to request additional information to support the information included in any Response.
- To reject all Responses and decline to enter into the GSA for any or all of the Sites.
- To abandon this selection process at the Municipalities convenience at any time, for any reason or no reason.
- To designate or consult with another agency, group, consultant, individual, or public body to act at any time during the term of this selection process in its place or on its behalf, consistent with applicable law.

### **5. LEGAL TERMS AND CONDITIONS.**

#### **5.1 Responsibility.**

Respondent shall assume all responsibility and obligation for the acts and omissions of its principals, members, directors, officers, employees, agents, representatives, subcontractors and consultants, together with all other firms, agencies or other persons assisting with the planning, design, construction or operation of the CMs.

#### **5.2 Governing Law.**

The terms and provisions of this RFP and any agreements related hereto shall be construed in accordance with the laws of the Commonwealth of Pennsylvania, and any and all litigation, proceedings, claims or actions commenced in connection with this RFP or any agreements related hereto shall be instituted in the appropriate courts in the Commonwealth of Pennsylvania.



### **5.3 Assignment.**

The successful Respondent may not sell, assign, transfer or convey any rights or agreements associated with its Response, in whole or in part, without the prior written consent of the Municipalities.

### **5.4 Promotion.**

Unless specifically authorized in writing by the Municipalities, Respondent will have no right to use, and shall not use, the name of the Municipalities (a) in any advertising, publicity, promotion; nor (b) to express or to imply an endorsement of the Respondent's products or services.

### **5.5 Indemnification.**

Respondent agrees to hold harmless and indemnify DVRPC, Keystone Lighting Solutions, FREE, the Municipalities, their respective officers, employees, agents, consultants and representatives, individually and collectively (for purposes of this section, the "**Indemnified Party**"), from and against, and shall assume all liability for, any and all losses, expenses, demands, claims or damages of any kind whatsoever (including loss of use), including losses, expenses, or damages sustained by the Indemnified Party, arising out of, related to, or in connection with the Respondent's preparation and submission of a Response and any actions Respondent takes in connection therewith, including, but not limited to, the actions of the Respondent's principals, members, directors, officers, employees, contractors, consultants, representatives and agents, and shall defend any suit or action brought against the Indemnified Party, based on any such alleged injury (including death) or damage (including loss of use), and shall pay all damages, judgments, costs, and expenses, including attorneys' fees in connection with said demands and claims resulting therefrom.

**APPENDIX A  
FORM OF GUARANTEED SAVINGS AGREEMENT  
PENNSYLVANIA SUSTAINABLE ENERGY FINANCE PROGRAM**

**GUARANTEED SAVINGS AGREEMENT**

**between**

**[OWNER]**

**and**

**[CONTRACTOR]**

**Prepared for the Regional Streetlight Procurement Program**

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## **APPENDICES**

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## GUARANTEED SAVINGS AGREEMENT

This Guaranteed Savings Agreement (this “**Agreement**”) is entered into as of [\_\_\_\_\_, \_\_\_\_] by [\_\_\_\_\_] a [\_\_\_\_\_] (the “**Contractor**”), and [\_\_\_\_\_] a [\_\_\_\_\_] (the “**Owner**”), for the purpose of installing certain energy saving equipment and providing other services designed to save energy for the Owner’s property and buildings described herein (together, the “**Project**”).

### Background

A. The Owner is a “governmental unit” as defined in the Guaranteed Energy Savings Act (62 Pa C.S. §3751) (the “**Act**”) / and has determined that it would be in its best interest to implement certain energy conservation measures consisting primarily of lighting improvements within its jurisdiction described in Schedule B (Description of Owner Facility; Pre-Existing Equipment Inventory) attached.

B. The Owner has participated in the Regional Streetlight Procurement Program (“**RSLPP**”) organized by the Delaware Valley Regional Planning Commission (“**DVRPC**”), and through the RSLPP has selected the Contractor to undertake the Project..

B. The Pennsylvania Treasury Department has partnered with the Foundation for Renewable Energy and Environment (“**FREE**”), with financial support from the West Penn Power Sustainable Energy Fund, to develop a prudent, market-based investment vehicle that promotes energy efficiency, clean energy generation, economic development and environmental improvement. To achieve this goal, FREE has established a program to facilitate the implementation and financing of energy conservation measures by governmental units and non-profit organizations in the Commonwealth of Pennsylvania.

C. D. The Contractor has experience in successfully performing work such as the work to be performed by it pursuant to this Agreement and wishes to undertake the Project on the terms set forth herein..

E. As part of the RSLPP selection process, the Owner and the Contractor proceeded with a preliminary audit (the “**Preliminary Audit**”) prior to entering into this Agreement to determine likely energy conservation measures, the associated energy savings, and estimates of the cost of installation. The Owner selected the Contractor based on the Preliminary Audit, a copy of which is attached as Appendix A (Preliminary Audit Report) hereto, and the Contractor and the Owner agreed to enter into this Agreement.

F. It is anticipated that the Owner will pay the Construction Price (as defined herein) to the Contractor from the proceeds of [\_\_\_\_\_] (the “**Bonds**”) to be issued by the Pennsylvania Economic Development Financing Authority (the “**Issuer**”) pursuant to a Trust Indenture (the “**Indenture**”) between the Issuer and [\_\_\_\_\_] (the “**Trustee**”), the proceeds of which will be deposited into various accounts established under the Indenture to fund the Project and similar projects being undertaken by other governmental units and non-profit organizations participating in the Program. In consideration of the undertaking of the Issuer to fund the cost of the Project, the Owner will enter into a Lease Agreement in the form

attached hereto as Exhibit 6 (Form of Lease Agreement) (the “**Lease Agreement**”), pursuant to which the Owner will make lease payments described therein to the Trustee.

### **Agreement**

In consideration of the Background and the mutual covenants, undertakings and conditions set forth below, the parties, intending to be legally bound, agree as follows:

## **ARTICLE 1 DEFINITIONS; CONVENTIONS**

**1.1. Definitions.** Unless otherwise expressly defined herein, each capitalized term in this Agreement has the meaning given to it in this Section 1.1.

**Applicable Codes** means codes, standards or criteria promulgated by nationally recognized technical standards institutions, which are applicable to or affect the Work as set forth for each ECM Installation in Schedule A (Scope of Construction Work).

**Applicable Law** means any law, regulation, requirement or order of any federal, state or local government agency, court or other governmental body, or the terms and conditions of any permit, license or governmental approval, applicable from time to time to the Work or the performance of any obligations under this Agreement.

**Application for Payment** means the application for payment submitted pursuant to Section 8.2, in substantially the form of Exhibit 4 (Form of Application for Payment).

**Audit Services** means the services provided by the Contractor to perform the Energy Audit and prepare the Investment Grade Audit Report pursuant to Article 2 below.

**Baseline Energy Consumption** is defined in, and is measured in accordance with, Schedule E (Baseline Energy Consumption).

**Bonds** is defined in the Background.

**Change** is defined in Section 6.1.

**Change Order** is defined in Section 6.1.

**Commonwealth** means the Commonwealth of Pennsylvania.

**Construction Price** is defined in Section 8.1.

**Construction Schedule** means the initial construction schedule set forth in Schedule G (Initial Construction and Installation Schedule) and any subsequent updated construction schedule delivered pursuant to Section 4.1(c).

**Construction Unit** means one or more ECM Installations that will be constructed as an integrated unit of Construction Work and are capable of functioning and being tested



independent of the balance of the Construction Work as set forth in Schedule O (Commissioning and Performance Tests).

**Construction Unit Completion** means, with respect to each Construction Unit, the conditions set forth in Section 5.2(a) have been met for such Construction Unit.

**Construction Unit Completion Date** means, with respect to each Construction Unit, the date on which Construction Unit Completion was achieved for such Construction Unit.

**Construction Work** is defined in Section 4.1.

**Contractor** is defined in the first paragraph of this Agreement.

**Contractor Documents** is defined in Section 4.10.

**ECM** means energy conservation measures, including equipment and software foundations and interconnections.

**ECM Installations** means ECMs to be installed at the Owner Facilities as described in the Investment Grade Audit Report and the Scope of Work.

**ECM Installations Operation Manual** means the manual meeting the requirements therefor set forth in Exhibit 2 (Contractor Documents).

**Energy Audit** is defined in Section 2.1.

**Energy Savings**, means, for any Savings Year, the energy savings for such Savings Year, expressed in dollars, based on a comparison of actual metered data with Baseline Energy Consumption and using the energy and utility prices and an annual escalation rate for such prices set forth in Schedule F (Savings Measurement and Verification Plan; Methodology to Adjust Baseline), and as calculated in accordance with the Measurement and Verification Plan. Energy Savings shall be adjusted to reflect the impact (positive or negative) of Uncontrollable Circumstances, Change Orders or Material Changes on actual meter reading to reflect the expected meter readings had such impacts not occurred. Energy Savings do not include operational savings, savings from avoided maintenance or capital costs, or savings (or reduced savings) from changes in energy prices as compared to the escalated prices set forth in Schedule F (Savings Measurement and Verification Plan; Methodology to Adjust Baseline).

**Expected Metered Savings** means Energy Savings reasonably expected to be achieved by the Owner over the term of this Agreement as calculated in accordance with Schedule C (Energy Saving Guarantee).

**Final Completion** means that conditions set forth in Section 5.3(a) have been met.

**Final Completion Certificate** is defined in Section 5.3(a)(vi).

**Final Completion Date** means the date on which Final Completion occurs.

**FREE** is defined in the Background.

**Good Industry Practice** means those practices, methods and acts that at any particular time, in the exercise of reasonable judgment, and consistent with current utility, telecommunications, data processing and software development industry practices, as applicable, would have been expected to accomplish the desired result in the manner consistent with Applicable Law, Applicable Codes, and standards of reliability, safety, efficiency and environmental protection in effect at such time, including the exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced energy services contractor engaged in the same type of undertaking under the same or similar circumstances.

**Guaranteed Final Completion Date** means the date that is [ ] days after the date of the Notice to Proceed, as it may be extended from time to time by a Change Order.

**Guaranteed Savings** means the Energy Savings levels set forth in Schedule C (Energy Saving Guarantee).

**Guaranteed Savings Payment** is defined in Section 11.3(a).

**Hazardous Substance** means any substance, material, gas, or particulate matter that is regulated by any governmental authority as an environmental pollutant or dangerous to public health, public welfare, or the natural environment, including protection of non-human forms of life, land, water, groundwater, and air, including any material or substance that is (a) defined as “toxic,” “polluting,” “hazardous waste,” “hazardous material,” “hazardous substance,” “extremely hazardous waste,” “solid waste” or “restricted hazardous waste” under any provision of local, state, or federal law; (b) petroleum, including any fraction, derivative or additive; (c) asbestos; (d) polychlorinated biphenyls; (e) radioactive material; (f) designated as a “hazardous substance” pursuant to the Clean Water Act, 33 U.S.C. § 1251 et seq. (33 U.S.C. § 1251); (g) defined as a “hazardous waste” pursuant to the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq. (42 U.S.C. § 6901); (h) defined as a “hazardous substance” pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 et seq. (42 U.S.C. § 9601); (i) defined as a “chemical substance” pursuant to the Toxic Substances Control Act, 15 U.S.C. § 2601 et seq. (15 U.S.C. § 2601); or (j) defined as a pesticide pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. § 136 et seq. (7 U.S.C. § 136).

**Indenture** is defined in the Background.

**Investment Grade Audit Report** is defined in Section 2.1.

**Issuer** is defined in the Background.

**Late Payment Rate** means, with respect to any amount due under this Agreement, a rate per annum equal to the lower of (a) the prime interest rate as published from time to time in The Wall Street Journal on the first day that such amount becomes past due plus [ ]% and (b) the highest rate allowed by law.

**Lease Agreement** is defined in the Background.

**Lease Payments** means the schedule of payments to be made during the term of, and in accordance with, the Lease Agreement.

**Material Change** means any change in or to the Owner Facilities, whether structural, operational or otherwise in nature, that increases or decreases annual energy consumption at the Owner Facilities, as determined in accordance with the Measurement and Verification Plan, by more than 5% after adjustments for climatic variations, including the following:

- (a) manner of use of the Owner Facilities;
- (b) hours of operation of the Owner Facilities or of any equipment or energy using systems operating at the Owner Facilities;
- (c) occupancy of the Owner Facilities;
- (d) modification, renovation or construction at the Owner Facilities;
- (e) permanent changes in the Standards of Comfort;
- (f) a change in the types and quantities of equipment used at the Owner Facilities; and
- (g) the effect of any malfunction, emergency or other event or condition described in Section 9.5(a) as to which the Owner failed to notify the Contractor in accordance with Section 9.5(a).

**Measurement and Verification Plan** means the plan by which the Energy Savings will be measured and verified as set forth in Schedule F (Savings Measurement and Verification Plan; Methodology to Adjust Baseline).

**Measurement and Verification Services** means the services described in Schedule F (Savings Measurement and Verification Plan; Methodology to Adjust Baseline).

**Milestone Schedule** means the schedule set forth in Schedule P (Milestone Schedule).

**Notice to Proceed** is defined in Section 3.2.

**Owner** is defined in the first paragraph of this Agreement.

**Owner Facilities** means the facilities identified as such in Schedule B (Description of Owner Facility; Pre-Existing Equipment Inventory).

**Owner Property** means the property identified as such in Schedule B (Description of Owner Facility; Pre-Existing Equipment Inventory).

**Owner Project Account** means the account established under the Indenture in the name of the Owner.

**Person** means any individual, partnership, corporation, association, business, trust, government or political subdivision thereof, governmental agency or other entity.

**Preliminary Audit** is defined in the Background.

**Program Agreement** means the Program Agreement among FREE, the Owner and the Contractor in substantially the form of Exhibit 3 (Form of Program Agreement).

**Project** is defined in the first paragraph of this Agreement.

**Qualified Steel Products** means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more of such operations, from steel made in the United States by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process and shall include cast iron products and shall include machinery and equipment listed in United States Department of Commerce Standard Industrial Classification 25 (furniture and fixture), 35 (machinery, except electrical) and 37 (transportation equipment) and made of, fabricated from, or containing steel components. If a product contains both foreign and United States steel, such product shall be determined to be a United States steel product only if at least 75% of the cost of the articles, materials and supplies have been mined, produced or manufactured, as the case may be, in the United States. Transportation equipment shall be determined to be a United States steel product if it complies with section 165 of Public Law 97-424 (96 Stat. 2136).

**RFP** is defined in the Background.

**RSLPP Program Requirements** means the services and other requirements set forth in Schedule T (RSLPP Program Requirements) as more fully described in Section 12.15.

**Savings Estimate** means the analysis undertaken pursuant to Section 2.8 using the form attached hereto as Exhibit 8 (Form of Savings Estimate).

**Savings Year** means the year beginning on the first day of the month following the Guaranteed Final Completion Date and each year thereafter, except that the final Savings Year will end on the last day of the term hereof.

**Scope of Work** means the descriptions of, and specifications for, the Construction Work set forth in Schedule A (Scope of Construction Work).

**Sites** means the locations for the performance of the Construction Work within the Owner Facilities identified as such in Schedule B (Description of Owner Facility; Pre-Existing Equipment Inventory).

**Standard of Care** is defined in Section 12.2.

**Standards of Comfort** means the standards for heating, cooling, hot water and lighting described in Schedule I (Standards of Comfort).

**Subcontractors** means those Persons at any tier of supply that supply services or materials to the Contractor in discharge of the Contractor's obligations under this Agreement.

**Trustee** is defined in the Background.

**Uncontrollable Circumstance** means, with respect to either party, an act, event or condition that has a material adverse effect on the rights or the obligations of such party under this Agreement and that is beyond the reasonable control of the party relying thereon as justification for not performing an obligation or complying with any condition required of such party under this Agreement, including:

(a) acts of God; labor disturbances; accidents; failure of a governmental entity to issue a permit or approval required for performance; civil disorders; acts of aggression; changes in any law or regulation adopted or issued by a governmental entity after the date of this Agreement; a court order; explosions; failure of utilities; material shortages;

(b) the adoption, promulgation, modification or reinterpretation after the date of this Agreement of any Applicable Law that was not adopted, and/or officially published in The Congressional Record, The Federal Register or the legislative or regulatory publication of the jurisdiction of the Applicable Law on or before the date of this Agreement;

(c) as to a party, the negligence, willful misconduct or unexcused failure to perform of the other party; and

(d) as to the Contractor (i) any concealed condition at the Owner Facilities that the Contractor could not have reasonably been expected to anticipate or to discover before entering into this Agreement, and (ii) the discovery of Hazardous Substances on the Owner Facilities for which the Owner is responsible pursuant to Section 6.2, including the presence of asbestos-containing materials;

provided that Uncontrollable Circumstance does not include (A) strikes or other labor actions arising from labor relations issues involving the employees of the Contractor or Subcontractors in connection with the performance of the Work or (B) any Hazardous Substance for which the Contractor is responsible under Section 7.1.

**Unit Completion Certificate** is defined in Section 5.2(a)(iii).

**Warranties** is defined in Section 9.1(b).

**Warranty Period** is defined in Section 9.1(c).

**Work** means the Construction Work, the Audit Services and the Measurement and Verification Services, together with any other obligation or undertaking of Contractor hereunder.

**1.2. Conventions.** Unless otherwise expressly provided in this Agreement:

- (a) references to Persons include their successors and permitted assigns;
- (b) the term “include,” “includes” or “including” means include, includes or including without limitation (as the case may be);
- (c) references to the Articles, Sections and Exhibits mean the articles and sections of, and the exhibits to, this Agreement;
- (d) the term “day” means a calendar day and includes Saturdays, Sundays and holidays, except that, if any obligation for the payment of money under this Agreement falls due on a Saturday, Sunday or a holiday on which Commonwealth banks are not open for business, the payment will be due on the next business day thereafter;
- (e) all references to a statute, regulation, law, agreement or instrument mean such statute, regulation, law, agreement or instrument as it may be amended, amended and restated or supplemented from time to time, including (in the case of statutes, regulations or laws) by successor statutes, regulations or laws and (in the case of agreements or instruments) by waiver or consent;
- (f) references to a party means a party to this Agreement; and
- (g) a reference to a governmental agency, department, board, commission or other public body or to a public officer includes an entity or officer that or who succeeds to or performs substantially the same functions as those performed by such governmental agency, authority, department, board, commission or other public body or to a public officer.

## **ARTICLE 2 INVESTMENT GRADE AUDIT**

**2.1. Scope of Energy Audit and Investment Grade Audit Report.** The Contractor, with the cooperation of the Owner, will perform a comprehensive investment grade energy use and savings analysis (the “**Energy Audit**”) and prepare a detailed engineering and economic report (the “**Investment Grade Audit Report**”) to be attached hereto as Appendix B that specifically identifies the ECMs that the Contractor recommends to be installed or implemented at the Owner Facility. The Investment Grade Audit Report will contain detailed projections of energy and cost savings to be obtained at the Owner Facility as a result of the installation or implementation of the ECMs. The savings calculations will document and use assumptions, projections, and baselines that best represent the true value of future energy savings for the Owner Facility, including accurate marginal cost for each unit of savings at the time the Energy Audit is performed; documented material and non-staff labor costs actually avoided; adjustments to the baseline to reflect current conditions at the Owner Facility compared to the historic base period; calculations that account for the interactive effects of the recommended ECMs, etc. The Investment Grade Audit Report must clearly describe how utility tariffs were used to calculate savings for all ECMs. The Investment Grade Audit Report must describe the Contractor’s plan for installing or implementing the measures in the Owner Facility, including all anticipated costs associated with the installation and implementation. The primary purpose of the Investment Grade Audit Report is to provide the engineering and economic basis for the Construction Work

and the Guaranteed Savings. Sections 2.2 through 2.10 below set forth the tasks the Contractor shall perform in performing the Energy Audit and preparing the Investment Grade Audit Report.

## **2.2. Collect General Owner Facility Information.**

(a) The Contractor shall (i) collect general Owner Facility information, such as size, age, construction type, condition and general use of the Owner Facility, (ii) collect and summarize Owner Facility utility cost and consumption data for the most recent 36-month period and (iii) evaluate the impact on utility cost and consumption of any energy initiatives, currently being installed or currently contemplated to be installed by the Owner in the Owner Facility, which will not be subject to this Agreement.

(b) The Owner shall furnish or cause to be furnished:

(i) all available records and data concerning energy usage for the Owner Facility for the most current 36-month period, if available, including utility records; occupancy information; descriptions of any changes in the structure of the Owner Facility or its heating, cooling, lighting or other systems or energy requirements; descriptions of all major energy consuming or energy saving equipment used in the Owner Facility; any comfort problems, code deficiencies, and a description of current energy management procedures;

(ii) a record of any energy-related improvements or modifications that have been installed during the past three years or are currently being installed or are currently contemplated to be installed by the Owner in the Owner Facility that would not be subject to this Agreement;

(iii) copies of drawings, equipment logs and maintenance work orders to the Contractor; and

(iv) Any constraints that may affect the audit process or savings analysis. This may include potential ECMs that that the Owner does not want considered, the term of this Agreement and anticipated changes in the use, operation, or size of the Owner Facility.

## **2.3. Analyze Existing Systems and Equipment.**

(a) The Contractor shall prepare an analysis based on a physical inspection of the major electrical and mechanical systems at the Owner Facility, including:

(i) cooling systems and related equipment;

(ii) heating and heat distribution systems;

(iii) automatic temperature control systems and equipment;

(iv) air distribution systems and equipment;

- (v) outdoor ventilation systems and equipment;
- (vi) kitchen and associated dining room equipment, if applicable;
- (vii) laboratories and associated lab equipment, if applicable;
- (viii) exhaust systems and equipment;
- (ix) hot water systems;
- (x) electric motors, transmission and drive systems;
- (xi) interior and exterior lighting;
- (xii) laundry equipment, if applicable;
- (xiii) water consumption end uses, such as restroom fixtures, water fountains, irrigation, etc.;
- (xiv) wall/roof/foundation insulation and energy loss through building structures; and
- (xv) other major energy using systems, if applicable.

(b) The analysis must address the following considerations:

- (i) the loads, proper sizing, efficiencies or hours of operation for each system (where Owner Facility operating or climatic conditions necessitate, engineering estimates may be used, but for large fluctuating loads with high potential savings appropriate measurements are required unless waived by the Owner); and
- (ii) current operating condition for each system.

(c) The Contractor shall conduct interviews with Owner Facility operation and maintenance staff regarding the Owner Facility's mechanical systems operation, occupancy patterns and problems with comfort levels or equipment reliability.

(d) The Owner acknowledges that the Contractor's scope of work in the conducting the Energy Audit does not include or require the Contractor to identify hazardous substances at the Owner Facility. However, if the Contractor does identify or encounter any hazardous substances while conducting the Energy Audit, it will describe the type and location thereof in the Investment Grade Audit Report.

#### **2.4. Establish Consumption and Reconcile with End Use Consumption Estimates.**

(a) The Contractor shall examine the most recent 36 months of utility bills and establish consumption for electricity, fossil fuels and water by averaging or selecting the most representative consecutive 12 months. The Contractor shall consult with Owner Facility



staff and account for any unusual or anomalous utility bills that may skew consumption from a reasonable representation.

(b) The Contractor shall analyze all major end uses representing more than 5% of total Owner Facility consumption including, but not limited to: (i) lighting, (ii) heating, (iii) cooling, (iv) HVAC motors (fans and pumps), (v) plug load, (vi) kitchen equipment, (vii) laboratory equipment, and (viii) other equipment.

