SCOPE OF ENGINEERING SERVICES
City of Charlottesville
Task Order No. 19
City of Charlottesville Pedestrian Lighting Study

Task Order No. 19 will be completed in accordance with the following Scope of Services and the standard provisions of our contract with the City of Charlottesville.

BACKGROUND / UNDERSTANDING

The scope of services detailed herein, generally consists of a review of pedestrian lighting standards and applications with the City, performing lighting field assessments within the areas noted, developing a prioritized improvement plan, and developing photometric lighting details at selected intersections. This scope is consistent with the requested services by The City of Charlottesville.

PROJECT SCOPE

This proposal outlines the design and field assessment tasks necessary for performance of the City of Charlottesville Pedestrian Lighting Study which will incorporate Area A, Downtown (including all streets within a boundary of High Street, 9th Street, Monticello Avenue and Ridge / McIntire, including the Downtown Mall and all crossing pedestrian streets) and Area B, University of Virginia (including all streets within a boundary of University Circle, Grady Avenue, 10th Street NW, West Main Street, University Avenue and Emmet Street). Also included are the highlighted intersections along Market Street and Water Street in the Downtown area. See attached maps for details. This effort will involve coordination with the City review lighting standards, collect field data to measure existing light readings, develop a preliminary priority plan and the preliminary lighting layout design of the selected intersections. The anticipated elements to be provided include the following:

A. Develop “Standard” Lighting Application

1. Identify Lighting Criteria
   a. Determine which facilities or facility types should have continuous or non-continuous lighting
   b. Determine appropriate light levels for facilities
   c. Review IES publications
   d. Review VDOT publications
2. Review other applicable publications
3. Attend Meeting with City to determine areas of focus for lighting criteria. At this meeting, the City will provide locations where it is believed light levels are sufficient or acceptable. Light readings will be taken at these locations for the purpose of comparison with the applicable standards as well as providing a basis of comparison with respect to the light readings we obtain within the study areas.

4. Define Desirable Lighting Characteristics by Facility
   a. Mark facilities on aerial and GIS mapping
   b. Develop graphic or tables to document each facility by type of lighting characteristics
5. Coordinate with the University of Virginia Exterior Lighting Study (http://www.officearchitect.virginia.edu/pdfs/UVaExteriorLightingStudyFinal.pdf)
6. Produce Summary Memo
a. Summarize criteria and desirable lighting characteristics including summary map and/or table
7. Meet with City to review the planned activities and upcoming field evaluations.

B. Field Assessment

1. Develop Maps and Field Work Checklists
2. Field Assessment will exclude areas of planned, or recently installed, lighting improvements by UVA. Per UVA’s information, improvements are planned, or complete, for parts of Emmet Street, University Avenue, Culbreth Road and Rugby Road.
3. Perform field assessment of pedestrian walkways or sidewalks along existing roads
   a. Measure existing light readings with meter over the course of multiple nights between 1 hour after sundown and 1 hour before sunrise.
   b. Register ambient light readings over the course of multiple nights to develop average readings in locations along each street, measuring areas of higher light and lower light along those routes.
   c. Perform field observations and photographic records of light fixtures and determine, to the extent possible, areas that are or are not Dark Skies compliant. This mainly consists of identifying fixtures where the lamp obviously emits light above the horizontal plane. Lighting fixtures will be reviewed with the City Traffic Engineer where lighting fixture types cannot be determined visually to further determine compliance with Dark Skies requirements, where possible. No readings will be performed to record this compliance.
   d. The field assessment will identify poles that are in poor condition and poles which may have right-of-way concerns strictly from the field view.

C. Improvement Plan

1. Develop a report prioritizing the findings into 3 tiers, high priority, medium priority and low priority, based on field readings with recommendations for planned improvements
2. Include design costs for priority 1 (highest priority) locations with preliminary construction costs (on a per pole basis) for entire area in the Improvement Plan Report
3. Provide a preliminary report to the City for review, including maps of the findings. Meet with the City and review the findings and recommendations. Revise report and maps based on comments from the City.
4. Provide a final report and recommendations, along with maps of the findings, to the City for use in briefing City Council and the public. Attend one City Council meeting in support of City Staff where the findings and recommendations are reviewed with Council. Maps will be notated and suitable for public review.