(c) Where loading and/or usage are highly uncertain, the Contractor shall employ spot measurement and/or short term monitoring at its discretion, or at the request of the Owner. Reasonable applications of measurement typically include variable loads that are likely candidates for conservation measures, such as cooling equipment.

**2.5. Develop List of Potential ECMs.** The Contractor shall:

(a) identify and propose potential ECMs for installation or implementation at the Owner Facility, including cut sheets on proposed equipment;

(b) for non-standard ECMs, provide information regarding product site installations;

(c) provide a detailed estimate of the savings and life expectancy of each proposed ECM;

(d) specify Owner Facility operations and maintenance procedures which will be affected by the installation/implementation of the proposed ECMs;

(e) provide analysis methodology, supporting calculations and assumptions used to derive baselines (e.g., lighting operating hours) and estimate savings, including the disclosure of essential data, assumptions, formulas, etc. used in manual calculations such that a reviewer can replicate the calculations based on the data provided;

(f) provide (i) the existing and proposed air and hot water temperatures, amount of outdoor air ventilation (CFMs) lighting and acoustic levels, and (ii) copies of the utility tariffs and commodity price histories used in savings calculations;

(g) for savings estimates using computer simulations, provide access to the program and all inputs and assumptions used, if requested by the Owner;

(h) provide a detailed preliminary savings measurement and verification plan for each proposed ECM;

(i) provide a detailed preliminary commissioning plan for the proposed ECMs;

(j) provide detailed calculations for any rate saving proposals;

(k) provide evidence that proposed ECMs will not result in material increases in maintenance, material or other operational costs;

(l) estimate for informational purposes any environmental costs or benefits of the proposed ECMs (e.g., disposal costs, avoided emissions), and provide (i) emissions reductions data for NO<sub>x</sub>, CO<sub>2</sub> and SO<sub>2</sub>, and (ii) segment emissions data for direct site emissions reductions (e.g., fossil fuels) and indirect emissions reduction data (e.g., electricity/water);

(m) use the EPA's ENERGY STAR<sup>TM</sup> tools and resources (information for which, and a list of eligible facility types, can be found at [Energy Star Tools and Resources](#)), or other tools and resources approved in writing by the Owner, for each eligible facility, to provide an estimated post-retrofit energy performance rating using the delta score estimator and to submit a completed cash flow opportunity spreadsheet using the cash flow opportunity calculator;

(n) ensure that all proposed ECMs comply with all Applicable Codes and Applicable Laws as in effect on the date of the Investment Grade Audit Report.

**2.6. Select Final Recommended ECMs.** The Contractor shall, in consultation with the Owner, recommend specific ECMs from its preliminary compilation for installation and implementation at the Owner Facility.

**2.7. Fixed Prices; Annual Service Fee.** The Contractor shall propose a fixed price for the installation, implementation and commissioning (including training for Owner personnel) of each proposed ECM. The Contractor shall identify, for each proposed ECM, any hard cost that represents 10 percent or more of the proposed fixed price. Project cost data must be provided in the format set forth in Exhibit 7 (Form of ECM Price Proposal).

**2.8. Savings Estimates.**

(a) The Owner shall endeavor to provide the Contractor with sufficient general and specific guidance pursuant to this Article 2 to develop the savings estimates for the Investment Grade Audit Report. If questions arise as to the calculation of savings or whether certain items will be allowed as savings, the Contractor shall seek written guidance and instructions from the Owner. The Owner may reject items claimed as savings that do not reflect reductions to items currently included in the Owner's budget or that have been claimed contrary to the terms of this Agreement or contrary to the written guidance or instructions provided by the Owner. The Owner may reject the Contractor's calculation of savings if it determines that there is another more suitable or preferable means of determining or calculating such savings.

(b) For the purposes of completing the Savings Estimates, the following annual escalation rates for commodity prices may be allowed in the development of savings estimates:

(i) [●] % for natural gas;

(ii) [●] % for electricity;

- (iii) [●] % for oil;
- (iv) [●] % for steam;
- (v) [●] % for water; and
- (vi) [●] % for other fuel type (specify).

(c) The following items will not typically be credited as savings derived from a proposed ECM: (i) the Owner's in-house labor cost, (ii) the Owner's deferred maintenance cost, (iii) offset of future capital costs of the Owner and (iv) reduced operation and maintenance costs. The Contractor may seek written exemptions from the Owner on a case-by-case basis. However, the final determination of allowable savings in each case considered will reside with the Owner.

## **2.9. Investment Grade Audit Report Format.**

(a) The Contractor shall prepare a two-volume report as follows:

(i) Each volume must be submitted using 8 1/2" x 11" sheets of paper and a font size no smaller than 10 point. The pages in each volume must be numbered sequentially, include a Table of Contents and tabbed with the visible titles of corresponding Schedules (Volume 1) or Sections (Volume 2).

(ii) Volume I shall include the presentation of information in the following schedules and exhibit to also be attached to the Investment Grade Audit Report to the extent the information has been requested and developed during the course of performing the Energy Audit.

- Schedule A Scope of Construction Work (identifying the proposed equipment to be installed by the Contractor, describing all work necessary for such installation and describing what obligations the Contractor proposes to undertake with respect to hazardous substances)
- Schedule B Description of Owner Facility; Pre-Existing Equipment Inventory
- Schedule C Energy Saving Guarantee
- Schedule D Proposed Monthly Operations and Maintenance Payments to the Contractor (including a proposed inflation adjustment factor)
- Schedule E Baseline Energy Consumption
- Schedule F Savings Measurement & Verification Plan; Methodology

to Adjust Baseline

Schedule G	Initial Construction and Installation Schedule (showing the Guaranteed Final Completion Date)
Schedule H	Systems Start-Up and Commissioning; Operating Parameters of Installed Equipment
Schedule I	Standards of Comfort
Schedule J	Contractor's Maintenance Responsibilities
Schedule K	Owner's Maintenance Responsibilities
Schedule L	Owner Facility Maintenance Checklist
Schedule M	Contractor's Training Responsibilities
Schedule N	Lease Payment Schedule
Schedule O	Commissioning and Performance Tests
Schedule P	Milestone Schedule
Schedule Q	Approved Subcontractors
Schedule R	Measurement and Verification Fee

(b) Volume 2 must include all of the information required in Section 2.5 and the Sections below, and presented in the following format:

(i) *Executive Summary.* Provide an executive summary which describes the Owner Facility, ECMs evaluated, analysis methodology, results and a summary table presenting the cost and savings estimates for each recommended ECM. The executive summary is to include a summary of the recommended measures and costs.

(ii) *Measures Not Evaluated.* Include a discussion of measures not evaluated in detail and the explanation of why a detailed analysis was not performed.

(iii) *Baselines.* Provide a summary of all utility bills, consumption baselines and how they were established, and end use reconciliation with respect to the baselines including a discussion of any unusual characteristics and findings.

(iv) *ECMs.* Provide detailed descriptions for each ECM, including analysis method, supporting calculations (may be submitted in appendices), results, proposed equipment and implementation issues.

(v) *Price.* Provide a fixed price for each proposed ECM.

(vi) *Savings Estimate*. Provide the estimated and guaranteed savings for each proposed ECM.

(vii) *Term*. Provide a proposed term for this Agreement based on total project cost, proposed O&M payments and guaranteed savings.

(viii) *O&M Payments*. If requested by Owner, provide a proposed monthly amount to compensate the Contractor for performing the maintenance services to be set forth in Schedule K of the Investment Grade Audit Report, together with an inflationary adjustment factor.

(ix) *Milestones*. Describe milestones against which payments for the installation of the ECMs will be made.

(x) *Appendices*. Provide thorough appendices that document the data relied upon to prepare the analysis and how that data was collected.

**2.10. Submission of the Investment Grade Audit Report.** The Investment Grade Audit Report must be completed and submitted to Owner within [90] days of the date of execution of this Agreement. The Owner will notify the Contractor in writing of any requested changes in the Investment Grade Audit Report and each party shall exercise good faith and due diligence in endeavoring to complete mutually acceptable Schedules. The Owner will notify the Contractor in writing of its acceptance of the final Investment Grade Audit Report and of its determination regarding whether or not the Owner will go forward with the Construction Work within [90] days of its initial receipt of the Investment Grade Audit Report unless the parties agree to an extended period for negotiation.

### ARTICLE 3

#### CONDITIONS PRECEDENT TO COMMENCEMENT OF CONSTRUCTION WORK

##### 3.1. Conditions Precedent.

(a) The obligations and liabilities of each party under this Agreement (except Articles 2, 3, 7, 9 and 13 and, to the extent applicable, Articles 1, 12 and 14) are subject to the satisfaction or waiver of each of the following conditions precedent:

(i) the Contractor shall have completed its Investment Grade Audit Report, the Investment Grade Audit Report shall offer to guarantee Energy Savings that are equal to at least 90% of the savings projected in the Preliminary Audit and shall provide final detailed pricing to confirm the Guaranteed Savings, and the Owner and the Contractor shall have agreed upon the final terms of Schedules A through R thereto to be attached as Schedules A through R of this Agreement;

(ii) the amount of the Guaranteed Savings for each Savings Year set forth in Schedule C (Energy Savings Guarantee) exceeds the amount required to pay all Lease Payments payable with respect to such Savings Year in the absence of adjustments resulting from a Change Order or Material Change; provided that if the Lease Payment Schedule set forth in Schedule N (Lease Payment Schedule) is for a period of years less

than the term of this Agreement, the condition in this Section 3.1(a)(ii) will be measured on an aggregate basis over the term of this Agreement and the Lease Agreement, respectively, rather than on an annual basis;

(iii) the Bonds have been issued, a portion of the net proceeds thereof have been deposited into the Owner Project Account, and all conditions to making the initial draw thereof have been satisfied;

(iv) all permits, licenses, authorizations and approvals required to be obtained to commence the Construction Work have been obtained;

(v) The Issuer, FREE, the Owner and the Contractor have entered into the Program Agreement;

(vi) the Owner shall have notified Contractor in writing of its acceptance of the Investment Grade Audit Report and of its determination to go forward with the Construction Work pursuant to Section 2.10 above;

(vii) no action, suit, proceeding or official investigation shall have been overtly threatened, publicly announced or commenced by any Person or any federal, State or local governmental authority or agency, or in any federal, State or local court (excluding any action, suit, proceeding or official investigation which, in the opinion of counsel acceptable to the Owner and the Contractor, is without merit) that challenges the validity of this Agreement or any of the agreements contemplated hereby or seeks to enjoin, assess civil or criminal penalties against, assess civil damages against or obtain any judgment, order or consent decree against either party hereto with respect to this Agreement or any of the transactions contemplated hereby; and

(viii) the representations of the other party set forth in Section 14.1(a) are true and correct in all material respects as of the date of the Notice to Proceed as if made on and as of such date; and such other party has delivered to such party a certificate of its authorized representative, dated the date of the Notice to Proceed, to such effect.

(b) The obligations and liabilities of the Owner under this Agreement (except Section 3.2) are further subject to the satisfaction or waiver of each of the following conditions precedent:

(i) the Contractor has delivered to the Owner payment and performance bonds, substantially in the form of Exhibit 1 (Forms of Payment and Performance Bonds) and issued by a surety reasonably acceptable to the Owner in support of the Contractor's obligation to perform the Construction Work and other obligations arising prior to Final Completion, in the amount of the Construction Price; and

(ii) the Contractor has submitted to the Owner certificates of insurance evidencing that the Required Insurance is in effect.

### **3.2. Satisfaction of Conditions Precedent.**

(a) Each party shall exercise good faith and due diligence in satisfying the foregoing conditions precedent and giving prompt notice to the other party when such conditions precedent have been satisfied or waived in writing by the party whose obligation is conditioned thereon.

(b) Either party shall promptly notify the other party if any condition precedent is incapable of being satisfied.

(c) When (i) both parties agree that all conditions precedent are satisfied or that they are prepared to waive any conditions not so satisfied and (ii) the Owner has determined that the Contractor should begin the Construction Work, the Contractor and the Owner shall execute an instrument in which (A) each of them states that all of the conditions precedent to its obligations set forth in this Article 3 have been satisfied or waived and (B) the Owner directs the Contractor to begin the Construction Work (such instrument, the “**Notice to Proceed**”).

(d) If either party delivers a notice that one or more conditions precedent cannot be satisfied pursuant to Section 3.2(b) above, or if any condition precedent is not satisfied or waived by [\_\_\_\_\_], in either case for reasons not due to the terminating party’s failure to comply with its obligations under Section 3.2(a), then (i) either party may at any time thereafter until such conditions have been satisfied or waived, by notice to the other party, terminate this Agreement, (ii) neither party will be liable to the other for any such termination and (iii) each party will bear its own expenses attributable to the transactions contemplated by this Agreement.

### **3.3. Owner’s Right to Terminate Prior to Commencement of Construction Work.**

(a) In addition to its rights under Section 3.2, the Owner shall have the right to terminate this agreement and not proceed with the Construction Work at any time prior to the issuance of the Notice to Proceed. Should the Owner exercise such right, other than for a reason specified in Section 3.2(d), the Owner agrees to pay the Contractor [\_\_]% of the Contractor’s documented and invoiced costs and expenses incurred in connection with this Agreement, including the costs incurred in conducting the Investment Grade Audit Report.

(b) If this Agreement is terminated pursuant to this Section 3.3, the Contractor agrees to provide the Owner with copies of any preliminary notes, reports and analyses that were produced prior to the effective date of the termination. Such documentation shall be used by the Owner to help determine the extent of work completed by the Contractor prior to termination and shall become the property of the Owner.

## **ARTICLE 4 CONSTRUCTION**

### **4.1. Construction Work.**

(a) The Contractor shall provide, in a good and workmanlike manner, all services, supervision, labor, materials and equipment, supplies, miscellaneous materials, and

machinery necessary to design, engineer, procure, construct, install and commission the ECM Installations (the “**Construction Work**”). The Construction Work includes the following activities:

(i) the preparation and completion of a detailed design of the Construction Units;

(ii) the acquisition, delivery, construction, assembly and installation of the ECM Installations at the Owner Facilities, including the procurement, expediting, inspection, installation, construction, assembly and erection of all required structures and ECM Installations in accordance with Schedule A (Scope of Construction Work) in such a manner so as to permit Owners’ Facilities as improved by the ECM Installations to be operated to maintain the Standards of Comfort;

(iii) the provision of the ECM Installations Operation Manual for each Site for the operation and maintenance of the ECM Installations located at such Site;

(iv) commissioning and testing the ECM Installations; and

(v) the performance of each of the Contractor’s other obligations under this Agreement, other than its obligations to provide the Measurement and Verification Services and to pay the Guaranteed Savings Payment, if any, and any obligations arising from or relating to such obligations.

(b) Upon execution of the Notice to Proceed, the Contractor shall promptly begin and diligently prosecute to completion the Construction Work.

(c) Within 30 days after the date of the Notice to Proceed, the Contractor shall provide the Owner with a critical path schedule meeting the requirements of Exhibit 11. The Contractor shall use the critical path method to monitor and analyze the factors that are delaying or could delay achieving Construction Unit Completion of any Construction Unit. The Contractor shall continually update the critical path schedule so that it at all times reflects the current status of the Construction Work. Updates of the critical path schedule do not affect the Guaranteed Final Completion Date, which can only be modified by a Change Order.

**4.2. Permits and Approvals.** The Contractor shall, at its own expense, obtain all necessary permits and approvals for performance of the Construction Work. The Owner shall use its reasonable efforts to assist the Contractor in obtaining any such permits or approvals, including execution and delivery of applications required to be in the name of the Owner. The Owner will not be responsible for payment of any expenses or fees incurred in obtaining any such permit or approval. The Contractor shall deliver copies of each such permit or approval to the Owner before the Contractor commences the portion of the Construction Work to which such permit or approval relates.

**4.3. Work Force.** The Contractor shall furnish a competent and adequate staff as necessary for the proper administration, coordination and supervision of the Construction Work; organize the procurement of all materials and equipment so that they will be available at the time they are needed for the Construction Work; and ensure that an adequate force of skilled workers



are available to complete the Construction Work in accordance with all requirements of this Agreement. All such workers will meet the minimum qualifications set forth in Exhibit 10 (Employee Qualifications), and will comply with Owners codes of conduct set forth in Exhibit 9 (Owner's Conduct Requirements).

**4.4. Project Manager.** The Contractor shall employ a competent individual to act as a project manager and be responsible for the coordination and performance of the Construction Work and be authorized to commit the Contractor with regard to manpower, schedule, coordination, and cooperation. The project manager must have at least two years of documented experience in responsible field supervision for projects of comparable size and complexity. The project manager or its designee must be present at the Owner Facilities during normal working hours. The Contractor shall give the Owner advance notice if it intends to remove or replace the project manager. In the event the project manager fails to perform its duties under this Agreement, the Contractor shall replace the project manager with an individual with the qualifications described in this Section 4.4.

**4.5. Condition of the Owner Facilities.** The Contractor (a) represents that it has satisfied itself as to the nature and location of the Owner Facilities, the suitability of the Owner Facilities for the performance by the Contractor of the Construction Work, the character of equipment and facilities needed before and during the performance of the Construction Work and all other matters relating to the Owner Facilities that could affect the Construction Work and (b) subject to paragraph (d) of the definition of Uncontrollable Circumstances, agrees that the Owner Facilities are sufficient in their current condition for the performance by the Contractor of the Construction Work.

**4.6. Coordination.** The Contractor and the Owner shall coordinate in advance the Contractor's use of spaces on the Owner Facilities to minimize loss of use of the Owner Facilities by the Owner while maintaining safety of all persons at the Owner Facilities or the Owner Property and avoiding delay of Construction Work.

**4.7. Exclusive Use of Sites.**

(a) If the parties agree pursuant to Section 4.6 that the Contractor will have exclusive use of all or a portion of any Site as a workspace for the Construction Work, the Contractor shall maintain such workspace in a safe and orderly manner and take reasonable steps to protect equipment, tools and materials used in the Construction Work, the Owner's existing equipment, and the Owner Facilities from harm, theft and misuse.

(b) Notwithstanding subsection (a) above, the Owner's security, emergency or maintenance personnel will at all times have access to any portion of the Owner Facilities, provided that non-emergency access will not unreasonably interfere with the Construction Work.

**4.8. Responsibility for Damages.** The Contractor shall perform the Construction Work in such a manner so as not to harm the Owner Facilities or its operating systems. The Contractor shall, at its own cost, repair and restore to its original condition any area of damage, including to the building fabric or equipment that is intended to continue in service, caused by its performance of the Construction Work.

**4.9. Inspections.** The Owner and its designees will have the right to monitor and inspect the Construction Work. Such Persons may not unreasonably interfere with the performance of the Construction Work. At the request of the Owner, the Contractor shall uncover such portions of the Construction Work as the Owner may direct. If the exposed Construction Work meets the requirements of this Agreement, the Owner shall reimburse the Contractor for the costs of uncovering and replacing the Construction Work and the Guaranteed Final Completion Date will be extended by the number of days of delay, if any, caused by uncovering and replacing the Construction Work. If the exposed Construction Work does not meet the requirements of this Agreement, the costs of uncovering and replacing such Construction Work shall be borne by the Contractor and the Guaranteed Final Completion Date will not be extended. Contractor will promptly correct any defect or deficiency in the Work or Work that does not otherwise meet the Standard of Care that is identified in the course of the Construction Work.

**4.10. Delivery and Review of Documents.** The Contractor shall submit to the Owner the documents described in Exhibit 2 (Contractor Documents) in the form described in, and otherwise in accordance with, the requirements set forth in Exhibit 2 (Contractor Documents) (the “**Contractor Documents**”), along with all supporting materials reasonably necessary to review such Contractor Documents, before beginning any construction or installation of the portion of the Work that such documents address. The Owner shall provide to the Contractor its comments on any Contractor Document (other than as-built drawings) within [●] days of receiving it and the supporting materials; provided that, if more than one set of the Contractor Documents and supporting materials is delivered within any [●]-day period, the parties shall mutually agree on the Owner’s review periods for each such set. If the Owner does not respond within such [●]-day period, the Contractor Documents will be deemed to have been reviewed and the Contractor will be entitled to proceed. The Contractor is not required to deliver and the Owner is not required to review shop drawings that are not part of the Contractor Documents.

**4.11. Effect of Review and Inspection.** The rights of the Owner to review the Contractor Documents and to monitor and inspect the Construction Work will not create the right to stop or otherwise impede the Construction Work. In no event will the exercise of, or failure to exercise, rights to monitor or inspect the Construction Work or to review the Contractor Documents constitute acceptance or approval thereof or relieve the Contractor of any of its obligations under this Agreement.

**4.12. Project Meetings.** The Contractor shall provide for regularly scheduled project meetings and shall give reasonable advance notice and an agenda of such meetings to the Owner. The Contractor shall record minutes and deliver copies of minutes of meetings to the Owner within five business days after each meeting. The Contractor shall schedule additional project meetings at the reasonable request of the Owner.

**4.13. Progress Reports.** The Contractor shall submit to the Owner by the fifth day of each month prior to the Final Completion Date (a) a written progress report in form and substance reasonably acceptable to the Owner, with respect to the prior month and (b) an updated Construction Schedule.

#### **4.14. Uncontrollable Circumstances.**

(a) If, as a result of an Uncontrollable Circumstance, either party is prevented from performing or is delayed in the performance of any of its obligations under this Agreement (other than an obligation to pay money), such prevention of or delay in performance will, subject to such party's satisfaction of the conditions precedent in subsection (b) below, be excused during any period in which such performance is prevented or delayed by an Uncontrollable Circumstance, and for such period thereafter as necessary to correct the adverse effect of such Uncontrollable Circumstance; provided that the failure to pay any amounts owed hereunder (whether accruing prior to or during the Uncontrollable Circumstance) in a timely manner will not be excused by an Uncontrollable Circumstance. In the case of an Uncontrollable Circumstance affecting the Contractor, the Contractor will be entitled to a Change Order pursuant to Section 6.2(d).

(b) A party will be excused from performance hereunder as a result of an Uncontrollable Circumstance subject to the following conditions:

(i) such party gives the other party prompt notice describing the particulars of the Uncontrollable Circumstance and the potential duration of the prevention of or delay in performance; and

(ii) such party uses its commercially reasonable efforts to (A) mitigate the impact of the Uncontrollable Circumstance on its performance, (B) pursue insurance and any other third-party reimbursement that may reasonably be expected to be obtained with respect to the Uncontrollable Circumstance and (C) overcome the prevention of or delay in performance, and performance is resumed at the earliest practicable time after cessation of the Uncontrollable Circumstance.

**4.15. Training.** The Contractor shall provide such training to employees or contractors designated by the Owner as is necessary to operate the ECM Installations in accordance with the ECM Installations Operation Manual.

#### **4.16. Subcontractors.**

(a) The Contractor may not enter into an agreement with a Subcontractor having a value greater than [●] without the Owner's consent, which it may not unreasonably withhold. Such consent will not relieve the Contractor of any of its obligations under this Agreement. The Owner hereby consents to the Contractor entering into a subcontract with any Subcontractor identified in Schedule Q (Approved Subcontractors).

(b) The Contractor will be as fully responsible to the Owner for the acts and omissions of Subcontractors or persons directly or indirectly employed by them as it is for the acts or omissions of persons employed by the Contractor. Nothing in this Agreement will create any contractual relationship between any Subcontractor and the Owner. The Owner will have no obligation to pay directly, or cause the payment of, any Subcontractor.

(c) The Contractor hereby assigns to the Owner, its successors and assigns all of the Contractor's right, title, and interest in all agreements with Subcontractors having a value

greater than [●], provided that such assignment will only be effective upon (i) acceptance of such assignment by the Owner by notice to the Subcontractor and (ii) the termination of this Agreement for an Event of Default by the Contractor. Until the time, if any, that such assignment is accepted, the Owner will not be responsible for performance under this assignment or under any agreement with any Subcontractor and no Subcontractor will have any claim or cause of action against the Owner. Upon the Owner's acceptance of any such assignment, the Contractor will have no further obligations under the assigned agreement except with respect to matters arising from the conduct of the Contractor and the applicable Subcontractor prior to the date of such acceptance. All such agreements with Subcontractors must include a provision agreeing to and acknowledging this assignment.

#### **4.17. Access to the Owner Facilities.**

(a) The Owner shall provide access to the Owner Facilities for the Contractor to perform the Construction Work during regular business hours, or such other reasonable hours as may be requested by the Contractor and agreed to by the Owner, provided the personnel performing the Construction Work perform in accordance with the Owner's written policies regarding contractor personnel, a copy of which has been provided to the Contractor.

(b) The Owner shall provide reasonable rent free space for the Contractor, or any of its Subcontractors, to mobilize and store its supplies, tools and equipment during the performance of the Construction Work for which such storage may be required. The Contractor shall maintain such space in a safe and orderly manner.

### **ARTICLE 5 START-UP AND COMMISSIONING; COMPLETION**

**5.1. Systems Startup and ECM Installations Commissioning.** The Contractor shall conduct a thorough and systematic performance test of each element and total system of the installed ECM Installations in accordance with Schedule O (Commissioning and Performance Tests). Testing must be designed to determine if each ECM Installation is functioning in accordance with both its published specifications and the requirements of this Agreement and to determine if modified building systems, subsystems or components are functioning properly within the new integrated environment. The Contractor shall provide notice to the Owner of each scheduled test and the Owner and its invitees will have the right to be present at any or all such tests. The Contractor shall correct and adjust all deficiencies in the Construction Work that are observed during system commissioning procedures.

#### **5.2. Construction Unit Completion.**

(a) Construction Unit Completion for a Construction Unit will occur when the following conditions have been met:

(i) the performance of the Construction Work relating to such Construction Unit is complete, except for those items specified in a punch list for such Construction Unit, prepared by the Contractor and approved by the Owner, listing all items of the Construction Work relating to such Construction Unit that have not yet been completed, which items may not, during the period of time needed for their completion,

materially impair the normal operation of the Construction Unit or activities at the Site or Sites on which such Construction Unit is located;

(ii) the Construction Unit has been commissioned and successfully tested in accordance with Schedule O (Commissioning and Performance Tests); and

(iii) The Contractor has delivered a certificate (the “**Unit Completion Certificate**”) certifying that all of the preceding conditions in this Section 5.2 have been satisfied; provided that, if the Owner subsequently raises any valid objection to such certificate in accordance with subsection (b) below, such certificate will not be deemed to be delivered until such objection is satisfied.

(b) Within 30 days of receipt of the Unit Completion Certificate, the Owner shall either approve the Unit Completion Certificate or state its objection and provide the Contractor with a detailed explanation therefor. Any such objection will be resolved in accordance with Section 12.7 below. If the Owner fails to approve or object to the Unit Completion Certificate within such 30-day period, the Unit Completion Certificate will be deemed to have been approved. If the Owner has approved or been deemed to have approved the Unit Completion Certificate, or the Owner has objected to the Unit Completion Certificate and such objection has subsequently been determined to be unsubstantiated, the approval or deemed approval will be considered to have been given as of the original date of delivery of the Unit Completion Certificate. If the Owner validly objects to the Unit Completion Certificate, then the date of approval will be considered to be the date that the Contractor has satisfied such objection.

### **5.3. Final Completion.**

(a) Final Completion will be achieved as of the latest date that any of the following conditions has been satisfied or deemed to have been satisfied:

(i) each Construction Unit has achieved Construction Unit Completion;

(ii) the performance of the Construction Work is complete, including all punch list items;

(iii) the Owner Facilities and the Owner Property are clear of all liens, claims, security interests or encumbrances arising out of or in connection with the performance of the Construction Work;

(iv) the Contractor has delivered all Contractor Documents and has completed the training program described in Section 4.15 above;

(v) there are no outstanding Contractor Events of Default or events that with the passage of time or the giving of notice would become Contractor Events of Default; and

(vi) the Contractor has delivered to the Owner a certificate (the “**Final Completion Certification**”), certifying that all of the preceding conditions in this

subsection (a) have been satisfied; provided that, if the Owner subsequently raises any valid objection to such certificate in accordance with subsection (b) below, such certificate will not be deemed to be delivered until such objection is satisfied.

(b) Within 30 days of receipt of the Final Completion Certification, the Owner shall either approve the Final Completion Certification or state its objection and provide the Contractor with a detailed explanation therefor. Any such objection shall be resolved in accordance with Section 12.7 below. If the Owner fails to approve or object to the Final Completion Certification within such 30-day period, the Final Completion Certification will be deemed to have been approved. If the Owner has approved or been deemed to have approved Final Completion Certification, or the Owner has objected to Final Completion Certification and such objection has subsequently been determined to be unsubstantiated, the approval or deemed approval will be considered to have been given as of the original date of delivery of the Final Completion Certification. If the Owner validly objects to the Final Completion Certification, then the date of approval will be considered to be the date that the Contractor has satisfied such objection.

## **ARTICLE 6 CHANGES TO THE CONSTRUCTION WORK**

**6.1. General.** Except as provided in Section 6.2(e) below, the Contractor may not implement any change to the Construction Work (a “**Change**”), unless the parties execute a written agreement (a “**Change Order**”).

### **6.2. Change Orders.**

(a) As promptly as practicable after any proposal for a Change by the Owner or the Contractor, the Contractor shall prepare and deliver to the Owner an estimate of the financial, scheduling and performance impact of such Change.

(b) Upon the Owner’s written authorization following opportunity for Owner to review Contractor’s estimate pursuant to Section 6.2(a), the Contractor shall prepare a written proposal for the Change (a “**Change Proposal**”) setting forth (i) a description of the Change, (ii) the impact that such Change would have on (A) the Guaranteed Final Completion Date, (B) Guaranteed Savings and (C) the Milestone Schedule and (iii) a firm price for implementing such Change.

(c) If the Owner proposes a Change and the parties cannot agree on a firm price for implementing a Change Order pursuant to Section 6.2(b), then, subject to agreement on the matters set forth in subsection (b)(ii) above, the Owner will have the right to require the Contractor to implement such Change for a price equal to (i) the Actual Cost of implementation times (ii) \_\_\_\_%. As used herein, “**Actual Cost**” means the total of (A) the amount of all wages and salaries that the Contractor directly pays to its permanent and temporary employees that are engaged in the performance of the Construction Work at the Owner Facilities plus (B) payroll taxes and employee benefits actually paid in addition to (rather than as a deduction from) the amount set forth in (A) at a rate of \_\_\_\_% plus (C) the cost of Subcontractors, materials and equipment. In no event will Actual Cost include any amounts paid to a Subcontractor that is an

affiliate of the Contractor, which amounts are in excess of the price that would otherwise have been obtained from another Person in an arm's length transaction.

(d) The Contractor will be entitled to a Change Order as a result of an Uncontrollable Circumstance. In such case, the Contractor shall prepare and submit a Change Proposal to the Owner. If the parties cannot agree on a firm fixed price for the Change Order, the Contractor will implement the Change under the terms set forth in subsection (c) above. Any amount payable to the Contractor pursuant to this subsection (d) will be reduced so as to prevent double recovery by the net proceeds of insurance or other third-party payments received by the Contractor in connection with the Uncontrollable Circumstance.

(e) If in connection with a proposed Change Order under either Section 6.2(c) or (d) the parties cannot agree on any matters set forth in Section 6.2(b)(ii), either party may seek resolution of the Dispute pursuant to Section 12.9 (Dispute Resolution).

(f) Notwithstanding the provisions of this Article 5 to the contrary, if an emergency arises due to an Uncontrollable Circumstance and the Contractor (i) after making a reasonable, good faith attempt to notify the Owner, is unable to communicate with, or fails to hear from, the Owner regarding such emergency and (B) reasonably believes a Change is necessary to mitigate adverse effects of such Uncontrollable Circumstance, the Contractor may proceed with such Change, the Actual Cost of which may not exceed [●]. Any such change shall constitute a Change Order unless the Owner disputes the reasonableness of the Contractor's action or of the costs incurred by the Contractor in taking such action. Any such dispute shall be resolved in accordance with Section 12.7 below.

## **ARTICLE 7 HAZARDOUS SUBSTANCES**

### **7.1. Contractor's Responsibilities.**

(a) The Contractor will have the exclusive responsibility for the detection, identification, monitoring, handling, removal, transport, storage and disposal of, and all remediation of the Owner Facilities and the Owner Property made necessary from (i) any Hazardous Substances that were deposited or discarded thereon by the Contractor or a Subcontractor, (ii) any Hazardous Substances contained in lamps and ballasts that are replaced by the Contractor as part of the Construction Work and (iii) any other Hazardous Substances for which the Contractor has accepted responsibility in Schedule A (Scope of Construction Work).

(b) If the Contractor discovers Hazardous Substances at a Site for which the Owner is responsible under Section 7.2, the Contractor shall immediately cease Construction Work at such Site, remove all Contractor and Subcontractor personnel from such Site and notify the Owner. The Contractor may not undertake further Construction Work at such Site until authorized by the Owner.

(c) The Contractor shall enter into an agreement with an approved PCB ballast disposal company which will provide an informational packet, packing receptacles and instructions, labels and shipping materials, transportation, and recycling or incineration services for PCB ballasts to the Contractor. All capacitors and asphalt potting compound materials

removed from the Owner's PCB ballasts must be incinerated in a federally approved facility. The Contractor shall cause such disposal company to provide a Certificate of Destruction to the Owner. The Contractor will be responsible for the proper and legal management of any of the Owner's PCB ballasts removed as a result of the performance of the Construction Work until such time as the PCB ballasts are loaded onto an approved PCB ballast disposal company's vehicle for transportation.

(d) The Contractor shall enter into an agreement with an approved lamp disposal company for the disposal of lamps containing mercury which company will provide approved containers and materials required to label, transport, recycle or incinerate such lamps in accordance with Applicable Law, and provide the Owner with a copy of the manifest.

(e) The Owner shall designate in writing one or more individuals to sign manifests of ownership on the Owner's behalf for all PCB ballasts and mercury lamps removed from the Owner Facilities.

**7.2. Owner's Responsibilities.** The Owner will have the exclusive responsibility for the detection, identification, monitoring, handling, removal, transport, storage and disposal of, and all remediation of the Owner Facilities and the Owner Property made necessary by, any Hazardous Substances at the Owner Facilities and the Owner Property, other than Hazardous Substances for which the Contractor is responsible under Section 7.1(a) above.

**7.3. Contractor's Representation.** The Owner acknowledges that other than as is expressly stated in Section 7.1 above, the Work does not include the identification, abatement, cleanup, control, removal, or disposal of Hazardous Substances. However, the Contractor represents and warrants that any Hazardous Substances that it identified or knowingly encountered in conducting the Energy Audit in the Investment Grade Audit Report were reported by the Contractor to the Owner in the Investment Grade Audit Report pursuant to Section 2.3(d) above.

## **ARTICLE 8 CONSTRUCTION PRICE; PAYMENTS**

### **8.1. Construction Price.**

(a) In consideration for the performance of the Construction Work, the Owner shall cause the Trustee to pay to the Contractor \$[●] (as it may be adjusted by Change Orders from time to time, the "**Construction Price**"). The Construction Price will be paid as the Construction Work progresses in amounts determined in accordance with the Milestone Schedule.

(b) The parties acknowledge that the cost of completing the Energy Audit and the Investment Grade Audit Report will be included in the Construction Price and will be payable upon issuance of the Notice to Proceed.



## **8.2. Application for Payment.**

(a) Not later than the 10<sup>th</sup> day of each month, the Contractor shall submit to the Owner for its approval an Application for Payment with respect to milestones completed with respect to each Construction Unit in the prior month in accordance with Schedule P (Milestone Schedule), accompanied by such supporting information as may be reasonably necessary to substantiate the Contractor's right to payment of the amounts requested.

(b) Within 30 days of its receipt of an Application for Payment, the Owner shall, subject to Section 8.3 below, submit the Application for Payment to the Trustee for the payment of all undisputed amounts set forth thereon. If the Owner disputes any portion of the Application for Payment, the Owner shall authorize the Trustee to pay the undisputed amount and deliver notice to the Contractor stating its objections to the disputed amount and giving a detailed explanation therefor within such 30-day period. If the Contractor disputes any such objection, the dispute will be resolved pursuant to Section 12.7 below. If the dispute is resolved in favor of the Contractor, the Owner shall pay interest on the amount determined to be owed to the Contractor at the Late Payment Rate from the date on which such amount was originally due until the date paid.

**8.3. Retainage.** An amount equal to [●]% of the amount that would otherwise be due with respect to any Application for Payment relating to a Construction Unit (other than the Application for Payment for such retained amount) will be retained by the Trustee and will be payable to the Contractor on or after the date on which the Owner approves (or is deemed to have approved) a Unit Completion Certificate with respect to such Construction Unit. The Contractor may draw the total amount so retained by submitting an Application for Payment to the Owner.

## **ARTICLE 9 WARRANTIES; INTELLECTUAL PROPERTY; TITLE**

### **9.1. Warranties.**

(a) The Contractor warrants to the Owner that:

(i) all Work will be performed in accordance with this Agreement and conform to the Standard of Care; and

(ii) all Construction Work, including all materials and ECM Installations furnished as part of the Construction Work, will be new (unless otherwise specified in Schedule A (Scope of Construction Work), of good quality, free of defects or deficiencies in materials and workmanship and will be fit for its intended purpose.

(b) The foregoing warranties (the "**Warranties**") are exclusive and, except as provided in Section 9.2(b) below, expressly given in lieu of all other warranties, whether statutory, oral or implied (including warranties of fitness for particular purpose, merchantability, custom or usage or otherwise), the existence of which are hereby disclaimed by the Contractor and waived by the Owner.

(c) The Warranties with respect to each Construction Unit will be effective for a period of two years following the Construction Unit Completion Date for such Construction Unit (the “**Warranty Period**”); provided that the Construction Unit is operated and maintained in accordance with the ECM Installations Operation Manual.

## **9.2. Defects.**

(a) Following the discovery during the Warranty Period with respect to a Construction Unit of a defect or deficiency that is covered by the foregoing warranties (in either case, a “**Defect**”), the Contractor shall, as soon as practicable without materially interfering with the activities at the Owner Facilities, (i) correct such deficiency by, at its option, redesigning, repairing or replacing the defective Construction Work and (ii) demonstrate to the reasonable satisfaction of the Owner, by testing or otherwise, that the deficiency has been corrected.

(b) If the Contractor fails within a reasonable time following the discovery of any Defect during the Warranty Period and, after receipt of written notice from the Owner to begin, and to continue with diligence and promptness, to cure such Defect, the Owner may, without prejudice to any other remedy it may have and without the requirement to exercise any other remedy, cure such Defect. In such case, the Contractor will be liable to the Owner for the reasonably documented costs of correcting such Defect, together with interest thereon from the date incurred at the Late Payment Rate. The Contractor shall pay such amounts within 15 days of the Owner’s written demand therefor. The exercise by the Owner of any of its rights under this subsection (b) will not diminish any of the Contractor’s obligations hereunder or any other rights or remedies available to the Owner at law or in equity.

**9.3. Extension of Warranty Period.** The Warranty with respect to any portion of the Work in which a Defect was corrected during the Warranty Period for the relevant Construction Unit will be effective for a period ending on the later of (a) one year following the date of such correction or (b) the end of the original Warranty Period.

**9.4. Assignment of Subcontractor Warranties.** At the Owner’s request, the Contractor shall assign to the Owner any warranty from any Subcontractor with respect to any portion of the Construction Work that extends beyond the date that the Contractor’s Warranty with respect to such portion of the Construction Work expires.

## **9.5. Patent and Other Proprietary Rights.**

(a) The Contractor represents and warrants that it has all title, or has licenses through its Subcontractors, to all patents, proprietary information, know-how, trade secrets, trademarks and copyrights necessary to perform the Work and operate the ECM Installations (“**Contractor Proprietary Information**”).

(b) The Contractor hereby grants to the Owner for use in connection with the ECM Installations an irrevocable, royalty-free, non-exclusive license to all Contractor Proprietary Information. Other than as granted in this subsection (b), the Contractor retains all rights to Contractor Proprietary Information.

(c) If use of any part of the equipment, material, process or software incorporated into the ECM Installations is limited or prohibited by judicial order or decree because such use would constitute an infringement of the rights of a third party, the Contractor, at its sole expense, shall either (i) procure the necessary rights to use the infringing equipment, material, process or software or (ii) after consultation with the Owner, replace the same with substantially equal but non-infringing equipment, material, process or software or modify the same to be non-infringing; provided that any such substituted or modified equipment, material, process or software must meet all the requirements and be subject to all the provisions of this Agreement, and that such replacements or modifications will not modify or relieve the Contractor of its obligations under this Agreement. This provision will survive Final Completion, or termination of this Agreement prior thereto, and the expiration of the Warranty Period.

#### **9.6. Title.**

(a) All documents and other deliverables to be furnished to the Owner by the Contractor or by any Subcontractor and all modifications made by the Contractor to any documents supplied by the Owner to the Contractor will be the property of the Owner and the Owner will hold the copyright and all other property rights with respect thereto. The Contractor warrants that it is the owner of all copyrights on such documents and other deliverables (i) as the employer-for-hire of the person(s) in its employ who contributed to the creation of these materials or (ii) as the assignee under a written assignment of any and all third parties that contributed to the creation of these materials. Notwithstanding the foregoing, to the extent the Contractor furnishes standard equipment manuals or similar materials not created specifically in connection with the Work, the Owner will obtain ownership only of the copies actually furnished and will not hold the copyright thereto.

(b) The Contractor, in consideration of the Owner's execution of this Agreement and for other good and valuable consideration, receipt and sufficiency of which are hereby acknowledged, hereby assigns to the Owner all of the Contractor's right, title, and interest in and to the copyright of the documents and deliverables described in subsection (a) above, and in all renewals and extensions of the copyright that may be secured now or hereafter in force and effect in the United States of America or in any other country or countries. In no case may the Contractor use any of the documents or deliverables on another project.

(c) The Contractor, in consideration of the Owner's execution of this Agreement and for other good and valuable consideration, receipt and sufficiency of which are hereby acknowledged, hereby assigns to the Owner all of the Contractor's right, title, and interest in and to each item of the Construction Work, effective upon the earlier of (i) the incorporation of such item into the Construction Work or (ii) the Contractor's receipt of payment against an Application of Payment on which such item is identified. All items of the Construction Work to which title has passed to the Owner and that are stored in any location other than the Owner Facilities must be segregated and clearly marked as the property of the Owner. The Contractor warrants that no Construction Work will have been acquired by the Contractor, or by any Subcontractor, subject to an agreement under which an interest therein or any encumbrance thereon is retained by the seller or otherwise imposed on the Construction Work. The Contractor

shall warrant and defend such title, at the Contractor's expense, against the claims of third parties.

**9.7. Ownership of Existing Equipment.** Ownership of the equipment and materials existing at the Owner Facilities on the date of this Agreement will remain the property of the Owner even if they are replaced or its operation made unnecessary by the Work. The Contractor shall notify the Owner of all equipment and materials to be replaced at the Owner Facilities. The Contractor shall dispose of such equipment and materials off the Owner Property unless the Owner instructs otherwise by delivering notice to the Contractor within 10 days after receiving the Contractor's notice. The Owner will be responsible for and designate the location and storage for any equipment or materials to remain on the Owner Property.

## **ARTICLE 10 OPERATING PERIOD**

**10.1. Standards of Comfort.** The Owner is entitled to operate the ECM Installations in a manner so as to maintain the Standards of Comfort.

### **10.2. Material Changes.**

(a) If the Owner plans to undertake any activity, or otherwise becomes aware of a circumstance, that could reasonably be expected to result in a Material Change, it shall promptly deliver a notice to the Contractor describing such activity or circumstance. At the Owner's request and expense, the Contractor will provide to the Owner an estimate of the effect that such anticipated Material Change would have on the Owner's energy consumption. If an unanticipated Material Change occurs, the Owner shall notify the Contractor as soon as practicable thereafter.

(b) The Contractor and the Owner will work together to investigate, identify and, if applicable, correct the cause of any Material Change.

(c) If a Material Change occurs, the parties will agree on an adjustment to the Baseline Energy Consumption or the Standards of Comfort, or both, in accordance with the Measurement and Verification Plan, resulting in an adjustment to the Guaranteed Savings. In the event the parties cannot agree, either party may institute proceedings under Section 12.9 (Dispute Resolution).

**10.3. Utility Bills.** The Owner shall deliver to the Contractor copies of all invoices received by the Owner for energy consumption at the Owner Facilities promptly after receiving them.

### **10.4. Malfunctions and Emergencies.**

(a) The Owner shall notify the Contractor as soon as practicable after the Owner learns of:

(i) any malfunction in the operation of the ECM Installations or any other equipment that might materially affect Energy Savings;

- (ii) any interruption or alteration to the energy supply to a Site;
- (iii) any alteration or modification in any ECM Installations or its operation; or
- (iv) any emergency condition affecting the ECM Installations.

Such notice may be given by telephone promptly followed by written notice.

(b) The Contractor shall promptly proceed with corrective measures if required, or may proceed with such measures if permitted, pursuant to this Agreement. The Contractor will have the right to rectify performance deficiencies that may be identified by measurements taken over the term of this Agreement at its own expense.

**10.5. Actions by the Owner.** Owner shall perform the maintenance obligations set forth in Schedule K (Owner's Maintenance Responsibilities). Except for performance of those obligations and the actions permitted by this Section 10.5, the Owner may not move, remove, modify, alter, or change in any way the ECM Installations or any part thereof without the approval of the Contractor. If, due to an emergency, it is not possible or reasonable to notify the Contractor before taking any such actions, the Owner shall take reasonable steps to protect the ECM Installations from damage or injury and follow instructions for emergency action contained in the ECM Installations Operation Manual for such ECM Installations.

**10.6. ECM Installations Maintenance List.** The Contractor will have the right once a month, with prior notice, to inspect the Owner Facilities to determine if the Owner is complying with its obligations under Section 10.5 above. The Owner shall make the Owner Facilities available to the Contractor for and during each such inspection and will have the right to accompany the Contractor during such inspections. The Contractor shall complete the checklist set forth in Schedule L (Owner Facility Maintenance Checklist) during each such inspection and provide a copy thereof to the Owner. If the Owner fails to notify the Contractor within 30 days after receiving a checklist that it does not agree with any assessment made thereon by the Contractor, the Owner will be deemed to have agreed with Contractor's assessments as set forth on such checklist.

## **ARTICLE 11 PAYMENTS DURING OPERATING PERIOD**

**11.1. Measurement and Verification Fee.** The Contractor shall provide the Measurement and Verification Services for the Measurement and Verification Fee as set forth in Schedule R (Measurement and Verification Fee). Beginning on the Final Completion Date, the Owner shall make monthly payments to the Contractor in the amount set forth in Schedule R (Measurement and Verification Fee). The Measurement and Verification Fee will be prorated for any month that is less than a full calendar month.

**11.2. Monthly Statements.** On or before the first day of each month in a Savings Year, the Contractor shall submit a statement to the Owner for the Measurement and Verification Fee due with respect to such month. The Owner shall pay the amount due to the Contractor no later than the last day of such month.