D. Intersection Lighting - Preliminary Design

1. Develop preliminary intersection lighting recommendations for the 15 selected intersections.
2. Obtain City GIS mapping and prepare base mapping from GIS for each intersection.
3. Perform Photometric Analysis for each intersection location.
4. Prepare preliminary lighting layout plans based on the photometric analysis. Prepare preliminary cost estimates for each intersection improvement. This will include field visits to each location to determine general location of existing features.
5. Submit plans and estimates for these intersection locations to the City for review and assist in planning future design and construction costs and timing.

EXCLUDED ITEMS

RK&K anticipates the following items will be excluded from this work at this time (RK&K can provide these services should they become necessary):

- Construction-Ready Intersection or Street Lighting Plans (Final Design)
- Detailed Photometric Analysis of streets other than the intersections identified in this Scope of Work.
- A formal evaluation of right-of-way will not be performed.
- Field Assessment will exclude areas of planned, or recently installed, lighting improvements by UVA.

SCHEDULE

RK&K anticipates the following schedule for this task order:

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Completion Date</th>
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<tbody>
<tr>
<td>Notice to Proceed</td>
<td>May 15, 2015</td>
</tr>
<tr>
<td>Complete Task A</td>
<td>6 weeks after NTP</td>
</tr>
<tr>
<td>Complete Task B</td>
<td>14 weeks after NTP</td>
</tr>
<tr>
<td>Complete Task C</td>
<td>21 weeks after NTP</td>
</tr>
<tr>
<td>Complete Task D</td>
<td>22 weeks after NTP</td>
</tr>
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</table>
FEES

Per the City’s request, the proposed fees for this task have been separated into the two areas Area A and Area B. RK&K recommends the City of Charlottesville budget $58,920.25 for Area A and $37,566.25 for Area B, Totaling $96,486.50 for Task Order No. 19 Citywide Lighting Study. This budget limit will not be exceeded without written documentation from the City of Charlottesville.

ACCEPTED:

CITY OF CHARLOTTESVILLE

BY: __________________________
Aubrey Watts
CFO/COO
DATE: ________________

ACCEPTED:

CITY OF CHARLOTTESVILLE

BY: __________________________
Mike Heny
Comptroller
DATE: ________________

Attachments: Maps of Area A and Area B

File Name: C:\Users\opeery\Documents\TaskOrder14 City Lighting Study 101614 OLP Rev -sms-1.doc
## COST AND PRICE SUMMARY - CONSULTANT SERVICES CONTRACT

**ADMINISTRATION:** City of Charlottesville  
**PROJECT:** Citywide Lighting Study  
**CONSULTANT:** RK&K  
**SUBCONSULTANT:**  
**CONTRACT NO:** 811-090  
**TASK 19**  
**ASSIGNMENT:**  
**DATE:** 11-May-15

### AVERAGE LOADED RATE:

<table>
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<th>Classification</th>
<th>Avg. Hourly Salary</th>
<th>Hours</th>
<th>Extension</th>
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<tr>
<td>Clerical</td>
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**TOTAL:** 852  
**Cost:** $92,904.00

Average Rate equals Extension divided by Hours:  
$109.04$

### COST AND PRICE SUMMARY

1. **DIRECT LABOR:**  
   - Manhours: 852  
   - Hours: $109.04$  
   - Average Hourly Rate = $92,904.00$

2. **ESCALATION:**  
   - 0.00% of Item 1 $- $

3. **PAYROLL ADDITIVES:**  
   - PB & OH 0.00% of Items 1 and 2 $- $

4. **Sub-total Items 1-3:** $92,904.00$

5. **FIXED FEE:**  
   - a. Dollar amnt. for profits and other factors: $- $
   - b. Line 5a represents 0.0% of Line 4 $- $

6. **DIRECT EXPENSES:** Append justification as necessary.  
   a. Mileage 1,500 miles at $0.56 per mile $= 832.50$
   b. Printing $= $  
   c. Photos/Video $= $  
   d. Mapping/Aerial Photography $= $  
   e. Per Diem 22 Days @ 125/day $= 2,750.00$

**Total Direct Costs:** $3,582.50$

7. **SUBCONTRACTOR/S:**  
   - Amount $- $

8. **OTHER (Specify)**  
   a. Principals Direct 0 hours at $90.00 per hour $= -$
   b. Principals Profit 10% $= -$
   c. $= -$