**11.3. Payments to the Owner.** The Contractor shall pay to the Owner, for any Savings Year, the amount, if any, by which the Guaranteed Savings exceeds the total Energy Savings for such Savings Year (the “**Guaranteed Savings Payment**”).

**11.4. Adjustment to Savings Year.** After Final Completion and with 90 days’ prior notice, the Owner may adjust the first day of the Savings Year to coincide with the first day of the Owner’s fiscal year, and the parties shall mutually agree on the changes to this Agreement to effect such adjustment. If the first day of the Savings Year is adjusted to coincide with the first day of the Owner’s fiscal year, the Guaranteed Savings for any Savings Year of other than 12 months will be prorated accordingly.

**11.5. Energy Savings Statements.**

(a) For each quarter in each Savings Year other than the last quarter, within 60 days of its receipt from the Owner of copies of all invoices for such Savings Year, the Contractor shall deliver to the Owner a statement (the “**Quarterly Savings Statement**”) setting forth, with respect to each Site, the Energy Savings for such Site and the total Energy Savings for such quarter, together with all relevant calculations and supporting documentation. The Contractor shall provide such additional information as the Owner may reasonably request in connection with its review of the Quarterly Savings Statement.

(b) For each Savings Year, within 60 days of its receipt from the Owner of copies of all invoices for such Savings Year, the Contractor shall deliver to the Owner a statement (the “**Annual Savings Statement**”) setting forth, with respect to each Site, the Energy Savings for such Site and the total Energy Savings for such Savings Year, together with all relevant calculations and supporting documentation. The Contractor shall provide such additional information as the Owner may reasonably request in connection with its review of the Annual Savings Statement.

(c) Within 30 days of receiving the Annual Savings Statement, the Owner shall give the Contractor notice either (i) accepting the statement and requesting payment of the Guaranteed Savings Payment, if any, or (ii) rejecting the statement and stating its objections. If the Owner accepts the Annual Savings Statement, the Guaranteed Savings Payment, if any, will be due upon the Contractor’s receipt of such notice. If the Owner rejects the statement, the Contractor shall, within 30 days of receiving the Owner’s notice, either (A) recalculate the Energy Savings to satisfy the Owner’s objections, or (B) if the Contractor reasonably disputes the Owner’s objections, give the Owner notice of such dispute and pay any undisputed amounts. Any such dispute shall be resolved in accordance with Section 12.9 (Dispute Resolution) below.

**11.6. Additional Monitoring.** In addition to the Quarterly Savings Statements and Annual Savings Statement, the Owner may request that the Contractor prepare additional reports on a quarterly, semi-annual or annual basis, or may prepare such reports using its own personnel or by engaging a third party to prepare such reports, that analyze the savings achieved as a result of the implementation of one or more Construction Units with reference to actual Baseline Energy Consumption and ongoing metered data to determine if the Expected Metered Savings are at least equal to the aggregate of all Lease Payments, whether or not the dollar amounts of the Energy Savings are currently being achieved as measured by the methodology set forth in

Schedule F (Savings Measurement and Verification Plan; Methodology to Adjust Baseline). If the Owner requests such reports from the Contractor, the Contractor and the Owner shall mutually determine the amount to be paid by the Owner for such reports and such amount shall be submitted to the Owner for payment, together with the Measurement and Verification Fee in the monthly statement described in Section 11.2 above.

**11.7. Remedial Work.** If any report prepared pursuant to Section 11.6 above or any statement delivered pursuant to Section 11.5(a) above demonstrates that the Expected Metered Savings are reasonably expected to be less than the aggregate of all Lease Payments, the Contractor and the Owner will work together in good faith at no additional cost to the Owner to determine the reason for the discrepancy and ensure that the Owner achieves dollar savings for the term of this Agreement that are reasonably expected to equal or exceed the aggregate of all the Lease Payments. The Contractor may, at its sole cost and expense, modify installed ECM Installations or install additional energy conservation measures as agreed by the Owner to achieve Expected Metered Savings that meet or exceed the aggregate of all the Lease Payments. Modification of ECMs and installation of additional ECMs do not excuse payment of Guaranteed Savings Payments pursuant to Section 11.3, if Guaranteed Savings are not achieved by such modification or installation.

## **ARTICLE 12 TERM; FURTHER AGREEMENTS**

**12.1. Term.** This Agreement will be effective on the date set forth in the first paragraph hereof and will continue in effect until the [●] anniversary of the Final Completion Date, unless sooner terminated in accordance with its terms.

**12.2. Standard of Care.** The Contractor shall perform, or cause to be performed, the Work in accordance with the Standard of Care. As used herein “**Standard of Care**” means performance of the Work in compliance with all of the following standards:

- (a) specific standards, methods and requirements set forth in this Agreement;
- (b) all Applicable Laws applicable to the Work and Applicable Codes applicable to the ECM Installations and the Construction Work;
- (c) the requirements of all manufacturers warranties;
- (d) the application of professional engineering judgment;
- (e) Good Industry Practice; and
- (f) the Owner’s conduct requirements set forth Exhibit 9 (Owner’s Conduct Requirements).

If a discrepancy arises between any of the foregoing standards, the most stringent standard will apply.

**12.3. Interest on Overdue Obligations.** An amount payable hereunder that is not paid when due will bear interest, from the date on which it was due to the date on which it is paid, at the Late Payment Rate.

**12.4. Set-Off Rights.** The Owner may set off any amount due and payable to it by the Contractor against any amount payable to the Contractor hereunder.

**12.5. Recordkeeping; Audit Rights.** The Contractor shall keep and maintain records, books, accounts and other documents sufficient to reflect accurately and completely evidence of completion of all milestones that are the basis for any Application of payment made by the Contractor and all amounts which are the basis of a claim by the Contractor for reimbursement of additional costs for Construction Work under this Agreement. Such records shall include construction records, payroll records, receipts, memoranda, inventories, and accounts of every kind and nature relating to the accounting for the portion of the Construction Work that is a basis for a progress payment or a claim. The Owner and its agents and accountants shall have access to all such records for the purposes of verifying all construction activities that are the basis of a progress payment and all amounts that are the basis of a claim for additional payment and to reproduce any such records. The Contractor shall keep and preserve all such records for a period of at least three years after the Final Completion Date (or earlier termination of this Agreement) or such longer period as may be required by Applicable Law or is necessary in connection with any tax audit or establishing any item on a future tax return. The Contractor shall retain all records with respect to its Investment Grade Audit Report and its Measurement and Verification Services for at least three years after the later of the Final Completion Date or the date such records are created.

**12.6. [Reserved.]**

**12.7. Damages; Limitation of Liability.**

(a) The Guaranteed Savings Payment represents a liquidation of expected actual damages to the Owner if Energy Savings are less than the Guaranteed Savings; it is intended to avoid difficulties of proof with respect to such damages; and it is not intended as a penalty.

(b) Neither party will be liable under this Agreement to the other party for any indirect, special, punitive, incidental or consequential damages, including loss of anticipated profits, whether in contract or tort (including the negligence or strict liability of the party whose liability has been so limited) or otherwise except with respect to the Guaranteed Savings Payment.

**12.8. Insurance.**

(a) The Contractor, at its own expense, shall procure and maintain, and cause each Subcontractor performing Work at the Owner's Property to procure and maintain, during the term of this Agreement, the insurance described in Exhibit 5 (Required Insurance). All insurers must be licensed by the Commonwealth and rated A-minus or better by A.M. Best or a comparable rating service. At the Owner's request from time to time, the Contractor shall submit to the Owner (i) certificates of insurance evidencing that such insurance coverage is in



effect and/or (ii) a certified copy of any applicable policy of insurance. The Contractor (or Subcontractor as applicable) shall pay all deductibles under such policies.

(b) The Contractor and Subcontractors shall obtain policies that provide that they cannot be canceled or reduced or lapse without at least 30 days' prior notice to the Owner, provided that, if the Contractor is unable to obtain any such policy and the policy is cancelled or reduced or lapses, the Contractor shall instead notify the Owner of such action within two business days of becoming aware of it. Nothing in this subsection (b) derogates from the Contractor's obligation to maintain the insurance described in subsection (a) above.

(c) The foregoing provisions will not be construed in any manner as waiving or restricting the liability of the Contractor under this Agreement.

### **12.9. Dispute Resolution.**

(a) Any claim, dispute or other matters in controversy arising out of or relating to this Agreement (a "**Dispute**") will be resolved in accordance with this Section 12.9. Notwithstanding anything to the contrary in this Agreement, neither party will be required to await the resolution of dispute proceedings regarding the reasons for terminating this Agreement before exercising such party's termination rights.

(b) The parties shall endeavor to resolve a Dispute by mediation conducted by a mediator appointed by the American Arbitration Association under its Construction Mediation Rules. A request for mediation by a party must be made in a notice delivered to the other party, and filed with American Arbitration Association. The request may be made concurrently with the filing of any and all remedies at law or in equity but, in such event, mediation must proceed in advance of any other proceeding as filed in a court of law or equity in the Commonwealth, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or by court order. If the parties have chosen to arbitrate any Dispute and the mediation is stayed, they may nonetheless proceed to the selection of the mediator and agree upon a schedule for later proceedings.

(c) The parties shall share the mediator's fee and any non-court filing fees equally. The mediation shall be held in the Owner's offices, unless another location is mutually agreed upon. Agreements reached in mediation will be enforceable as settlement agreements in any court having jurisdiction thereof.

(d) If mediation is unsuccessful, the parties may proceed to address the Dispute at law or in equity as they deem appropriate.

(e) Pending final resolution of any Dispute (except a Dispute regarding the cause for terminating this Agreement), the parties shall continue to fulfill their respective obligations under this Agreement. During the pendency of any Dispute concerning the payment of money, the amount in controversy may not be paid or set off against unless and until the dispute is resolved in favor of the party claiming entitlement to the disputed payment.

**12.10. Confidentiality.** The Contractor's systems, means, cost, and methodologies of evaluating, implementing, accomplishing and determining energy savings and the terms of this

Agreement shall be considered privileged and proprietary information. The Owner shall use the same level of effort to protect and safeguard such information as it employs to safeguard its own confidential information. The Owner shall not disclose such proprietary information without the express written consent of an officer of the Contractor unless required to do so by statute or regulation. When any request for disclosure of such information is made under any applicable freedom of information act, the Owner will provide prompt verbal and written notice to the Contractor of the request for production and the timetable for production. In the event that the Owner is required to make a filing with any agency or other governmental body, which includes such information, the Owner shall notify the Contractor and cooperate with the Contractor in order to seek confidential treatment of such information included within any such filing or, if all such information cannot be protected from disclosure, to request that the Owner be permitted to redact portions of such information, as the Contractor may designate, from the portion of such filing that is to be made available to the public.

**12.11. No Liens.** The Contractor may not directly or indirectly create, incur, assume or suffer to be created by it any lien or encumbrance on the Owner Facilities, the ECM Installations or the Owner Property arising from the performance of the Work (any such lien or encumbrance, a “**Lien**”). The Contractor shall pay or discharge all demands for payment for labor, materials, supplies or other charges that, if unpaid, might give rise to a Lien. The Contractor shall discharge immediately of record, by bond or otherwise, any Lien. The Contractor shall immediately notify the Owner of the threat or imposition of a Lien. Upon the failure of the Contractor to pay or discharge a Lien, the Owner may pay or discharge such Lien and immediately recover from the Contractor the expenses incurred by the Owner in connection with such payment or discharge (including its own reasonable processing costs) plus interest at the Late Payment Rate on the amount of such payment and other expenses from the date incurred.

**12.12. Public Policy Provisions.**

(a) The wages and salaries paid to permanent and temporary employees employed in the performance of this Agreement shall at no time during the term of this contract be less than the prevailing minimum wage set forth in Schedule S (Prevailing Minimum Wage). The Contractor and each subcontractor shall keep an accurate record showing the name, craft and actual hourly rate of wage paid to each workman employed by such Person in connection with the performance of this Agreement, and such record shall be preserved for two years from date of payment.

(b) If any steel products are to be used or supplied in the performance of this Agreement, only Qualified Steel Products shall be used or supplied in the performance of this Agreement or any subcontracts hereunder.

**12.13. Taxes.**

(a) The Owner shall cooperate reasonably with the Contractor to ensure that purchases of materials or equipment required under this Agreement will enjoy any reasonable favorable tax considerations available under Applicable Law.

(b) The Contractor will be entitled to all tax deductions available under Section 179D of the Internal Revenue Code and the Owner agrees to execute any documents and to provide additional reasonable cooperation to the Contractor related to the Contractor's tax filings under Internal Revenue Code Section 179D. The Contractor will be designated the sole Section 179D beneficiary.

#### **12.14. Indemnification.**

(a) The Contractor hereby agrees to defend the Owner and each agency, officer, employee, agent or any other party acting for or on behalf of the Owner (the "**Indemnified Parties**") from, and indemnify and hold each of them harmless against, any and all losses, liabilities (including settlement costs and amounts, transfer taxes, documentary taxes, or assessments or charges made by any governmental authority), claims, damages, interest judgments, costs, or expenses, including reasonable fees and expenses of the Indemnified Parties' legal counsel or other professionals ("**Losses**") and to defend the Indemnified Parties in any suit, including appeals, (i) brought by third parties to the extent arising from or based on the negligence or willful misconduct of the Contractor, any of its subcontractors or any employee, agent or other party acting for or on behalf of the Contractor or any such subcontractor in connection with this Agreement or (ii) arising from or based on (A) any claim by a third party that the Contractor has infringed ownership rights in intellectual property, (B) the Contractor's failure to comply with the Standard of Care or (C) the presence of Hazardous Substances at the Owner Facilities or the Owner Property for which the Contractor is responsible under Section 7.1 above; provided that the Contractor will not be liable to the extent such Losses arise from negligence or willful misconduct on the part of the Indemnified Parties as determined in a final and nonappealable judgment of a court or competent jurisdiction.

(b) If any action is brought against an Indemnified Party in respect of which indemnity may be sought against the Contractor, the Indemnified Party shall promptly notify the Contractor in writing, and the Contractor shall assume the defense thereof, including the employment of counsel, the payment of all expenses and the right to negotiate and consent to settlement with the consent of the Indemnified Party, which consent may not be unreasonably withheld or delayed. An Indemnified Party will have the right to employ separate counsel in any such action and to participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of the Indemnified Party unless the employment of such counsel has been specifically authorized by the Contractor, or unless the representation of both the Contractor and the Indemnified Party would represent a conflict of interest. The Contractor will not be liable for any settlement of any such action effected without its consent, but if any such action is settled with the consent of the Contractor, or if there is a final judgment for the plaintiff in any such action, the Contractor agrees to indemnify and does hereby hold harmless the Indemnified Parties from and against any and all loss or liability by reason of such settlement or judgment.

**12.15. Requirements of the RSLPP.** The Owner and Contractor acknowledge that the this GSA is entered into pursuant to the RSLPP procurement conducted by the DVRPC on behalf of [46] municipalities in Southeastern Pennsylvania (the "**Participating Municipalities**"). As a part of the procurement process the Contractor has agreed to perform certain services for the Participating Municipalities as a group including electricity bill updates, lighting fixture procurement, installing the Project on a schedule that is co-ordinated with the installation

schedules of the other Participating Municipalities, identification of installation subcontractors, and conduct of progress meetings for the Participating Municipalities as a group. These and other similar services are set forth in Schedule T (RSLPP Program Requirements). The Contractor agrees to perform the RSLPP Program Requirements on behalf of Owner and the other Participating Municipalities, and Owner acknowledges that the Work will be performed in accordance with the RSLPP Program Requirements.

### **ARTICLE 13 EVENTS OF DEFAULT; TERMINATION**

**13.1. Events of Default by the Owner.** Each of the following events or conditions will be a “**Owner Event of Default**”:

(a) a failure by the Owner to pay any undisputed amount due the Contractor hereunder within 30 days after such payment becomes due;

(b) any other material failure by the Owner to perform or comply with the terms and conditions of this Agreement, including breach of any covenant contained herein and any such failure is not cured within 30 days after notice to the Owner specifying the failure and demanding that the failure be cured or, if the failure cannot reasonably be cured within such 30-day period, such longer period not to exceed 90 days, so long as the Owner is attempting to remedy the default as quickly as practicable; and

(c) any representation or warranty made by the Owner in this Agreement or the Program Agreement was false or misleading in any material respect when made and the Owner fails to correct any material adverse consequences to the Contractor directly caused thereby within 30 days after notice of such failure has been given to the Owner by the Contractor.

**13.2. Events of Default by the Contractor.** Each of the following events or conditions will be a “**Contractor Event of Default**”:

(a) a failure by the Contractor to pay any undisputed amount due the Owner hereunder within 30 days after such payment becomes due;

(b) any other material failure by the Contractor to perform or comply with the terms and conditions of this Agreement, including breach of any covenant contained herein and such failure is not cured within 30 days after notice to the Contractor specifying the failure and demanding that the failure be cured or, if the failure cannot reasonably be cured within such 30-day period, such longer period not to exceed 90 days, so long as the Contractor is attempting to remedy the default as quickly as practicable; and

(c) any representation or warranty made by the Contractor in this Agreement or in the Program Agreement was false or misleading in any material respect when made and the Contractor fails to correct any material adverse consequences to the Owner directly caused thereby within 30 days after notice of such failure has been given to the Contractor by the Owner.

**13.3. Remedies Available to Each Party.** If an Event of Default of either party occurs and is continuing, the other party may, in its sole discretion, take any one or more of the following actions:

- (a) terminate this Agreement;
- (b) exercise any and all of its rights under this Agreement; and
- (c) take any action or enforce any remedies available to it at law or equity to enforce its rights under this Agreement.

**13.4. Payment for Completed Work Upon Termination.** If this Agreement is terminated pursuant to Section 13.3 above, the Contractor will be entitled to payment for all Work completed by the Contractor up to the date of termination for which payment has not been made. If such termination occurs prior to Final Completion as result of a Contractor Event of Default, such payment will not be due until such time as the amount of the payment due to the Owner is determined pursuant to Section 13.5 below.

**13.5. Termination for Contractor Default.** If the Owner terminates this Agreement pursuant to Section 13.3 above for a Contractor Event of Default, the Owner will be entitled to complete the Construction Work with its own forces or with other contractors on a time-and-materials or other appropriate basis, and the Contractor shall pay to the Owner, within 30 days following demand, the excess, if any, of the commercially reasonable costs of completing the Construction Work over the Construction Price. Any such payment will not be due until the Owner can determine the amount of such payment.

**13.6. Insolvency of the Contractor.** It is recognized that if the Contractor becomes insolvent, or institutes or has instituted against it a case under Title 11 of the United States Code, or makes a general assignment for the benefit of its creditors, or if a receiver is appointed for the benefit of its creditors, or if a receiver is appointed on account of insolvency, such event or events could impair or frustrate the Contractor's performance of this Agreement. Accordingly, it is agreed that upon the occurrence of any such event, the Owner will be entitled to request of the Contractor or its successor assurances of future performance that are adequate in the opinion of the Owner. Failure to satisfy such requirement within 10 days following delivery of the request will entitle the Owner to terminate this Agreement under the terms of Section 13.5 above. Pending receipt of adequate assurances of performance and actual performance in accordance therewith, the Owner will be entitled to complete the Construction Work with its own forces or with other contractors on a time-and-materials or other appropriate basis, and the Contractor shall pay to the Owner, on demand, the excess, if any, of the reasonable costs of completing the Construction Work over the Construction Price.

**ARTICLE 14  
MISCELLANEOUS**

**14.1. Representations and Warranties.**

(a) The Owner represents and warrants that:

(i) it is a [\_\_\_\_\_];

(ii) it has the power, authority and legal right to enter into and perform this Agreement and its execution and delivery of, and its performance under, this Agreement will not violate its **[organizational documents]** or any judgment, order, law or regulation;

(iii) no consent, permission or approval is required for the valid execution and delivery by the Owner of this Agreement or for such party's performance hereunder, except those that have been obtained;

(iv) this Agreement has been duly authorized, executed and delivered by the Owner and constitutes a legal, valid and binding obligation of the Owner, enforceable in accordance with its terms, except to the extent limited by bankruptcy or similar laws or by general equitable principles concerning remedies; and

(v) there is no litigation or proceeding pending or, to the knowledge of the Owner, threatened against or affecting it that (A) seeks to enjoin the performance of its obligations under this Agreement or (ii) if adversely determined, would materially adversely affect its ability to, perform such obligations.

(b) The Contractor represents and warrants that:

(i) it is duly organized and in good standing in the jurisdiction of its organization and, if not organized in the Commonwealth, is licensed to do business as a foreign corporation in the Commonwealth;

(ii) it has the power, authority and legal right to enter into and perform this Agreement and the Contractor's execution and delivery of, and its performance under, this Agreement will not violate the Contractor's organizational documents or any judgment, order, law or regulation;

(iii) no consent, permission or approval is required for the valid execution and delivery by the Contractor of this Agreement or for the Contractor's performance hereunder, except those that have been obtained;

(iv) this Agreement has been duly authorized, executed and delivered by the Contractor and constitutes a legal, valid and binding obligation of the Contractor, enforceable in accordance with its terms, except to the extent limited by bankruptcy or similar laws or by general equitable principles concerning remedies; and

(v) there is no litigation or proceeding pending or, to the knowledge of the Contractor, threatened against or affecting it that (i) seeks to enjoin the performance of its obligations under this Agreement or (ii) if adversely determined, would materially adversely affect its ability to, perform such obligations.

**14.2. Representatives.**

(a) The Contractor shall appoint a Contractor representative who is authorized to execute Change Orders and to act generally on behalf of the Contractor.

(b) The Owner shall appoint an Owner representative who is authorized to execute Change Orders and to act generally on behalf of the Owner.

(c) Each party shall provide notice to the other party setting forth the name, address, day and night telephone numbers, telecopier numbers and e-mail addresses of its representative.

**14.3. Notices.**

(a) Unless otherwise specifically provided in this Agreement, all notices, consents, waivers, authorizations and approvals given under this Agreement must be in writing and may be telecopied, delivered by hand, mailed by first class, registered mail (return receipt requested) or sent by FedEx or similar courier service and addressed as follows:

If to the Contractor:

With a copy to:

If to the Owner:

With a copy to:

(b) Each party may change the address to which its communications are delivered by giving notice to the other party. Any communication given in accordance with this Section will be deemed to have been given to a party upon its receipt thereof.

**14.4. Relationship of the Parties.**

(a) It is understood that, in the performance of the Work, the Contractor will be, and is, an independent contractor, and is not an agent or employee of the Commonwealth or any of its agencies and will furnish such services in its own manner and method except as required by this Agreement. The Contractor will be solely responsible for, and shall indemnify, defend and save the Commonwealth and the Owner harmless from all matters relating to the payment of its employees, including compliance with social security, withholding and all other wages, salaries, benefits, taxes, exactions, and regulations of any nature whatsoever.

(b) The Contractor acknowledges that the Contractor and any Subcontractors, agents or employees employed by the Contractor will not, under any circumstances, be

considered employees of the Commonwealth or any of its agencies, and that they will not be entitled to any of the benefits or rights afforded employees of the Commonwealth, including sick leave, vacation leave, holiday pay, [Relevant Pension System] benefits, or health, life, dental, long-term disability or workers' compensation insurance benefits. Neither the Commonwealth nor the Owner will provide or pay for any liability or medical insurance, retirement contributions or any other benefits for or on behalf of the Commonwealth or the Owner or any of their respective officers, employees or agents.

(c) As an independent contractor, the Contractor has no authority to bind or commit the Commonwealth or the Owner. Nothing herein will be deemed or construed to create a joint venture, partnership, fiduciary or agency relationship between the parties for any purpose.

(d) The Owner acknowledges and agrees that the Contractor has not acted as a municipal financial advisor to the Owner and that the Owner has not relied on the Contractor for any matters relating to the financing of the Work.

**14.5. Waivers.** Any waiver of, or consent to depart from, the requirements of any provision of this Agreement will be effective only if it is in writing and signed by the party giving it, and only in the specific instance and for the specific purpose for which it has been given. No failure on the part of either party to exercise, and no delay in exercising, any right under this Agreement will operate as a waiver of such right.

**14.6. Assignment.** This Agreement may not be assigned by either party, directly or by merger or other operation of law, without the consent of the other party, which consent shall not unreasonably be withheld. Any purported assignment of this Agreement in violation of this Section 14.6 will be null and void.

**14.7. Binding Effect.** This Agreement will be binding upon, and inure to the benefit of, the parties and their respective successors and permitted assigns.

**14.8. Severability.** If any provision of this Agreement is determined to be invalid, illegal or unenforceable in any respect, the parties shall negotiate in good faith and agree to such amendments, modifications or supplements of or to this Agreement or such other appropriate actions as may, to the maximum extent practicable in light of such determination, implement and give effect to the intentions of the parties as reflected herein, and the other provisions hereof will, as so amended, modified or supplemented, or otherwise affected by such action, remain in full force and effect.

**14.9. Complete Agreement.** This Agreement and the Program Agreement constitute the entire agreement between the parties relating to the subject matter hereof and supersede all prior agreements (including the Energy Audit Agreement), negotiations, discussions and understandings, written or oral, between the parties as to the subject matter hereof.

**14.10. Amendment.** This Agreement may not be amended or modified except by a written instrument signed by the parties.

**14.11. Survival.** The following provisions will continue in full force and effect notwithstanding the termination of this Agreement pursuant to Section 12.1 or earlier termination



in accordance with its terms: Section 4.8 (Responsibility for Damages), Section 12.3 (Interest on Overdue Obligations), Section 12.5 (Recordkeeping; Audit Rights); Article 9 (Warranties; Intellectual Property; Title), Sections 10.2, 10.3 and 10.4 (relating to indemnification), Article 13 (Events of Default; Termination), Section 12.7 (Damages; Limitation of Liability), Section 12.9 (Dispute Resolution), Section 12.10 (Confidentiality) and this Article 14.

**14.12. No Third-Party Beneficiaries.** Nothing in this Agreement provides any benefit to any third party or entitles any third party to any claim, cause of action, remedy or right of any kind.

**14.13. Further Assurances.** The parties shall execute and deliver all documents and perform all further acts that may be reasonably necessary to effectuate the provisions of this Agreement.

**14.14. Governing Law.** This Agreement will be governed by, and interpreted and enforced in accordance with, the laws of the Commonwealth (excluding any conflict of laws rule or principle that might refer such interpretation to the laws of another jurisdiction). Each party consents to jurisdiction and venue in courts of the Commonwealth in jurisdictions in which the Owner is located.

**14.15. Headings.** Headings and subtitles used in this Agreement are for the purpose of convenience only, and no heading or subtitle may be construed to modify or be used to interpret the text of any section.

**14.16. Counterparts.** This Agreement may be executed in any number of counterparts that, taken together, will constitute one and the same agreement.

[Signature Page to Follow]

As evidence of their intent to be legally bound, the Contractor and the Owner have each caused this Guaranteed Savings Agreement to be duly executed by their respective duly authorized representatives as of the day and year first written above.

[OWNER]

By: \_\_\_\_\_  
Name:  
Title:

[CONTRACTOR]

By: \_\_\_\_\_  
Name:  
Title:

[SIGNATURE PAGE TO THE GUARANTEED SAVINGS AGREEMENT]

## **Exhibit 1**

### **Forms of Payment and Performance Bonds**

[See Exhibit 1 to the Investment Grade Audit Report]

## **Exhibit 2**

### **Contractor Documents**

#### ECM Installations

To the extent applicable, preliminary design documents consisting of design criteria, preliminary design drawings, outlining specifications and other documents to fix and describe the size, quality and character of the ECM Installations, their architectural, structural, mechanical and electrical systems, and the materials and other elements of the ECM Installations as may be appropriate.

To the extent applicable, construction documents including technical drawings, schedules, diagrams and specifications, job books containing calculations used in the final design, but excluding shop drawings, setting forth in detail the requirements for construction of the ECM Installations that—

- establish the scope of the ECM Installations in greater detail;
- provide information necessary for the use of those in the building trades; and
- include documents necessary for regulatory agency approval.

To the extent applicable, record or as-built drawings showing significant changes made during construction.

#### ECM Installation Operation Manual

The ECM Installation Operation Manual shall (a) include the full technical information and non-technical explanations so the Owner can use and operate each ECM Installation for its intended purpose, (b) the operation and maintenance requirements for each ECM Installation and (c) at a minimum, include the following to the extent applicable:

- operation and maintenance requirements applicable to all portions of the ECM Installations, and minimum and maximum operating ranges of all ECM Installations;
- sequence of events required for startup, operation and shutdown of all ECM Installations under normal and emergency conditions;
- interrelationship of items of equipment and processes;
- routine maintenance activities and schedule for all equipment and buildings necessary for the continuous safe and efficient operation of the ECM Installations, including the type, quantity and sources of materials required for such maintenance; and

list of recommended spare parts.

**Exhibit 3**

**Form of Program Agreement**

[See attached]

**Exhibit 4**

**Form of Application for Payment**

To: [ \_\_\_\_\_ ] (the “Owner”)

From: [ \_\_\_\_\_ ] (the “Contractor”)

Pursuant to Section 8.2 of the Guaranteed Savings Agreement, dated as of \_\_\_\_\_, 20[\_\_\_] between the Owner and the Contractor (the “**Guaranteed Savings Agreement**”), the Contractor hereby applies for Amount Payable set forth below, such amount representing the amount due for having achieved the milestones identified below.

Milestones [list separately]	Payment Amount [list separately]
Total Milestone Amounts	
Less [●]% Retainage	
Amount Payable	

On behalf of the Contractor, I hereby certify as follows:

1. the Construction Work for which payment is sought (a) has been performed to the extent indicated in this Application for Payment, as determined pursuant to Schedule 7 (Milestone Schedule) of the Guaranteed Savings Agreement, and substantially in accordance with the Guaranteed Savings Agreement and (b) has not been the subject of a previous Application for Payment;
2. there are no liens or encumbrances on the Owner Property or the Owner Facilities arising from the performance of the Construction Work; and
3. the Guaranteed Savings Agreement is in full force and effect and no event of default on the part of the Contractor exists thereunder and no event or condition exists that, with the giving of notice or the passage of time, would constitute such an event of default.

Capitalized terms used in this Application for Payment are defined in the Guaranteed Savings Agreement.

[CONTRACTOR]

By: \_\_\_\_\_  
Authorized Representative

### **Exhibit 5**

#### **Required Insurance**

The Contractor shall procure and maintain and cause each Subcontractor performing Work at the Owner's Property to procure and maintain the following insurance:

1. Workers' Compensation and Employers' Liability.
2. Workers' Compensation—statutory limits.
3. Employers' Liability limits as follows:
  - a. Bodily Injury by accident \$1,000,000 each accident
  - b. Bodily Injury by disease \$1,000,000 policy limit
  - c. Bodily Injury by disease \$1,000,000 each employee
4. Commercial General Liability.
  - a. Occurrence form.
  - b. The limit shall not be less than \$5,000,000, comprised of (i) \$2,000,000 on a per-occurrence form and (ii) \$3,000,000 on either a per-occurrence or claims-made form, in the aggregate for bodily injury, property damage, personal injury and products/completed operations.

This limit may be satisfied by primary or excess insurance or any combination of primary or excess insurance.
  - c. Coverage shall:
    - i. by "Additional Insured" endorsement add as insureds the Owner, the Issuer, and the directors, officers, agents and employees of each of them with respect to liability arising out of the Work.
    - ii. be endorsed to specify that the Contractor's insurance is primary and that any insurance or self-insurance maintained by the Owner will not contribute with it.



- iii. include a severability of interest clause.
- 5. Business Auto.
  - a. “Owned, Hired and Non-owned” basis.
  - b. The limit shall not be less than \$2,000,000 for each accident and in the aggregate for bodily injury and property damage. This limit may be satisfied by primary or excess insurance or any combination of primary or excess insurance.
- 6. All Risk Builders Risk Insurance.
  - a. An All Risk Builders Risk insurance policy including earthquake and flood include start-up and testing for installed equipment, coverage for materials and equipment while under the care, custody and control of the Contractor during performance of the work, at the site, offsite or while in transit to the site.
  - b. Coverage shall be written to cover the full replacement cost of the property, except earthquake and flood, which may be subject to sublimits that are reasonably available.
- 7. Additional Insurance Provisions.
  - a. The Contractor shall use commercially reasonable efforts to make sure that the insurance documentation shall state that coverage shall not be cancelled, reduced or otherwise materially changed except after 30 days prior written notice (10 days for non-payment of premium), provided that, if the Contractor is unable to obtain such documentation and the policy is cancelled or reduced or lapses, the Contractor shall instead notify the Owner of such action within two business days of becoming aware of it.
  - b. The insurance carrier must be authorized to do business in the Commonwealth and carry an A.M. Best’s Insurance Guide rating of “A-minus” or better.
- 8. Form and Content.

**With respect to any additional insured, provide that such insurance will not be invalidated by any action or inaction of another insured and will insure each such insured regardless of any breach or violation of any warranty, declaration or condition contained in such insurance by the primary named insured.**

**Exhibit 6**  
**Form of Lease Agreement**

[To come.]

**Exhibit 7**

**Form of ECM Price Proposal**

ECM	Fixed Price	ECM Price Fixed Until (date)

**Exhibit 8**

**Form of Savings Estimate**

Escalation Rates by Savings Category

Electric	Water
Natural Gas	Other
Steam	Annual Service Fee

Year	Electric Cost Savings	Natural Gas Cost Savings	Fuel Oil Cost Savings	Steam Cost Savings	Water Cost Savings	Operational Cost Savings	Other	Total Cost Savings	Guaranteed Cost Savings	Annual Service Fees	Financing Payment	Net Savings
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
Total												

**Exhibit 9**

**Owner's Conduct Requirements**

**Exhibit 10**

**Employee's Qualifications**

## **Exhibit 11**

### **Requirements of Critical Path Schedule**

**Schedule A through Schedule E**

[See Schedules A through Schedule E of the Investment Grade Audit Report]



## Schedule F

### Savings Measurement & Verification Plan; Methodology to Adjust Baseline

#### Instructions for Completion of the Savings Measurement & Verification Plan PennSEF Statement on M&V

PennSEF observes the monitoring and verification (M&V) definitions, standards and measurement methods adopted by the International Performance Measurement & Verification Protocol (“IPMVP”), currently maintained and managed by the Efficiency Valuation Organization. The U.S. Department of Energy led the effort to create the IPMVP and its “M&V Guidelines:

Measurement and Verification for Federal Energy Projects Version 3.0” follows the IPMVP definitions, standards and measurement methods

Key concepts of the IPMVP which are important to PennSEF Participants:

- **Baseline Period:** The period chosen to represent operation of the facility or system before implementation of a CM. For PennSEF, the Baseline Period is normally to be based on three years of utility data.
- **Reporting Period:** The period following implementation of a CM when savings reports adhere to the IPMVP. PennSEF Participants and the PennSEF Program are to receive quarterly and annual reports during the period of debt service for each measure or blended measure.
- **Types of Savings:** Generally, two types of savings are defined by the IPMVP:
  - *Avoided Energy/Water Use*  
The reduction in energy/water use occurring in the reporting period, relative to what would have occurred if the facility had been equipped and operated as it was in the baseline period. Cost avoidance is the monetary equivalent of avoided energy/water use.
  - *Normalized Savings*  
The reduction in energy/water use or cost occurring in the reporting period, relative to what would have occurred if the facility had been equipped and operated under a normal set of conditions that may be defined as a long term average. Normal conditions may also be set as those prevailing during the baseline period, especially if they were used as the basis for predicting savings.

- **Measurement and Verification (M&V):** The process to reliably determine actual savings within a facility, system or equipment by comparing resource use before and after implementation of a project.

PennSEF adopts the four M&V Options defined by the IPMVP for the measurement of energy savings. These are briefly summarized here:

- **Option A: Retrofit Isolation I**
  - Based on a measurement of one key parameter.
  - Equation:

$Savings = Stipulated\ Value \times [Lifetime\ in\ years\ of\ the\ installed\ measure]$

- Cost of performing Option A is usually less than other options.
- Common Applications: Lighting
- **Option B: Retrofit Isolation 2**
  - Measures all major parameters relevant to the performance of the retrofit.
  - Equation:
 
$$Savings = [Baseline\ Period\ Energy/Water\ Use] - [Reporting\ Period\ Energy/Water\ Use]$$
  - Cost of performing Option B is typically more costly than Option A.
  - Common Applications: Boilers or other devices whose resource use can be isolated from other devices or activities contributing to a site's or all resource use.
- **Option C: Whole Facility**
  - Involve the use of utility meters, whole-facility meters or sub-meters.
  - Equation:
 
$$Savings = [Baseline\ Period\ Energy/Water\ Use] - [Reporting\ Period\ Energy/Water\ Use] \pm f(\text{weather, occupancy, facility use, etc.})$$
  - Cost of Option C depends on the source of the energy data, and the difficulty of tracking static factors. It may adjust for changes in such factors as weather, occupancy, and facility use. Typically, the cost of performing Option C M&V is more costly than that for Options A or B but the latter may not be relevant or useful to measuring savings for which Option C has been designed.
  - Common Applications: Where energy performance of the whole facility will be assessed, not only the performance of the CMs.
- **Option D: Calibrated Simulation**
  - Estimate facility energy use based on computer simulation with detailed comparisons made to calibration data.
  - Equation:
 
$$Savings = [Baseline\ energy/water/wastewater\ from\ the\ calibrated\ model\ without\ CMs] - [Reporting\ period\ energy/water\ from\ the\ calibrated\ model\ with\ CMs]$$
  - If actual energy data are available for either baseline or reporting period,
  - $Savings = [Baseline\ energy/water/wastewater\ from\ the\ calibrated\ model\ without\ CMs] - [Actual\ calibration-period\ energy/water\ (with\ CMs)] \pm [Calibration\ error\ in\ the\ corresponding\ calibration\ reading]$
  - Option D is costly due to challenges of accurate computer modeling and calibration.
  - Common Applications: Where energy data of either baseline or reporting period, but not both, are unavailable or unreliable, such as a new or significantly remodeled or repurposed facility.

## SUMMARY OF IVMVP OPTIONS

IPMVP Option	How Savings Calculated	Typical Applications
A. Retrofit Isolation: Key Parameter Measurement	Measurements of key operating parameters of baseline and reporting period; routine adjustments are mainly considered.	A lighting retrofit.
B. Retrofit Isolation: All Parameter Measurement	Same as above, plus engineering computations or proxies of energy use.	A variable-speed drive and controls to motor to adjust pump flow.
C. Whole Facility	Analysis of whole facility baseline and reporting period meter data; routine and non-routine adjustments need to be considered.	A facility where multifaceted energy management programs affect many systems.
D. Calibrated Simulation	Energy use simulation and calibration with hourly or monthly utility billing data.	A facility with many systems affected by multifaceted energy program but no meter in baseline period.

Determining which of the four IPMVP Options to use for a particular CM or Project requires careful consideration of several factors. Generally speaking, accuracy improves when Options B-D are used, compared to Option A; but so does M&V cost. If a CM or Project involves uncertainties which could affect their economics, Options C&D can better capture the effects of risk.

PennSEF offers the following Guidelines with the caveat that many factors need to be considered and, therefore, the Guidelines may not be suitable in specific cases.

#### **GUIDELINES FOR CHOOSING IVMVP OPTIONS: BALANCING UNCERTAINTY AND COSTS**

- **Low Energy Savings Variation & Low- to Moderate-Cost CM**
  - *Option A may be preferred especially if the reporting period is short.*
  -
- **Possible High Energy Savings Variation & Low- to Moderate-Cost CM**
  - *Option B may be preferred due to the relatively low cost of M&V especially if uncertainty of performance is low.*
- **Low Energy Savings Variation & High-Cost CM**
  - *Option C may be preferred due to lower M&V cost than Option D while being able to render accurate estimates of savings which are expected to be high.*
- **High Energy Savings Variation & High-Cost CM**
  - *Options C and D may be preferred on accuracy and uncertainty grounds, with Option D possibly preferred because of its ability to rigorously address accuracy and uncertainty issues.*

PennSEF requires Participants to demonstrate for the appropriate Option(s) that the energy savings of the Project shall be greater than annual debt service. Operational and maintenance savings are not included in this evaluation.

The IPMVP manual and related documents can be found at [http://www.evo-world.org/index.php?option=com\\_content&view=article&id=272&Itemid=379&lang=en](http://www.evo-world.org/index.php?option=com_content&view=article&id=272&Itemid=379&lang=en) .

**Schedule G through Schedule N**

[See Schedules G through Schedule N of the Investment Grade Audit Report]

## **Schedule O**

### **Commissioning and Performance Tests**

- Commissioning of each item of equipment and each ECM Installation in accordance with manufacturer's requirements, Applicable Codes and applicable standards.
- Safety inspection and testing of all Unit connections and safety monitoring or risk prevention measures, including safety shut-off or pressure release equipment, for circulation or use of electricity, steam, water, fuel and other working fluids, and all mechanical systems.
- Testing of all equipment and each ECM Installation to demonstrate the full range of required function.
- Testing of each integrated system that includes one or more new ECM Installations to demonstrate performance consistent with achieving the Guaranteed Savings without interruption over a statistically significant period.
- Demonstrating compliance with all Applicable Law and permit requirements during the entire testing period.
- Demonstrating achievement of LEED or other agreed certification standards.

## **Schedule P**

### **Milestone Schedule**

This schedule lists construction milestones against which payment will be made. The list can be detailed so as to permit payment for small increments of construction. Each milestone must be capable of independent audit and not based on judgment. Percent complete is not an auditable standard unless based on installation of a specific number of units of identical material or equipment against a fixed total of such units in the Scope of Work.

**Schedule Q**  
**Approved Subcontractors**



**Schedule R**  
**Measurement and Verification Fee**

**Schedule S**  
**Prevailing Minimum Wage**



**APPENDIX C  
FORM OF ACKNOWLEDGEMENT OF ADDENDA**

**ACKNOWLEDGEMENT OF CHANGES**

The undersigned respondent (“**Respondent**”) hereby acknowledges receipt of the following notices, revisions or addenda to the Request for Proposals for the GSA issued on \_\_\_\_\_, 2015 by the [Government Unit], Pennsylvania (the “**RFP**”). By indicating the date of receipt, Respondent acknowledges that the submitted response to the RFP (the “**Response**”) takes into account the provisions of such notice, revision or addendum. Notwithstanding any provision to the contrary in the RFP or in any notice, revision or addenda thereto, the record of notice of the [Government Unit] to Respondent will take precedence. Respondent’s failure to include provisions of changes in its Response may result in the rejection of the Response.

<b>Addendum Number or Title of Addendum</b>	<b>Method of Receipt (mail, fax, picked up)</b>	<b>Date Received</b>

**Acknowledgement by Respondent:**

Write the word “NONE” if no addenda have been issued: \_\_\_\_\_

Name of Respondent: \_\_\_\_\_

By Authorized Representative:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Print or Type Name and Title: \_\_\_\_\_

**FAILURE TO COMPLETE THIS FORM PROPERLY MAY RESULT  
IN THE REJECTION OF RESPONDENT’S RESPONSE.**

**APPENDIX D**  
**SAMPLE LETTER OF INTENT**

(NOTE: To be typed on Respondent's Letterhead. The RSLPP will accept no modifications to the language of this letter.)

\_\_\_\_\_, 2015

Liz Compitello  
Senior Research Analyst  
Delaware Valley Regional Planning Commission  
190 N. Independence Mall West  
Philadelphia, PA 19106

RE: Response to Request for Proposals (the "**RFP**"), dated \_\_\_\_\_, 2015, issued by the DVRPC, on behalf of the municipalities participating in the Regional Streetlight Procurement Program for a Guaranteed Savings Agreement ("**GSA**")

The undersigned, as Respondent (the "**Respondent**"), has submitted the attached response (the "**Response**") to the above-referenced RFP.

The Respondent hereby makes the following statements:

1. Respondent agrees as a condition of a submitting a proposal not to contact or solicit, outside of the scope of the RSLPP, any of the 45 municipalities participating in this program until GSAs have been executed – unless the ESCO has already responded to an RFP that was issued by a participating municipality prior to the RSLPP RFP.
2. The Response contains accurate, factual and complete information.
3. Respondent, if selected, shall enter into the GSA.
4. Respondent shall participate in good faith in the selection process as described in the RFP and adhere to the selection schedule outlined in this RFP.
5. Respondent acknowledges that all costs incurred by it in connection with the preparation and submission of the Response prepared and submitted in response to the RFP, or any negotiations which result therefrom, shall be borne exclusively by the Respondent.
6. Respondent hereby declares that the only persons participating in this Response as principals are named herein and that no other person other than those mentioned herein has participated in the preparation of the Response or in any contract to be entered into with respect thereto. Additional persons may subsequently be included as participating Principals, but only if acceptable to the group of municipalities represented in this RFP.
7. Respondent declares that this Response is made without connection with any other person, firm or parties that have submitted a Response, except as expressly set forth

below and that it has been prepared and has been submitted in good faith and without collusion or fraud.

8. Respondent acknowledges and agrees that DVRPC, on behalf of the group of municipalities represented in this RFP may modify, amend, suspend and/or terminate the selection process (in its sole judgment) and that, notwithstanding efforts of the group of municipalities and the Respondent, the group of municipalities or individual municipalities within that group may decide not to proceed with the GSA. In either case, neither the group of municipalities nor its officers, agents or representatives will have any liability to the Respondent for any costs incurred by the Respondent with respect to the activities described in the RFP.
9. Respondent agrees that (a) by submitting a Response to the RFP, it is agreeing to all conditions, restrictions, releases and other provisions contained therein and (b) the submission of a Response constitutes a conclusive and binding representation by a Respondent that such Respondent has agreed to, and complied with, every requirement of the RFP.

Respondent shall sign and complete the space provided below. If a joint venture, authorized representatives of each company must sign.