**Total Other:** $- $

9. **TOTAL PROPOSED FEE FOR THIS TASK:** $96,486.50$

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Citywide Lighting Study May 2015
### HOUR ESTIMATE

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<th>Engineer I / Designer</th>
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## COST AND PRICE SUMMARY - CONSULTANT SERVICES CONTRACT

**ADMINISTRATION:** City of Charlottesville  
**PROJECT:** Citywide Lighting Study  
**CONSULTANT:** RK&K  
**SUBCONSULTANT:**  
**CONTRACT NO:** 811-090  
**TASK 19**  
**ASSIGNMENT:** Area A - Downtown  
**DATE:** 11-May-15  

### AVERAGE LOADED RATE:

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<th>Extension</th>
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Average Rate equals Extension divided by Hours: **$106.78**

### COST AND PRICE SUMMARY

1. **DIRECT LABOR:** 535 Manhours **$106.78** Average Hourly Rate = **$57,129.00** (See above)

2. **ESCALATION:** 0.00% of Item 1 $ -

3. **PAYROLL ADDITIVES:** PB & OH 0.00% of Items 1 and 2 $ -

4. Sub-total Items 1-3: **$57,129.00**

5. **FIXED FEE:**  
   a. Dollar amnt. for profits and other factors: $ -  
   b. Line 5a represents 0.0% of Line 4 $ -

6. **DIRECT EXPENSES:** Append justification as necessary.  
   a. Mileage 750 miles at **$0.56** per mile = **$416.25**  
   b. Printing = $ -  
   c. Photos/Video = $ -  
   d. Mapping/Aerial Photography = $ -  
   e. Per Diem 11 Days @ 125/day = **$1,375.00**  

   Total Direct Costs: **$1,791.25**

7. **SUBCONTRACTOR/S:**  
   a.
   b.
   c. $ -  

   Total Subcontractors: $ -

8. **OTHER** (Specify)  
   a. Principals Direct 0 hours at **$90.00** per hour = $ -  
   b. Principals Profit 10% = $ -  
   c. = $ -  

   Total Other: $ -

9. **TOTAL PROPOSED FEE FOR THIS TASK:** **$58,920.25**
## HOUR ESTIMATE

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|                | 4320            | 8550            | 22770       | 21489                | 0          | 0        |       |
## COST AND PRICE SUMMARY - CONSULTANT SERVICES CONTRACT

**ADMINISTRATION:** City of Charlottesville  
**PROJECT:** Citywide Lighting Study  
**CONSULTANT:** RK&K  
**SUBCONSULTANT:**  
**CONTRACT NO:** 811-090  
**TASK 19**  
**ASSIGNMENT:** Area B - UVA  
**DATE:** 11-May-15

### AVERAGE LOADED RATE:

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<th>Extension</th>
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Average Rate equals Extension divided by Hours: $ 112.85

### COST AND PRICE SUMMARY

1. **DIRECT LABOR:**
   - Manhours: 317
   - Average Hourly Rate: $ 112.85
   - Total: $ 35,775.00 (See above)

2. **ESCALATION:**
   - 0.00% of Item 1
   - Sub-total Items 1-3: $ 35,775.00

3. **PAYROLL ADDITIVES:**
   - PB & OH 0.00% of Items 1 and 2
   - $ -

4. **FIXED FEE:**
   - a. Dollar amnt. for profits and other factors: $ -
   - b. Line 5a represents 0.0% of Line 4

5. **DIRECT EXPENSES:**
   - Append justification as necessary.
   - a. Mileage: 750 miles at $ 0.56 per mile = $ 416.25
   - b. Printing
   - c. Photos/Video = $ -
   - d. Mapping/Aerial Photography = $ -
   - e. Per Diem: 11 Days @ 125/day = $ 1,375.00
   - Total Direct Costs: $ 1,791.25

6. **SUBCONTRACTOR/S:**
   - Amount
   - a.
   - b.
   - c. $ -
   - Total Subcontractors: $ -

7. **OTHER (Specify):**
   - a. Principals Direct: 0 hours at $ 90.00 per hour = $ -
   - b. Principals Profit: 10% = $ -
   - c. = $ -
   - Total Other: $ -

8. **TOTAL PROPOSED FEE FOR THIS TASK:** $37,566.25
### TASK DESCRIPTION

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**HOUR ESTIMATE**

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**Total** $35775