[NAME OF RESPONDENT]

By: \_\_\_\_\_  
Name  
Title:

**APPENDIX E  
LIST OF REQUIRED ITEMS**

<b>Item</b>	<b>Initial*</b>
Response containing the items required in Section 3	
Letter of Intent	
Acknowledgment of Addenda	
Pennsylvania Certificate of Business Registration	
Surety Company Certificate	
Statement of Corporate Ownership	

\* To be initialed by the person who signs the Letter of Intent to indicate that applicable item has been included in the Response

<div style="background-color: red; color: white; padding: 10px; text-align: center;"> <h1>RSLPP</h1> <h2>Product &amp; Pricing Matrix</h2> </div>		Baseline Solutions					
		Cobrahead Fixture Style					
		70W HPS	100W HPS	150W HPS	250W HPS	400W HPS	Total
			100W MH	175W MH	250W MH	400W MH	
	100W MV	175W MV	250W MV	400W MV			
<b>ESCO Information</b>							
	ESCO Name						
	Installation Sub-Contractor Name						
	Distribution Partner Name (not required)						
<b>LED Replacement Fixture Product Submittals</b>							
<b>General Information</b>							
	Manufacturer						
	Model #						
	Housing Finish Color						
	Tenon Nominal Pipe Size						
	Nominal Luminaire Weight						
	Nominal Luminaire EPA						
	DLC Listed (Y/N)						
	Make/model of LED light source(s)						
<b>Electrical Specifications</b>							
	System Watts						
	Nominal Luminaire Input Voltage						
	System Drive Current (mA)						
	Driver Type	0-10V	0-10V	0-10V	0-10V	0-10V	
	Driver Life						
<b>Photometric Performance</b>							
	Initial Delivered Lumens						
	IES Distribution Type	III	III	III	III	III	
	BUG Rating - B (backlight)						
	BUG Rating - U (uplight)						
	BUG Rating - G (glare)						
	CRI						
	CCT						
<b>Depreciation and Life Ratings</b>							
	IES LM-80 Test Duration (Hours)						
	Depreciation % @ 36,000 Hours						
	L90 Rated Life (calculated)						
	L80 Rated Life (calculated)						
	L70 Rated Life (calculated)						
	Warranty (years)	10	10	10	10	10	
<b>Efficiency Calculations</b>							
	Lumens/Watt (initial)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
	Lumens/Watt (L90)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
	Lumens/Watt (L80)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	



<b>RSLPP</b> <b>Product &amp; Pricing Matrix</b>		Baseline Solutions					
		Cobrahead Fixture Style					
		70W HPS	100W HPS	150W HPS	250W HPS	400W HPS	Total
			100W MH	175W MH	250W MH	400W MH	
	100W MV	175W MV	250W MV	400W MV			
Lumens/Watt (L70)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
<b>Control Specifications</b>							
ANSI Receptcle Pin Configuration	5	5	5	5	5		

<b>RSLPP</b> <b>Product &amp; Pricing Matrix</b>		Baseline Solutions					Total
		Cobrahead Fixture Style					
		70W HPS	100W HPS	150W HPS	250W HPS	400W HPS	
			100W MH	175W MH	250W MH	400W MH	
	100W MV	175W MV	250W MV	400W MV			
<b>Fixture Unit Pricing</b>							
<b>Distributor Fixture Unit Cost</b>							
	Quantity <100						
	Quantity 100-500						
	Quantity 500-1000						
	Quantity 1000+ *						
	Price Effective Period (days)						
<b>Fixture Unit Cost ADDERS (enter N/A if not available or enter 0 if included in base spec fixture price)</b>							
	0-10V Driver	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	DALI Driver						
	3-Pin ANSI( Deduct)						
	5-Pin ANSI *	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7-Pin ANSI						
	Photocell*						
	Shorting cap						
	IES Type II (if available)						
	House Side Shield						
	Field Adjustable Light Level Options (N/A = Not Available)						
	ANSI C136.31 vibration level 2 (Level 1 assumed base specification)						
<b>Control System Unit Cost Adders</b>							
	Control Manufacturer						
	Control System Family Name						
	Fixture Control Node						
	Control Gateway (if required)						
	Control Server (if required)						
	Control Software (if required)						
<b>ESCO Material Markups</b>							
	ESCO Material Handling % *						
<b>Installation Labor Unit Prices/Fixture</b>							
	Fixture Replacement*						
	Fixture Removal Only						
	Fixture Add Only						
	Arm Removal Only						
	Arm Add Only						
	Overhead Power Connection						
	Underground Power Connection						
	Tree Branch Trimming						
<b>Total Hard Costs</b>							



<b>RSLPP</b> <b>Product &amp; Pricing Matrix</b>	Baseline Solutions					
	Cobrahead Fixture Style					
	70W HPS	100W HPS	150W HPS	250W HPS	400W HPS	Total
		100W MH	175W MH	250W MH	400W MH	
	100W MV	175W MV	250W MV	400W MV		
<b>Operating Cost Savings</b>						
<b>Energy Savings</b>						
Assumed Existing Watts/Fixture						
Watt Savings/Fixture	0.0	0.0	0.0	0.0	0.0	
Assumed Annual Operating Hours	4,100	4,100	4,100	4,100	4,100	
Total kWh Savings	0	0	0	0	0	0
Assumed Average \$/kWh						
<b>Total Annual Energy Savings</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Energy Only Payback</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>
<b>Maintenance Savings</b>						
Avoided Annual Relamping Product Costs/Fixture						
Avoided Annual Relamping Labor Costs/Fixture						
Annual Relamp Probability %						
Avoided Annual Reballast Product Costs/Fixture						
Avoided Annual Reballast Labor Costs/Fixture						
Annual Reballast Probability %						
<b>Total Maintenance Savings</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Payback</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>
<b>Annual Net Savings</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>	<b>#NUM!</b>

Fields Requiring ESCO Input

\* Fields used in total material price calculation

**APPENDIX G  
PROJECT HISTORY AND CLIENT REFERENCES FORM**

On separate 8-1/2" x 11" pages describe at least ten (10) completed guaranteed energy or water savings contracting projects in repayment with at least one (1) complete year of savings performance data currently under contract with the ESCO. To the extent possible, limit your response to those projects that have been managed directly by the specific branch, division, office or any individual in such branch, division or office who will be specifically assigned to work on the Program.

<b>Project Name and Location</b>	
<b>Number of Buildings</b>	
<b>Primary Use</b>	
<b>Total square footage</b>	
<b>Project Dollar Amount (installed project costs)</b>	
<b>Source of Project Financing</b>	
<b>Primary CMs Installed &amp; ESCO Services Provided</b>	
<b>Construction Start &amp; End Dates</b>	
<b>Contract Start &amp; End Dates</b>	
<b>If the project was not completed on schedule, please explain.</b>	
<b>Dollar Value of Projected Annual Energy Savings</b>	
<b>Dollar Value of Guaranteed Annual Energy Savings</b>	
<b>Dollar Value and Type of Annual Operational Cost Savings (if applicable) (e.g., outside maintenance contracts, material savings, etc.)</b>	
<b>Method(s) of Savings Measurement and Verification</b>	

**Provide names of owner(s)' representatives with whom the ESCO did business on this project. You should ensure that all representatives are familiar with this project. Also, provide CURRENT and ACCURATE telephone numbers and email addresses for the specified representatives. Do not include the ESCO's personnel as a reference.**

**Describe the specific roles and responsibilities of ESCO personnel associated with the identified project. Limit your response to only those personnel who will be directly involved in the Program's projects.**

**Identify the major subcontractors on this project, and describe their scope.**

**ESCO Notes or Comments**


**APPENDIX H  
ENERGY & OTHER SAVINGS DATA FORM**

**Complete the following information for each of the ten (10) projects for which PROJECT HISTORY and CLIENT REFERENCES forms are submitted. Do not enter dollar values except for those rows where dollar values are the identified values.**

<b>ENERGY, &amp; OPERATIONAL SAVINGS DATA FORM</b>							
<b>Project Name &amp; Location:</b>							
Annual Savings (List Commodity Savings in Units – not Dollars)	Projected	Guaranteed	Achieved				
			Year 1	Year 2	Year 3	Year 4	Year 5
Electric Energy (kWH)							
Other (Specify)							
Other (Specify)							
Material (\$)							
Maintenance Contracts (\$)							
<b>Total Annual Savings (\$)</b>							

<b>ESCO Notes or Comments</b>
-------------------------------

## APPENDIX I

### Regional Streetlight Procurement Program Specification for LED Roadway Luminaires

#### 1.0 INTRODUCTION

This specification provides three model scenarios for roadway applications common in the project area. Respondents shall include renderings of projects along with the submittal entries. Submittal entries will be evaluated on the basis of best value, rather than lowest price.

#### 2.0 NORMATIVE REFERENCES

The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by their basic designation only. Versions listed shall be superseded by updated versions as they become available.

American National Standards Institute (ANSI)

- C78.377-2011 (or latest), American National Standard for the Chromaticity of Solid State Lighting Products
- C82.77-10-2014 (or latest), American National Standard for Harmonic Emission Limits - Related Power Quality Requirements for Lighting Equipment
- C136.10-2010 (or latest), American National Standard for Roadway and Area Lighting Equipment – Locking-Type Photocontrol Devices and Mating Receptacles— Physical and Electrical Interchangeability and Testing
- C136.15-2011 (or latest), American National Standard for Roadway and Area Lighting Equipment – Luminaire Field Identification
- C136.22-2004 (R2014 or latest), American National Standard for Roadway and Area Lighting Equipment – Internal Labeling of Luminaires
- C136.31-2010 (or latest), American National Standard for Roadway Lighting Equipment – Luminaire Vibration
- C136.37-2011 (or latest), American National Standard for Roadway and Area Lighting Equipment - Solid State Light Sources Used in Roadway and Area Lighting
- C136.41-2013 (or latest), American National Standard for Roadway and Area Lighting Equipment—Dimming Control Between an External Locking Type Photocontrol and Ballast or Driver
- C62.41.2-2002 (or latest), IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits



- C62.45-2002 (or latest), ANSI/IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000 V and Less) AC Power Circuits

#### American Society for Testing and Materials International (ASTM)

- B117-11 (or latest), Standard Practice for Operating Salt Spray (Fog) Apparatus
- D523-14 (or latest), Standard Test Method for Specular Gloss
- D1654-08 (or latest), Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
- G154-12a (or latest), Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials

#### ENERGY STAR®

- ENERGY STAR TM-21 Calculator, rev. 082814 (or latest, [www.energystar.gov/TM-21Calculator](http://www.energystar.gov/TM-21Calculator))

#### European Union (EU)

- RoHS II Directive 2011/65/EU, on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast)

#### Federal Communications Commission (FCC)

- 47 CFR Part 15, Telecommunication – Radio Frequency Devices

#### Federal Trade Commission (FTC)

- Complying with the Made in USA Standard, December 1998 (<http://business.ftc.gov/advertising-and-marketing/made-usa>)
- Green Guides, 16 CFR Part 260, Guides for the Use of Environmental Marketing Claims

#### Illuminating Engineering Society of North America (IESNA or IES)

- LM-50-13 (or latest), IES Approved Method for Photometric Measurement of Roadway and Street Lighting Installations
- LM-61-06 (R2014 or latest), IESNA Approved Guide for Identifying Operating Factors Influencing Measured Vs. Predicted Performance for Installed Outdoor High Intensity Discharge (HID) Luminaires

- LM-63-02 (R2008 or latest), ANSI/IESNA Standard File Format for the Electronic Transfer of Photometric Data and Related Information
- LM-79-08 (or latest), IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products
- LM-80-08 (or latest), IESNA Approved Method for Measuring Lumen Maintenance of LED Light Sources
- RP-8-14 (or latest), ANSI / IESNA American National Standard Practice for Roadway Lighting
- RP-16-10 (or latest), ANSI/IES Nomenclature and Definitions for Illuminating Engineering
- TM-15-11 (or latest), Luminaire Classification System for Outdoor Luminaires
- TM-21-11 (or latest), Projecting Long Term Lumen Maintenance of LED Light Sources

#### International Electrotechnical Commission (IEC)

- 60929 Annex E, Control Interface for Controllable Ballasts (0-10V)
- 62386, Digital Addressable Lighting Interface (DALI)

#### LED Lighting Facts

- Submission Requirements  
(<http://www.lightingfacts.com/About/Content/Manufacturers/SubmissionRequirements>)

#### Municipal Solid-State Street Lighting Consortium (MSSLC)

- Model Specification for Networked Outdoor Lighting Control Systems, V2.0 (or latest)

#### National Electrical Manufacturers Association (NEMA)

- LSD 63-2012, Measurement Methods and Performance Variation for Verification Testing of General Purpose Lamps and Systems

#### Underwriters Laboratories (UL)

- 1598 Third Edition (or latest), Luminaires

### 3.0 RELATED DOCUMENTS

3.1 Contract Drawings and conditions of Contract (including General Conditions, Addendum to the General Conditions, Special Conditions, Division 01 Specifications Sections and all other Contract Documents) apply to the work of this section.

3.2 MSSLC Model Specification for Networked Outdoor Lighting Control Systems.

3.2.1 This document is for reference only, it provides a framework for Adaptive Networked Controls that may be installed in some Municipalities. The accompanying RFP requests price adders for network control components. All controls provided in the RFP Product and Pricing Submittal Worksheet should have the following functional capabilities: Utility grade metering (voltage, current and power factor), time-based dimming schedules, Electronic Photo Control with performance characteristics defined later in Section 5.5.6. and a user interface program (cloud or server based) that allows for time-based control schedules or scenes, high-end trimming (dimming) control, other manual control, run-time tracking, outage/low performance notification. Driver type (0-10V or DALI) may be dictated by the choice of control manufacturer and system.

### 4.0 DEFINITIONS

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

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

4.1.2 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).

### 5.0 PRODUCT REQUIREMENTS

5.1 Tabulated summary of key parameters and product criteria

**Luminaire Designation: LOCAL “70W HPS”**  
**System Specification Method**

SITE PARAMETERS <i>(See drawings in Appendix A)</i>		
ROADWAY DATA	Median width (including curbs, gutters, and shoulders)	0 ft
	Number of vehicular lanes (total on both sides of median)	2
	Width of one vehicular lane	12 ft
	Shoulder width (including gutter and curb)	0 ft
	IES pavement class.	<input type="checkbox"/> R1 <input type="checkbox"/> R2 <input checked="" type="checkbox"/> R3 <input type="checkbox"/> R4
SIDEWALK DATA	Berm width (from curb to sidewalk)	2 ft
	Sidewalk width	4 ft
	Sidewalk on	<input checked="" type="checkbox"/> Both sides of street <input type="checkbox"/> Pole side <input type="checkbox"/> Other side
LIGHT POLE DATA	Luminaire mounting height	27 ft
	Arm length (horizontal)	3 ft
	Luminaires per pole	1
	Pole set-back from curb	1 ft
	Pole spacing (one pole cycle, parallel to path of travel)	100 ft
	Pole layout	<input checked="" type="checkbox"/> One side <input type="checkbox"/> Opposite <input type="checkbox"/> Staggered <input type="checkbox"/> Median
PERFORMANCE CRITERIA		
MAINTAINED ROADWAY ILLUMINATION		
PHOTOPIC ILLUMINANCE	Average horizontal illuminance at pavement	4.0 lux (0.4 fc)
	Avg:min uniformity ratio	6.0
	Max:min uniformity ratio	n/a
DISABILITY GLARE	Max. veiling luminance ratio	0.4
MAINTAINED SIDEWALK ILLUMINATION		
PHOTOPIC ILLUMINANCE	Average horizontal at pavement	3.0 lux (0.3 fc)
	Avg:min uniformity ratio (horizontal)	6.0
	Min. vertical illum. at 4.9 ft, in directions of travel	0.8 lux (0.08 fc)
LED LUMINAIRE		
INPUT POWER	Max. nominal luminaire input power	40W
VOLTAGE	Nominal luminaire input voltage range	120-277 V
LUMEN MAINT.	Min. % of initial output at 36,000 hours operation	90%
WARRANTY	Min. luminaire warranty	10 years
NOMINAL CCT	Rated correlated color temperature	4000 ± 200 K
BUG RATINGS	Preferred backlight-uplight-glare ratings	B1-U0-G1
FINISH	Luminaire housing finish color	Gray
WEIGHT	Luminaire weight	20-30 lb
EPA	Max. effective projected area	0.7 ft <sup>2</sup>
MOUNTING	Method	<input type="checkbox"/> Post-top <input checked="" type="checkbox"/> Side-arm <input type="checkbox"/> Trun./yoke <input type="checkbox"/> Swivel-tenon

	Tenon nominal pipe size (NPS)		1 5/8" – 2"	
VIBRATION	ANSI C136.31	<input checked="" type="checkbox"/> Level 1 (normal) <input type="checkbox"/> Level 2 (bridge/overpass)		
THERMAL ENVIRONMENT	Typical min. ambient temperature during operation		-20 °C	
	Typical max. ambient temperature during operation		40 °C	
CONTROL INTERFACE	<input type="checkbox"/> None	<input type="checkbox"/> ANSI C136.10 (3-pin)	<input checked="" type="checkbox"/> ANSI C136.41, 5-pin	<input checked="" type="checkbox"/> ANSI C136.41, 7-pin
LED DRIVER	<input type="checkbox"/> Not dimmable		<input checked="" type="checkbox"/> Dimmable, 0-10V (IEC 60929)	<input checked="" type="checkbox"/> Dimmable, DALI (IEC 62386)

**Luminaire Designation: LOCAL 100W HPS**  
*System Specification Method*

SITE PARAMETERS <i>(See drawings in Appendix A)</i>				
ROADWAY DATA	Median width (including curbs, gutters, and shoulders)		0 ft	
	Number of vehicular lanes (total on both sides of median)		2	
	Width of one vehicular lane		12 ft	
	Shoulder width (including gutter and curb)		0 ft	
	IES pavement class.		<input type="checkbox"/> R1 <input type="checkbox"/> R2 <input checked="" type="checkbox"/> R3 <input type="checkbox"/> R4	
SIDEWALK DATA	Berm width (from curb to sidewalk)		2 ft	
	Sidewalk width		4 ft	
	Sidewalk on	<input checked="" type="checkbox"/> Both sides of street <input type="checkbox"/> Pole side <input type="checkbox"/> Other side		
LIGHT POLE DATA	Luminaire mounting height		27 ft	
	Arm length (horizontal)		3 ft	
	Luminaires per pole		1	
	Pole set-back from curb		1 ft	
	Pole spacing (one pole cycle, parallel to path of travel)		150 ft	
	Pole layout		<input checked="" type="checkbox"/> One side <input type="checkbox"/> Opposite <input type="checkbox"/> Staggered <input type="checkbox"/> Median	
PERFORMANCE CRITERIA				
MAINTAINED ROADWAY ILLUMINATION				
PHOTOPIC ILLUMINANCE	Average horizontal illuminance at pavement		4.0 lux (0.4 fc)	
	Avg:min uniformity ratio		6.0	
	Max:min uniformity ratio		n/a	
DISABILITY GLARE	Max. veiling luminance ratio		0.4	
MAINTAINED SIDEWALK ILLUMINATION				
PHOTOPIC ILLUMINANCE	Average horizontal at pavement		3.0 lux (0.3 fc)	
	Avg:min uniformity ratio (horizontal)		6.0	
	Min. vertical illum. at 4.9 ft, in directions of travel		0.8 lux (0.08 fc)	
LED LUMINAIRE				

INPUT POWER	Max. nominal luminaire input power	60W
VOLTAGE	Nominal luminaire input voltage range	120-277 V
LUMEN MAINT.	Min. % of initial output at 36,000 hours operation	90%
WARRANTY	Min. luminaire warranty	10 years
NOMINAL CCT	Rated correlated color temperature	4000 ± 200 K
BUG RATINGS	Preferred backlight-uplight-glare ratings	B1-U0-G1
FINISH	Luminaire housing finish color	Gray
WEIGHT	Luminaire weight	20-30 lb
EPA	Max. effective projected area	0.7 ft <sup>2</sup>
MOUNTING	Method	<input type="checkbox"/> Post-top <input checked="" type="checkbox"/> Side-arm <input type="checkbox"/> Trun./yoke <input type="checkbox"/> Swivel-tenon
	Tenon nominal pipe size (NPS)	1 5/8" – 2"
VIBRATION	ANSI C136.31	<input checked="" type="checkbox"/> Level 1 (normal) <input type="checkbox"/> Level 2 (bridge/overpass)
THERMAL ENVIRONMENT	Typical min. ambient temperature during operation	-20 °C
	Typical max. ambient temperature during operation	40 °C
CONTROL INTERFACE	<input type="checkbox"/> None	<input type="checkbox"/> ANSI C136.10 (3-pin) <input checked="" type="checkbox"/> ANSI C136.41, 5-pin <input checked="" type="checkbox"/> ANSI C136.41, 7-pin
LED DRIVER	<input type="checkbox"/> Not dimmable	<input checked="" type="checkbox"/> Dimmable, 0-10V (IEC 60929) <input checked="" type="checkbox"/> Dimmable, DALI (IEC 62386)

**Luminaire Designation: LOCAL 150W HPS**  
*System Specification Method*

SITE PARAMETERS (See drawings in Appendix A)		
ROADWAY DATA	Median width (including curbs, gutters, and shoulders)	0 ft
	Number of vehicular lanes (total on both sides of median)	2
	Width of one vehicular lane	12 ft
	Shoulder width (including gutter and curb)	0 ft
	IES pavement class.	<input type="checkbox"/> R1 <input type="checkbox"/> R2 <input checked="" type="checkbox"/> R3 <input type="checkbox"/> R4
SIDEWALK DATA	Berm width (from curb to sidewalk)	2 ft
	Sidewalk width	4 ft
	Sidewalk on	<input checked="" type="checkbox"/> Both sides of street <input type="checkbox"/> Pole side <input type="checkbox"/> Other side
LIGHT POLE DATA	Luminaire mounting height	27 ft
	Arm length (horizontal)	3 ft
	Luminaires per pole	1
	Pole set-back from curb	1 ft
	Pole spacing (one pole cycle, parallel to path of travel)	200 ft
	Pole layout	<input checked="" type="checkbox"/> One side <input type="checkbox"/> Opposite <input type="checkbox"/> Staggered <input type="checkbox"/> Median
PERFORMANCE CRITERIA		

MAINTAINED ROADWAY ILLUMINATION			
PHOTOPIC ILLUMINANCE	Average horizontal illuminance at pavement		4.0 lux (0.4 fc)
	Avg:min uniformity ratio		6.0
	Max:min uniformity ratio		n/a
DISABILITY GLARE	Max. veiling luminance ratio		0.4
MAINTAINED SIDEWALK ILLUMINATION			
PHOTOPIC ILLUMINANCE	Average horizontal at pavement		3.0 lux (0.3 fc)
	Avg:min uniformity ratio (horizontal)		6.0
	Min. vertical illum. at 4.9 ft, in directions of travel		0.8 lux (0.08 fc)
LED LUMINAIRE			
INPUT POWER	Max. nominal luminaire input power		120W
VOLTAGE	Nominal luminaire input voltage range		120-277 V
LUMEN MAINT.	Min. % of initial output at 36,000 hours operation		90%
WARRANTY	Min. luminaire warranty		10 years
NOMINAL CCT	Rated correlated color temperature		4000 ± 200 K
BUG RATINGS	Preferred backlight-uplight-glare ratings		B2-U0-G2
FINISH	Luminaire housing finish color		Gray
WEIGHT	Luminaire weight		20-30 lb
EPA	Max. effective projected area		0.7 ft <sup>2</sup>
MOUNTING	Method	<input type="checkbox"/> Post-top <input checked="" type="checkbox"/> Side-arm <input type="checkbox"/> Trun./yoke <input type="checkbox"/> Swivel-tenon	
	Tenon nominal pipe size (NPS)		1 5/8" – 2"
VIBRATION	ANSI C136.31	<input checked="" type="checkbox"/> Level 1 (normal) <input type="checkbox"/> Level 2 (bridge/overpass)	
THERMAL ENVIRONMENT	Typical min. ambient temperature during operation		-20 °C
	Typical max. ambient temperature during operation		40 °C
CONTROL INTERFACE	<input type="checkbox"/> None	<input type="checkbox"/> ANSI C136.10 (3-pin)	<input checked="" type="checkbox"/> ANSI C136.41, 5-pin
LED DRIVER	<input type="checkbox"/> Not dimmable		<input checked="" type="checkbox"/> Dimmable, DALI (IEC 62386)

**Luminaire Designation: Collector 250W HPS**  
**System Specification Method**

SITE PARAMETERS (See drawings in Appendix A)			
ROADWAY DATA	Median width (striped/paved turning lane)		10 ft
	Number of vehicular lanes (total on both sides of median)		2
	Width of one vehicular lane		10 ft
	Shoulder width (including gutter and curb)		0 ft
	IES pavement class.	<input type="checkbox"/> R1 <input type="checkbox"/> R2 <input checked="" type="checkbox"/> R3 <input type="checkbox"/> R4	
SIDEWALK DATA	Berm width (from curb to sidewalk)		2 ft
	Sidewalk width		4 ft

	Sidewalk on	<input checked="" type="checkbox"/> Both sides of street	<input type="checkbox"/> Pole side	<input type="checkbox"/> Other side	
LIGHT POLE DATA	Luminaire mounting height			30 ft	
	Arm length (horizontal)			6 ft	
	Luminaires per pole			1	
	Pole set-back from curb			1 ft	
	Pole spacing (one pole cycle, parallel to path of travel)			125 ft	
	Pole layout		<input type="checkbox"/> One side	<input type="checkbox"/> Opposite	<input checked="" type="checkbox"/> Staggered
<b>PERFORMANCE CRITERIA</b>					
<b>MAINTAINED ROADWAY ILLUMINATION</b>					
PHOTOPIC ILLUMINANCE	Average horizontal illuminance at pavement			6.0 lux (0.6 fc)	
	Avg:min uniformity ratio			4.0	
	Max:min uniformity ratio			n/a	
DISABILITY GLARE	Max. veiling luminance ratio			0.4	
<b>MAINTAINED SIDEWALK ILLUMINATION</b>					
PHOTOPIC ILLUMINANCE	Average horizontal at pavement			3.0 lux (0.3 fc)	
	Avg:min uniformity ratio (horizontal)			6.0	
	Min. vertical illum. at 4.9 ft, in directions of travel			0.8 lux (0.08 fc)	
<b>LED LUMINAIRE</b>					
INPUT POWER	Max. nominal luminaire input power			130 W	
VOLTAGE	Nominal luminaire input voltage range			120-277 V	
LUMEN MAINT.	Min. % of initial output at 36,000 hours operation			90%	
WARRANTY	Min. luminaire warranty			10 years	
NOMINAL CCT	Rated correlated color temperature			4000 ± 200 K	
BUG RATINGS	Preferred backlight-uplight-glare ratings			B2-U0-G2	
FINISH	Luminaire housing finish color			Gray	
WEIGHT	Luminaire weight			20-30 lb	
EPA	Max. effective projected area			0.7 ft <sup>2</sup>	
MOUNTING	Method	<input type="checkbox"/> Post-top	<input checked="" type="checkbox"/> Side-arm	<input type="checkbox"/> Trun./yoke	<input type="checkbox"/> Swivel-tenon
	Tenon nominal pipe size (NPS)			1 5/8" – 2"	
VIBRATION	ANSI C136.31	<input checked="" type="checkbox"/> Level 1 (normal)		<input type="checkbox"/> Level 2 (bridge/overpass)	
THERMAL ENVIRONMENT	Typical min. ambient temperature during operation			-20 °C	
	Typical max. ambient temperature during operation			40 °C	
CONTROL INTERFACE	<input type="checkbox"/> None	<input type="checkbox"/> ANSI C136.10 (3-pin)	<input checked="" type="checkbox"/> ANSI C136.41, 5-pin	<input checked="" type="checkbox"/> ANSI C136.41, 7-pin	
LED DRIVER	<input type="checkbox"/> Not dimmable		<input checked="" type="checkbox"/> Dimmable, 0-10V (IEC 60929)	<input checked="" type="checkbox"/> Dimmable, DALI (IEC 62386)	



**Luminaire Designation: Arterial 400 W HPS**  
**System Specification Method**

SITE PARAMETERS (See drawings in Appendix A)		
ROADWAY DATA	Median width (including curbs, gutters, and shoulders)	12 ft
	Number of vehicular lanes (total on both sides of median)	4
	Width of one vehicular lane	12 ft
	Shoulder width - Parking (including gutter and curb)	6 ft
	IES pavement class.	<input type="checkbox"/> R1 <input type="checkbox"/> R2 <input checked="" type="checkbox"/> R3 <input type="checkbox"/> R4
SIDEWALK DATA	Berm width (from curb to sidewalk)	5 ft
	Sidewalk width	6 ft
	Sidewalk on	<input checked="" type="checkbox"/> Both sides of street <input type="checkbox"/> Pole side <input type="checkbox"/> Other side
LIGHT POLE DATA	Luminaire mounting height	35 ft
	Arm length (horizontal)	8 ft
	Luminaires per pole	1
	Pole set-back from curb	2 ft
	Pole spacing (one pole cycle, parallel to path of travel)	150 ft
	Pole layout	<input type="checkbox"/> One side <input checked="" type="checkbox"/> Opposite <input type="checkbox"/> Staggered <input type="checkbox"/> Median
PERFORMANCE CRITERIA		
MAINTAINED ROADWAY ILLUMINATION		
PHOTOPIC ILLUMINANCE	Average horizontal illuminance at pavement	9.0 lux (0.9 fc)
	Avg:min uniformity ratio	3.0
	Max:min uniformity ratio	n/a
DISABILITY GLARE	Max. veiling luminance ratio	0.3
MAINTAINED SIDEWALK ILLUMINATION		
PHOTOPIC ILLUMINANCE	Average horizontal at pavement	4.0 lux (0.4 fc)
	Avg:min uniformity ratio (horizontal)	4.0
	Min. vertical illum. at 4.9 ft, in directions of travel	1.0 lux (0.1 fc)
LED LUMINAIRE		
INPUT POWER	Max. nominal luminaire input power	230 W
VOLTAGE	Nominal luminaire input voltage range	120-277 V
LUMEN MAINT.	Min. % of initial output at 36,000 hours operation	90%
WARRANTY	Min. luminaire warranty	10 years
NOMINAL CCT	Rated correlated color temperature	4000 ± 200 K
BUG RATINGS	Preferred backlight-uplight-glare ratings	B3-U0-G3
FINISH	Luminaire housing finish color	Gray
WEIGHT	Luminaire weight	20-30 lb
EPA	Max. effective projected area	0.7 ft <sup>2</sup>
MOUNTING	Method	<input type="checkbox"/> Post-top <input checked="" type="checkbox"/> Side-arm <input type="checkbox"/> Trun./yoke <input type="checkbox"/> Swivel-tenon
		Tenon nominal pipe size (NPS)

VIBRATION	ANSI C136.31	<input checked="" type="checkbox"/> Level 1 (normal) <input type="checkbox"/> Level 2 (bridge/overpass)		
THERMAL ENVIRONMENT	Typical min. ambient temperature during operation		-20 °C	
	Typical max. ambient temperature during operation		40 °C	
CONTROL INTERFACE	<input type="checkbox"/> None	<input type="checkbox"/> ANSI C136.10 (3-pin)	<input checked="" type="checkbox"/> ANSI C136.41, 5-pin	<input checked="" type="checkbox"/> ANSI C136.41, 7-pin
LED DRIVER	<input type="checkbox"/> Not dimmable		<input checked="" type="checkbox"/> Dimmable, 0-10V (IEC 60929)	<input checked="" type="checkbox"/> Dimmable, DALI (IEC 62386)

## 5.2 General requirements

- 5.2.1 Luminaires shall satisfy the key criteria summarized in section 5.1.
- 5.2.2 Transmissive optical components shall be applied in accordance with OEM design guidelines to ensure suitability for the environment (e.g., electromagnetic, thermal, mechanical, chemical).
- 5.2.3 Luminaire shall be designed for ease of component replacement and end-of-life disassembly.
- 5.2.4 LED light source(s) and driver(s) shall be RoHS compliant.
- 5.2.5 Nominal luminaire input wattage shall account for nominal applied voltage and any reduction in driver efficiency due to sub-optimal driver loading.
- 5.2.6 Luminaire shall accept the voltage range specified at 50/60 Hz, and shall operate normally for input voltage fluctuations of plus or minus 10 percent.
- 5.2.7 All internal components shall be assembled and pre-wired using modular electrical connections.
- 5.2.8 The following shall be in accordance with corresponding sections of ANSI C136.37.
- 5.2.8.1 Wiring and grounding
  - 5.2.8.2 Terminal blocks for incoming AC lines (electrical mains wires)
  - 5.2.8.3 Photocontrol receptacle
  - 5.2.8.4 Latching and hinging
  - 5.2.8.5 Mounting provisions
  - 5.2.8.6 Ingress protection

## 5.3 Painted or finished luminaire surfaces exposed to the environment

- 5.3.1 Shall exceed a rating of six per ASTM D1654 after 1000 hours of testing per ASTM B117.
- 5.3.2 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.

## 5.4 Thermal management

- 5.4.1 Luminaire shall start and operate in ambient temperature range specified.
- 5.4.2 Maximum rated case temperature of driver and other internal components shall not be exceeded when luminaire is operated in ambient temperature range specified.
- 5.4.3 Mechanical design of protruding external surfaces (heat sink fins) shall facilitate hose-down cleaning and discourage debris accumulation.
- 5.4.4 Liquids or other moving parts shall be clearly indicated in submittals, shall be consistent with product testing, and shall be subject to review by Owner.

#### 5.5 LED driver, photocontrol receptacle, and control interface

- 5.5.1 Luminaire designation(s) indicated “None” in section 5.1 need not accept a control signal, and do not require a dimmable driver. If luminaire cannot be furnished without photocontrol receptacle, luminaire shall be furnished with ANSI C136.10 compliant photocontrol receptacle and shorting cap as directed by Owner.
- 5.5.2 Luminaire designation(s) indicated “ANSI C136.10, 3-pin” in section 5.1 shall be fully prewired and shall incorporate an ANSI C136.10 compliant receptacle. If a dimmable LED driver is specified, its control wires shall be accessible and electrically isolated.
- 5.5.3 Luminaire designation(s) indicated “ANSI C136.41, 5-pin” in section 5.1 shall be fully prewired and shall incorporate an ANSI C136.41 compliant receptacle. If a dimmable LED driver is specified, its 0-10V or DALI control wires shall be connected to the receptacle pads as specified in ANSI C136.41.
- 5.5.4 Luminaire designation(s) indicated “ANSI C136.41, 7-pin” in section 5.1 shall be fully prewired and shall incorporate an ANSI C136.41 compliant receptacle. If a dimmable LED driver is specified, its 0-10V or DALI control wires shall be connected to the receptacle pads as specified in ANSI C136.41; connection of the two remaining pads shall be by Supplier, as directed by Owner.
- 5.5.5 Driver - The driver shall have the same warranty as the luminaire. Unit shall have a minimum ingress rating of IP66 as specified in IEC 60529. Minimum power factor of 0.9 with a Total Harmonic Distortion (THD) of less than 20% at full input power across specified voltage range.

5.5.6 Electronic Photo Control - locking-type photo control shall be an electronic control based on a solid-state photo sensor and relay switch circuit. Switch operation shall have a minimum rating of 1000 Watts tungsten and 1800 VA ballast at 105-305 VAC. For high in-rush LED type fixtures, the photo control switch operation shall have a 4 Amp Electronic Driver rating at 105-305 VAC. The photo control shall fail in ON state. The photo control operating voltage shall be clearly identified on the control housing by color code and unit label. The photo control shall be equipped with a 2-5 second delay action eliminating activation by light flashes. The photo control shall be equipped with standard 3-prong twist and locking-type plug connection. The plug connection terminals shall be solid brass. The photo control shall consist of industrial grade electronic components, minimum 600 Joule/40kA MOV surge protection, solid state light sensor, and silver alloy relay contacts. Instant turn ON light level at 1.5 fc +/- 0.2 fc, OFF light level at

2.25 fc, OFF to ON ratio 1.5:1 with a 2-5 second delay. The photo control shall be 100% factory tested and function within specified light levels. The photo control shall be agency certified and tested accordingly. The photo control shall meet agency standards for locking-type devices and all other requirements of ANSI C136.10-2010. The photo control shall operate over a temperature range of -40°F to 158°F (-40°C to 70°C). The photo control shall have a minimum manufactures limited warranty of 10 years.

5.6 Electrical safety testing

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

5.6.2 Luminaire shall have locality-appropriate governing mark and certification.

5.7 Electrical immunity

5.7.1 Luminaire shall meet the “Elevated” requirements in **Appendix J.** Manufacturer shall indicate on submittal form (included with RFP) whether failure of the electrical immunity system can possibly result in disconnect of power to luminaire.

5.8 Interference and power quality

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

5.8.2 Luminaire shall comply with section 3.2.5 (luminaires rated for outdoor use) of ANSI C82.77 at full input power and across specified voltage range.

5.9 Color attributes

5.9.1 Color Rendering Index (CRI) shall be no less than 70.

5.9.2 Nominal Correlated Color Temperature (CCT) shall be as specified in section 5.1.

5.9.2.1 If submitted nominal CCT is listed in Table 5.1 below, measured CCT and Duv shall be as listed in Table 5.1.

**Table 5.1.** Allowable CCT and Duv (adapted from ANSI C78.377)

Manufacturer-Rated Nominal CCT (K)	Allowable IES LM-79 Chromaticity Values	
	Measured CCT (K)	Measured Duv
2700	2580 to 2870	-0.006 to 0.006
3000	2870 to 3220	-0.006 to 0.006
3500	3220 to 3710	-0.005 to 0.007
4000	3710 to 4260	-0.005 to 0.007
4500	4260 to 4746	-0.004 to 0.008

5000	4746 to 5311	-0.004 to 0.008
5700	5312 to 6020	-0.003 to 0.009
6500	6022 to 7040	-0.003 to 0.009

5.9.2.2 If submitted nominal CCT is not listed in Table 5.1, measured CCT and Duv shall be as per the criteria for Flexible CCT defined in ANSI C78.377.

## 5.10 Identification

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

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

## 6.0 REQUIRED SUBMITTALS

6.1 Completed RFP submittal form, in Microsoft Excel format and hard copy.

6.1.1 Family grouping in accordance with LED Lighting Facts is permitted, provided this is clearly indicated on the submittal form provided in RFP, and clearly communicated via a letter that includes detailed calculations relating the tested product(s) to the submitted product.

## 6.2 Product cutsheets

6.2.1 Luminaire cutsheets, clearly indicating all options provided

6.2.2 Cutsheets for LED light source(s)

6.2.3 Cutsheets for LED driver(s)

6.2.3.1 If dimmable LED driver is specified, provide diagrams illustrating light output and input power as a function of control signal.

6.2.4 Cutsheets for surge protection device

## 6.3 Instructions for installation and maintenance

## 6.4 Summary of luminaire recycled content and recyclability

6.4.1 Shall be in accordance with the FTC Green Guides, expressed as a percentage of luminaire weight.

## 6.5 IES LM-79 luminaire photometric report(s)

6.5.1 Shall be produced by the test laboratory

6.5.1.1 The test laboratory shall satisfy LED Lighting Facts accreditation requirements.

6.5.2 Shall include the following information

- 6.5.2.1 Name of test laboratory
- 6.5.2.2 Report number
- 6.5.2.3 Date
- 6.5.2.4 Complete luminaire catalog number
- 6.5.2.5 Description of luminaire, LED light source(s), and LED driver(s)
- 6.5.2.6 Goniophotometry
  - a. IES TM-15 Backlight-Uplight-Glare (BUG) ratings shall be for initial (worst-case) values, i.e., Light Loss Factor (LLF) = 1.0.

## 6.6 Lumen maintenance calculations and supporting test data

- 6.6.1 Shall be in accordance with LED Lighting Facts guidance.
  - 6.6.1.1 Exception: calculations shall be based on the cumulative hours of operation specified in section 5.1.
- 6.6.2 Submit completed ENERGY STAR TM-21 Calculator as an electronic Excel file.

## 6.7 Computer-generated point-by-point photometric analysis of maintained light levels

- 6.7.1 Calculation/measurement points shall be per IES RP-8. Separated vehicular lanes, bikeways, and walkways shall be evaluated separately.
- 6.7.2 Calculations shall be for maintained values, i.e. Light Loss Factor (LLF) < 1.0, where  $LLF = LLD \times LDD \times LATF$ , and
  - 6.7.2.1 Lamp Lumen Depreciation (LLD) shall be 0.90 or the value calculated in section 6.6, whichever is lower.
  - 6.7.2.2 Luminaire Dirt Depreciation (LDD) = 0.90
  - 6.7.2.3 Luminaire Ambient Temperature Factor (LATF) = 0.96
- 6.7.3 Mesopic multipliers (i.e., effective luminance factors) shall not be used. All values shall assume photopic visual adaptation.
- 6.7.4 Submit IES LM-63 format electronic file containing luminous intensity data associated with submitted LM-79 report(s) and used for point-by-point calculations.
- 6.7.5 Photometric analysis should be submitted in .PDF format with the file name clearly depicting which lighting application is represented. All files should provide a lighting statistics matrix showing separate calculation areas for Roadways, Sidewalk 1 and Sidewalk 2. Each calculation area will show the following statistics Fixture Type, Manufacturer and Model #, Initial Delivered Lumens, LLD, LDD, LATF, LLF (calculated from previous), Illuminance levels (Max, Min & Average), Uniformity Ratios (Max/Min, Average/Min & Max/Average), Max. veiling luminance ratio and surface reflectance. If any of the performance requirements for a given lighting application are not met, the photometric analysis must indicate those deficiencies and an explanation of why the proposed solution should be considered acceptable.

- 6.8 Summary of Joint Electron Devices Engineering Council (JEDEC) or Japan Electronics and Information Technology Industries (JEITA) reliability testing performed for LED packages
- 6.9 Summary of reliability testing performed for LED driver(s)
- 6.10 Written product warranty as per section 8.0 below
- 6.11 Safety certification and file number indicating compliance with UL 1598
  - 6.11.1 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).
- 6.12 Documentation supporting any U.S. origin claims for the product, in accordance with FTC guidance.

## 7.0 QUALITY ASSURANCE

- 7.1 Before approval and purchase, provide luminaire sample(s) identical to product configuration(s) submitted for inspection. Owner may request IES LM-79 testing of luminaire sample(s) to verify performance is within manufacturer-reported tolerances.
- 7.2 Electrically test fully assembled luminaires before shipment from factory.
- 7.3 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.

## 8.0 WARRANTY

- 8.1 Warranty shall be of the minimum duration specified in section 5.1, and shall cover maintained integrity and functionality of the following
  - 8.1.1 Luminaire housing, wiring, and connections
  - 8.1.2 LED light source(s)
    - 8.1.2.1 Negligible light output from more than 10 percent of the LED packages within a single luminaire constitutes luminaire failure.
    - 8.1.2.2 Color shift of greater than +/- 2000K from nominal constitutes luminaire failure
    - 8.1.2.3 Total lumen depreciation of greater than 30% from initial rated output constitutes individual luminaire failure. If greater than 20% of all identical output installed luminaires

exhibit this amount of depreciation then all luminaires in the installation shall be deemed to have failed.

8.1.3 LED driver(s)

8.2 Warranty period shall begin 90 days after date of invoice, or as negotiated by owner such as in the case of an auditable asset management system.

## 9.0 MANUFACTURER SERVICES

9.1 Manufacturer or local sales representative shall provide installation and troubleshooting support via telephone and/or email.

## 10.0 ELIGIBLE MANUFACTURERS

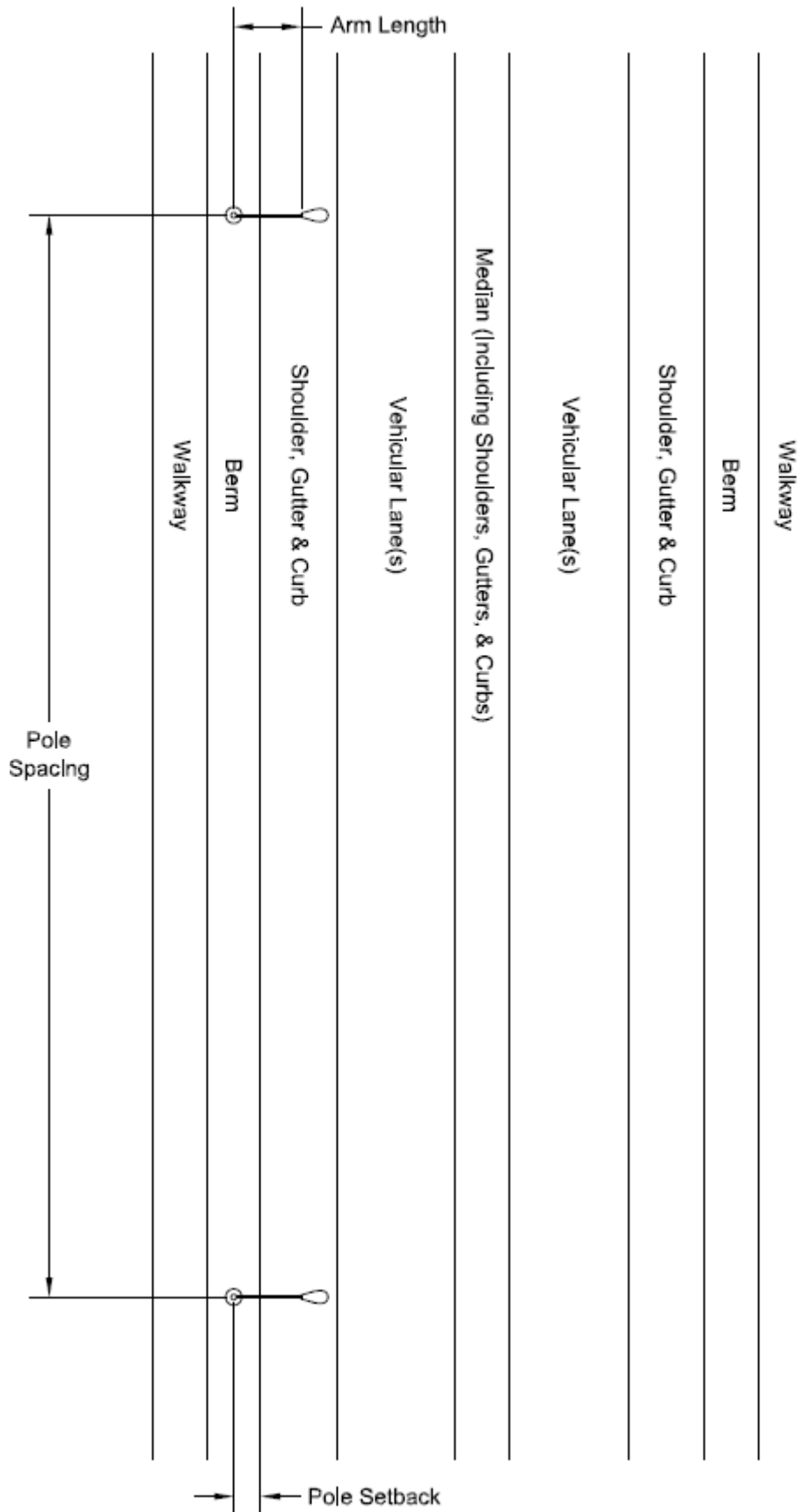
10.1 Any manufacturer offering products that comply with the required product performance and operation criteria may be considered.



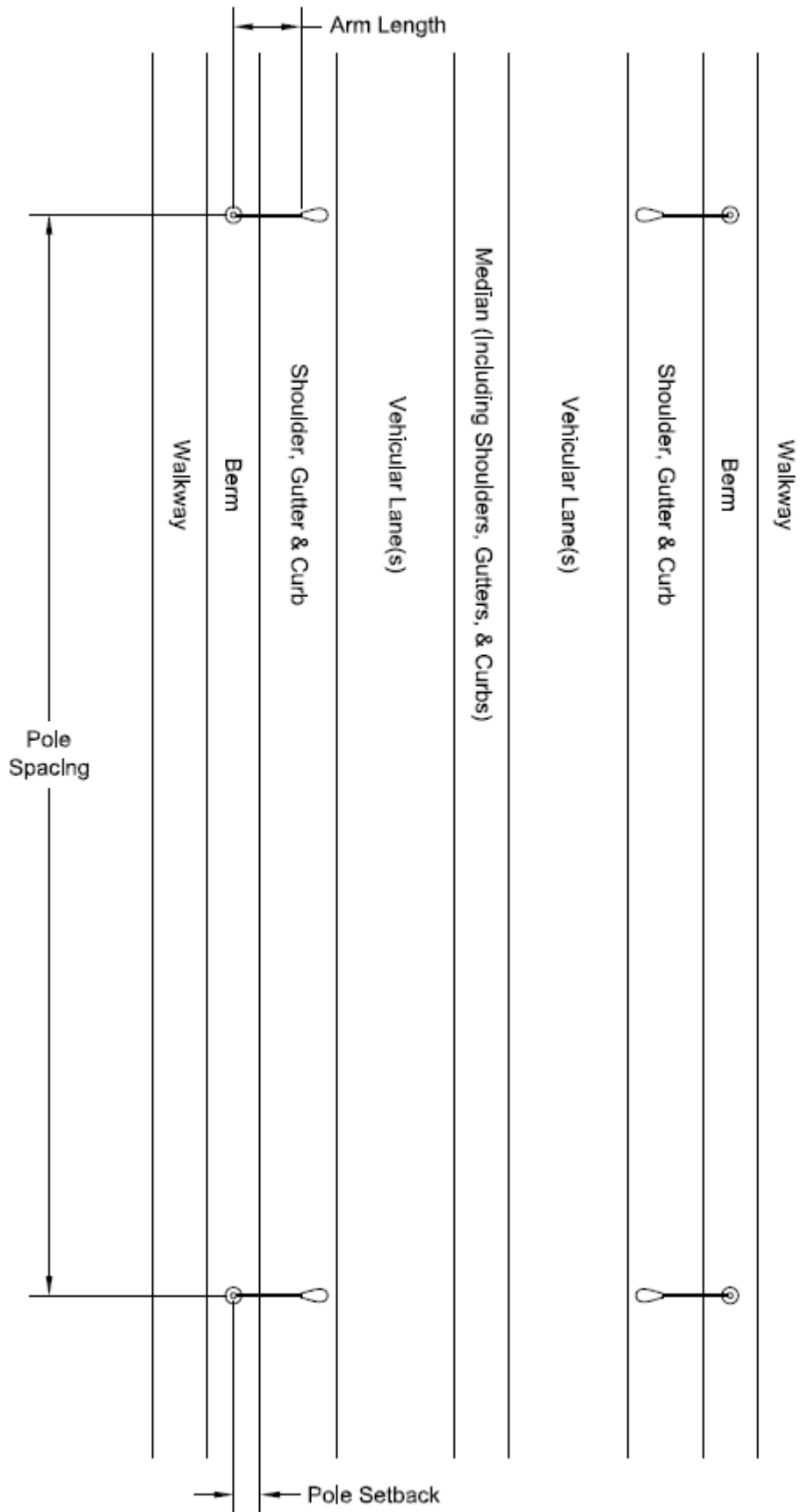
## Appendix I1 — Pole Layout Illustrations

The plan-view drawings provided on the following pages illustrate pole layouts indicated in the “system” specification method of section 5.1. These drawings are not to scale.

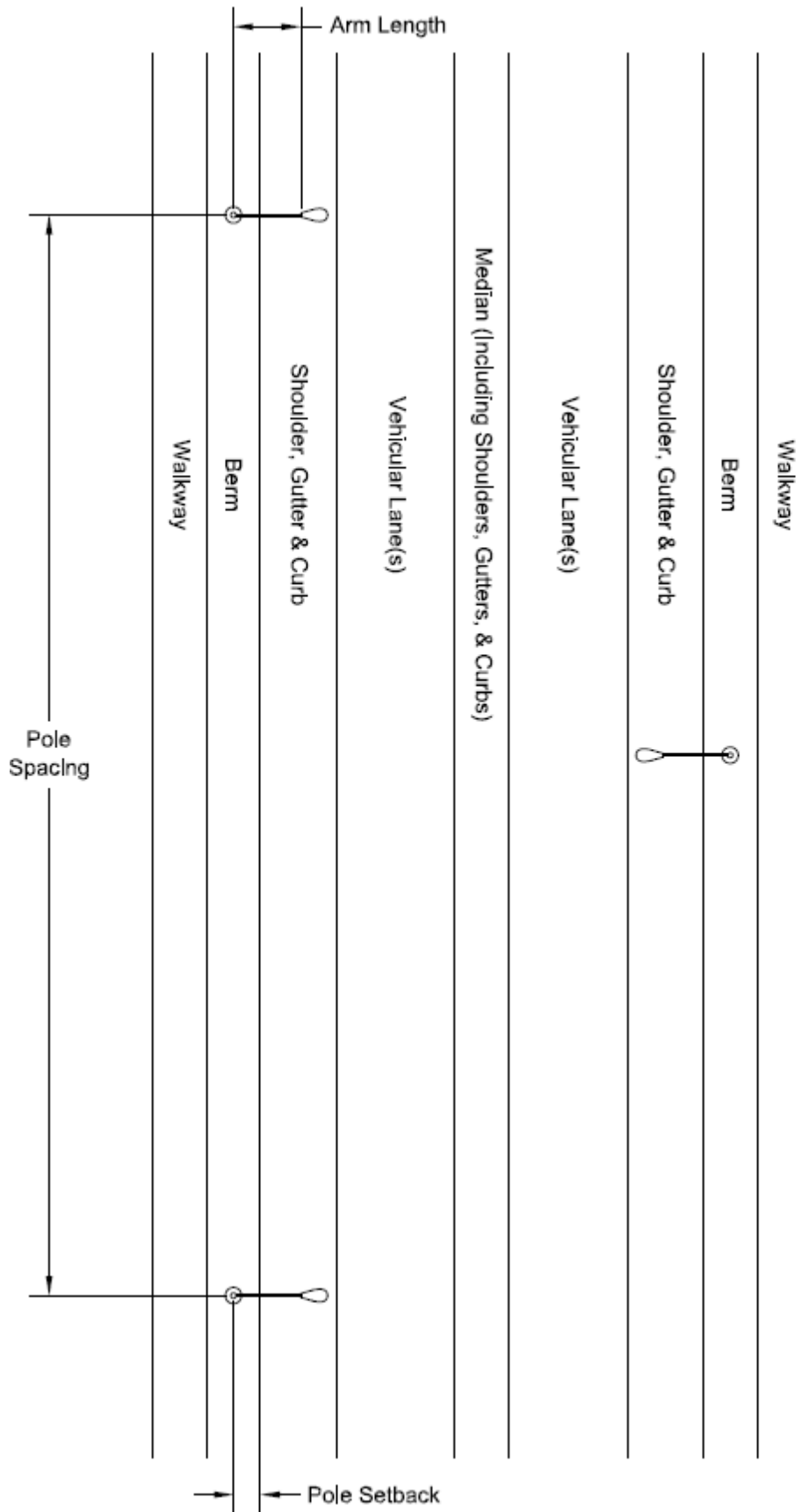
**One-sided Pole Layout  
One Luminaire Per Pole  
No Dedicated Bikeway**



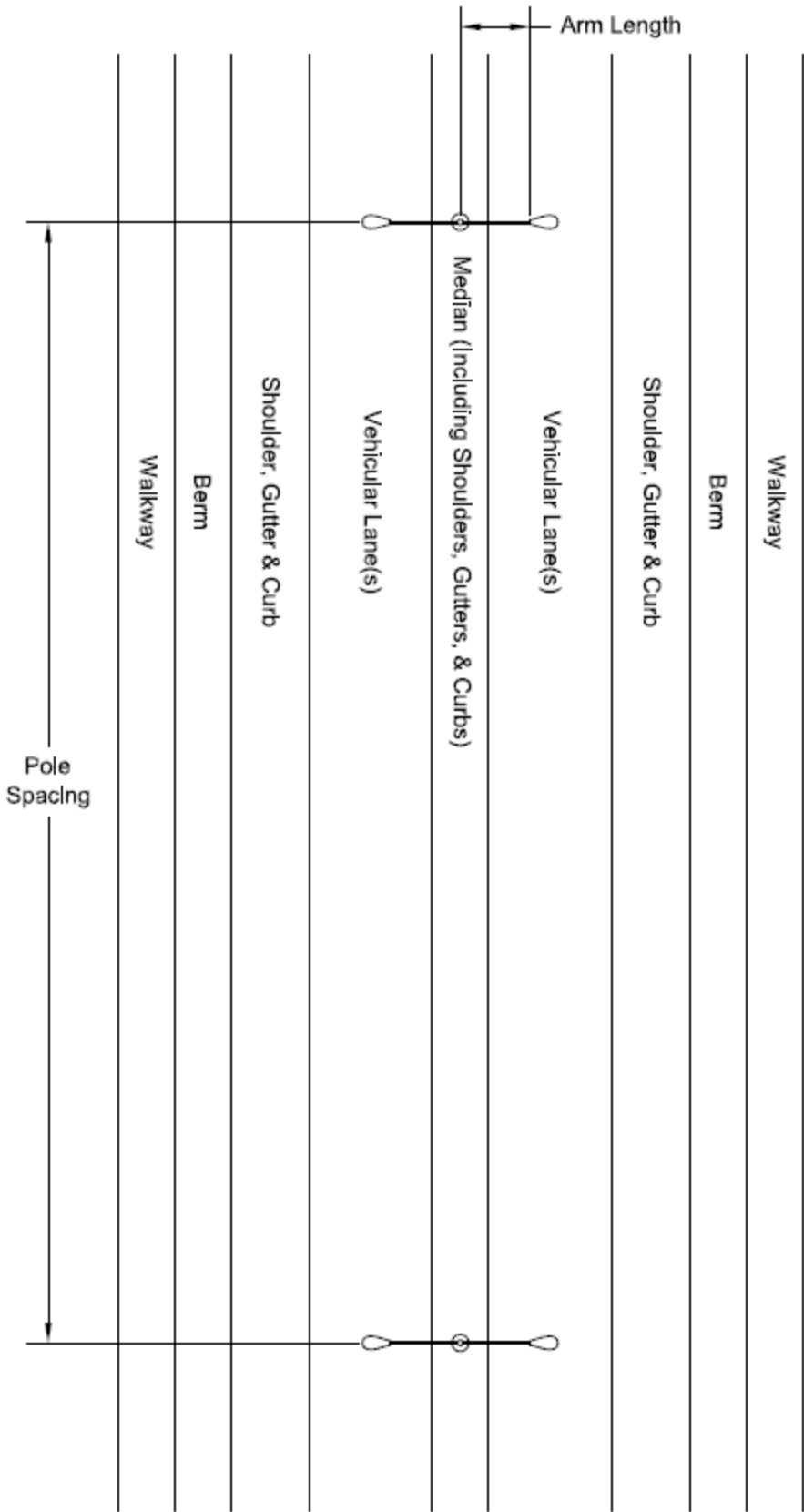
**Opposite Pole Layout  
One Luminaire Per Pole  
No Dedicated Bikeway**



**Staggered Pole Layout  
One Luminaire Per Pole  
No Dedicated Bikeway**



**Median Pole Layout  
Two Luminares Per Pole  
No Dedicated Bikeway**



## Appendix I2 — Electrical Immunity

### Test Procedure

1. Electrical Immunity Tests 1, 2 and 3, as defined by their Test Specifications, shall be performed on an entire powered and connected luminaire, including any control modules housed within the luminaire, but excluding any control modules mounted externally, such as a NEMA socket connected photo-control. A shorting cap should be placed across any such exterior connector.

The luminaire shall be connected to an AC power source with a configuration appropriate for nominal operation. The AC power source shall have a minimum available short-circuit current of 200A. The luminaire shall be tested at the nominal input voltage specified, or at the highest input voltage in the input voltage range specified.

Electrical Immunity test waveforms shall be superimposed on the input AC power line at a point within 6 inches (15cm) of entry into the luminaire using appropriate high-voltage probes and a series coupler/decoupler network (CDN) appropriate for each coupling mode, as defined by ANSI/IEEE C62.45-2002. The test area for all tests shall be set up according to ANSI/IEEE C62.45-2002, as appropriate.

Prior to electrical immunity testing a set of diagnostic measurements shall be performed, and the results recorded to note the pre-test function of the luminaire after it has reached thermal equilibrium. These measurements should include at a minimum:

- a. For all luminaires, Real Power, Input RMS Current, Power Factor and THD at full power/light output;
- b. For luminaires specified as dimmable, Real Power, Input RMS Current, Power Factor and THD at a minimum of 4 additional dimmed levels, including the rated minimum dimmed level.

Tests shall be applied in sequential order (Test 1, followed by Test 2, followed by Test 3). If a failure occurs during Test 3, then Test 3 shall be re-applied to a secondary luminaire of identical construction.

Following the completion of Tests 1, 2, and 3, the same set of diagnostic measurements performed pre-test should be repeated for all tested luminaires, and the results recorded to note the post-test function of the luminaire(s).

A luminaire must function normally and show no evidence of failure following the completion of Test 1 + Test 2 + Test 3 (for a single tested luminaire), or the completion of Test 1 + Test 2 on a primary luminaire and Test 3 on a secondary luminaire. Abnormal behavior during testing is acceptable.

A luminaire failure will be deemed to have occurred if any of the following conditions exists following the completion of testing:

- c. A hard power reset is required to return to normal operation;

- d. A noticeable reduction in full light output (e.g. one or more LEDs fail to produce light, or become unstable) is observed;
- e. Any of the post-test diagnostic measurements exceeds by  $\pm 10\%$  the corresponding pre-test diagnostic measurement;
- f. The luminaire, or any component in the luminaire (including but not limited to an electrical connector, a driver, a protection component or module) has ignited or shows evidence of melting or other heat-induced damage. Evidence of cracking, splitting, rupturing, or smoke damage on any component is acceptable.

Test Specifications

NOTE: L1 is typically “HOT”, L2 is typically “NEUTRAL” and PE = Protective Earth.

**Test 1) Ring Wave:** The luminaire shall be subjected to repetitive strikes of a “C Low Ring Wave” as defined in ANSI/IEEE C62.41.2-2002, Scenario 1, Location Category C. The test strikes shall be applied as specified by Table C.1. Prior to testing, the ring wave generator shall be calibrated to simultaneously meet BOTH the specified short circuit current peak and open circuit voltage peak MINIMUM requirements. Note that this may require that the generator charging voltage be raised above the specified level to obtain the specified current peak. Calibrated current probes/transformers designed for measuring high-frequency currents shall be used to measure test waveform currents.

Test waveform current shapes and peaks for all strikes shall be compared to ensure uniformity throughout each set (coupling mode + polarity/phase angle) of test strikes, and the average peak current shall be calculated and recorded. If any individual peak current in a set exceeds by  $\pm 10\%$  the average, the test setup shall be checked, and the test strikes repeated.

**Table C.1:** 0.5  $\mu$ S – 100Hz Ring Wave Specification

Parameter	Test Level/Configuration
Short Circuit Current Peak	0.5 kA
Open Circuit Voltage Peak	6 kV
Coupling Modes	L1 to PE, L2 to PE, L1 to L2
Polarity and Phase Angle	Positive at 90° and Negative at 270°
Test Strikes	5 for each Coupling Mode and Polarity/Phase Angle combination
Time between Strikes	1 minute
Total Number of Strikes	= 5 strikes x 3 coupling modes x 2 polarity/phase angles = 30 total strikes

**Test 2) Combination Wave:** The luminaire shall be subjected to repetitive strikes of a “C High Combination Wave” or “C Low Combination Wave”, as defined in ANSI/IEEE C62.41.2-2002,

Scenario 1, Location Category C. The test strikes shall be applied as specified by Table C.2. The “Low” test level shall be used for luminaires with **Basic** Electrical Immunity requirements, while “Moderate” shall be used for **Enhanced** and “High” shall be used **Elevated**.

Prior to testing, the combination wave generator shall be calibrated to simultaneously meet BOTH the specified short circuit current peak and open circuit voltage peak MINIMUM requirements. Note that this may require that the generator charging voltage be raised above the specified level to obtain the specified current peak. Calibrated current probes/transformers designed for measuring high-frequency currents shall be used to measure test waveform currents.

Test waveform current shapes and peaks for all strikes shall be compared to ensure uniformity throughout each set (coupling mode + polarity/phase angle) of test strikes, and the average peak current shall be calculated and recorded. If any individual peak current in a set exceeds by  $\pm 10\%$  the average, the test setup shall be checked, and the test strikes repeated.

**Table C.2:** 1.2/50 $\mu$ S – 8/20  $\mu$ S Combination Wave Specification

Parameter	Test Level/ Configuration		
1.2/50 $\mu$ S Open Circuit Voltage Peak	Low: 6 kV	Moderate: 10 kV	High: 20 kV <sup>1</sup>
8/20 $\mu$ S Short Circuit Current Peak	Low: 3 kA	Moderate: 5 kA	High: 10 kA
Coupling Modes	L1 to PE, L2 to PE, L1 to L2		
Polarity and Phase Angle	Positive at 90° and Negative at 270°		
Test Strikes	5 for each Coupling Mode and Polarity/Phase Angle combination		
Time Between Strikes	1 minute		
Total Number of Strikes	= 5 strikes x 3 coupling modes x 2 polarity/phase angles = 30 total strikes		

<sup>1</sup> This is a MINIMUM requirement. Note that for most combination wave generators, which have a source impedance of 2 $\Omega$ , the generator charging voltage will need to be raised above the specified level (to somewhere in the vicinity of 20kV) to obtain the specified current peak.

**Test 3) Electrical Fast Transient (EFT):** The luminaire shall be subjected to “Electrical Fast Transient Bursts”, as defined in ANSI/IEEE C62.41.2-2002. The test area shall be set up according to IEEE C62.45-2002. The bursts shall be applied as specified by Table C.3. Direct coupling is required; the use of a coupling clamp is not allowed.

**Table C.3:** Electrical Fast Transient (EFT) Specification

Parameter	Test Level/ Configuration
Open Circuit Voltage Peak	3 kV
Burst Repetition Rate	2.5 kHz



Burst Duration	15 milliseconds
Burst Period	300 milliseconds
Coupling Modes	L1 to PE, L2 to PE, L1 to L2
Polarity	Positive and Negative
Test Duration	1 minute for each Coupling Mode and Polarity combination
Total Test Duration	= 1 minute x 3 coupling modes x 2 polarities = 6 minutes

APPENDIX J  
PRODUCT PRICING AND SUBMITTAL WORKSHEET

<div style="background-color: red; color: white; padding: 10px; text-align: center;"> <h1>RSLPP</h1> <h2>Product &amp; Pricing Matrix</h2> </div>		Baseline Solutions					Total
		Cobrahead Fixture Style					
		70W HPS	100W HPS	150W HPS	250W HPS	400W HPS	
			100W MH	175W MH	250W MH	400W MH	
		100W MV	175W MV	250W MV	400W MV		
<b>ESCO Information</b>							
ESCO Name							
Installation Sub-Contractor Name							
Distribution Partner Name (not required)							
<b>LED Replacement Fixture Product Submittals</b>							
<b>General Information</b>							
Manufacturer							
Model #							
Housing Finish Color							
Tenon Nominal Pipe Size							
Nominal Luminaire Weight							
Nominal Luminaire EPA							
DLC Listed (Y/N)							
Make/model of LED light source(s)							
<b>Electrical Specifications</b>							
System Watts							
Nominal Luminaire Input Voltage							
System Drive Current (mA)							
Driver Type	0-10V	0-10V	0-10V	0-10V	0-10V		
Driver Life							
<b>Photometric Performance</b>							
Initial Delivered Lumens							
IES Distribution Type	III	III	III	III	III		
BUG Rating - B (backlight)							
BUG Rating - U (uplight)							
BUG Rating - G (glare)							
CRI							
CCT							
<b>Depreciation and Life Ratings</b>							
IES LM-80 Test Duration (Hours)							
Depreciation % @ 36,000 Hours							
L90 Rated Life (calculated)							
L80 Rated Life (calculated)							
L70 Rated Life (calculated)							
Warranty (years)	10	10	10	10	10		
<b>Efficiency Calculations</b>							
Lumens/Watt (initial)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Lumens/Watt (L90)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Lumens/Watt (L80)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		

<b>RSLPP</b> <b>Product &amp; Pricing Matrix</b>		Baseline Solutions					
		Cobrahead Fixture Style					
		70W HPS	100W HPS	150W HPS	250W HPS	400W HPS	Total
			100W MH	175W MH	250W MH	400W MH	
	100W MV	175W MV	250W MV	400W MV			
Lumens/Watt (L70)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
<b>Control Specifications</b>							
ANSI Receptcle Pin Configuration	5	5	5	5	5		

<b>RSLPP</b> <b>Product &amp; Pricing Matrix</b>		Baseline Solutions					Total
		Cobrahead Fixture Style					
		70W HPS	100W HPS	150W HPS	250W HPS	400W HPS	
			100W MH	175W MH	250W MH	400W MH	
	100W MV	175W MV	250W MV	400W MV			
<b>Fixture Unit Pricing</b>							
<b>Distributor Fixture Unit Cost</b>							
	Quantity <100						
	Quantity 100-500						
	Quantity 500-1000						
	Quantity 1000+ *						
	Price Effective Period (days)						
<b>Fixture Unit Cost ADDERS (enter N/A if not available or enter 0 if included in base spec fixture price)</b>							
	0-10V Driver (Base Specification)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	DALI Driver						
	3-Pin ANSI (Deduct)						
	5-Pin ANSI (Base Specification)*	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	7-Pin ANSI						
	Photocell*						
	Shorting cap						
	IES Type II (if available)						
	House Side Shield						
	Field Adjustable Light Level Options (N/A = Not Available)						
	ANSI C136.31 vibration level 2 (Level 1 assumed base specification)						
<b>Control System Unit Cost Adders</b>							
	Control Manufacturer						
	Control System Family Name						
	Fixture Control Node						
	Control Gateway (if required)						
	Control Server (if required)						
	Control Software (if required)						
<b>ESCO Material Markups</b>							
	ESCO Material Handling % *						
<b>Installation Labor Unit Prices/Fixture</b>							
	Fixture Replacement*						
	Fixture Removal Only						
	Fixture Add Only						
	Arm Removal Only						
	Arm Add Only						
	Overhead Power Connection						
	Underground Power Connection						
	Tree Branch Trimming						

<b>RSLPP</b> <b>Product &amp; Pricing Matrix</b>		Baseline Solutions					
		Cobrahead Fixture Style					
		70W HPS	100W HPS	150W HPS	250W HPS	400W HPS	Total
			100W MH	175W MH	250W MH	400W MH	
	100W MV	175W MV	250W MV	400W MV			
<b>Total Hard Costs</b>							
	Fixture Type Quantity *	7,247	18,596	1,709	2,823	1,974	32,349
<b>Total Material Price</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>Total Installation Price</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>Total Hard Costs</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>ESCO Service Costs (as % of Total Hard Costs)</b>							
	Investment Grade Audit						
	Procurement Services						
	Project Management						
	Commissioning						
	M&V						
	Overhead						
	Profit						
<b>Total ESCO Services %</b>		0%	0%	0%	0%	0%	
<b>Total ESCO Services \$</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>ESCO Total Program Costs</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

ESCO Design Costs for alternate project types	(\$/hr)
Area Lights	
Floodlights	
Wallpacks	
Decorative Post Tops	
Traffic Signals	

Fields Requiring ESCO Input

\* Fields used in total material price calculation