


Municipality	L O C A L  A G E N C Y	 <b>Illinois Department of Transportation</b>	C O N S U L T A N T	Name EJM ENGINEERING, INC.
Township				Address 411 SOUTH WELLS STREET
County Lake County – Division of Transportation		Preliminary Engineering Services Agreement For Non-Motor Fuel Tax Funds		City CHICAGO
Section 16-00999-27-LT				State ILLINOIS

THIS AGREEMENT is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ between the above Local Agency (LA) and Consultant (ENGINEER) and covers certain professional engineering services in connection with the improvement of the above SECTION. Non-Motor Fuel Tax Funds, allotted to the LA ~~by the State of Illinois~~, under the general supervision of the State Department of Transportation, hereinafter called the "DEPARTMENT", will be used entirely ~~or in part~~ to finance ENGINEERING services as described under AGREEMENT PROVISIONS.

### Section Description

Name LAKE COUNTY- VARIOUS LOCATIONS

Route VARIOUS Length \_\_\_\_\_ Mi. \_\_\_\_\_ FT (Structure No. \_\_\_\_\_ )

Termini \_\_\_\_\_

Description:  
LED STREET LIGHTING INSTALLATION PROGRAM AND SUPPORT SERVICES

### Agreement Provisions

#### The Engineer Agrees,

1. To perform or be responsible for the performance of the following engineering services for the LA, in connection with the proposed improvements herein before described, and checked below:
  - a. ☐ Make such detailed surveys as are necessary for the preparation of detailed roadway plans
  - b. ☐ Make stream and flood plain hydraulic surveys and gather high water data, and flood histories for the preparation of detailed bridge plans.
  - c. ☐ Make or cause to be made such soil surveys or subsurface investigations including borings and soil profiles and analyses thereof as may be required to furnish sufficient data for the design of the proposed improvement. Such investigations are to be made in accordance with the current requirements of the DEPARTMENT.
  - d. ☐ Make or cause to be made such traffic studies and counts and special intersection studies as may be required to furnish sufficient data for the design of the proposed improvement.
  - e. ☐ Prepare Army Corps of Engineers Permit, **Lake County Stormwater Management Commission Permit**, Department of Natural Resources-Office of Water Resources Permit, Bridge waterway sketch, and/or Channel Change sketch, Utility plan and locations, and Railroad Crossing work agreements.
  - f. ☐ Prepare Preliminary Bridge design and Hydraulic Report, (including economic analysis of bridge or culvert types) and high water effects on roadway overflows and bridge approaches.
  - g. ☐ Make complete general and detailed plans, special provisions, proposals and estimates of cost and furnish the LA with **one (1) copy of each document in both hardcopy and electronic format**. Additional copies of any or all documents, if required, shall be furnished to the LA by the ENGINEER at the ENGINEER's actual cost for reproduction.
  - h. ☐ Furnish the LA with survey and drafts in **duplicate** of all necessary right-of-way dedications, construction easement and borrow pit and channel change agreements including prints of the corresponding plats and staking as required.
  - i. ☐ Assist the LA in the tabulation and interpretation of the contractors' proposals

- j. ☐ Prepare the necessary environmental documents in accordance with the procedures adopted by the DEPARTMENT's Bureau of Local Roads & Streets.
  - k. ☐ Prepare the Project Development Report when required by the DEPARTMENT.
  - l. ☒ **Services as included and/or defined in the attached Scope of Services.**
2. That all reports, plans, plats and special provisions to be furnished by the ENGINEER pursuant to the AGREEMENT, will be in accordance with current standard specifications and policies **of the LA of the DEPARTMENT**. It is being understood that all such reports, plats, plans and drafts shall, before being finally accepted, be subject to approval by the LA ~~and the DEPARTMENT~~.
  3. To attend conferences at any reasonable time when requested to do so by representatives of the LA ~~or the Department~~.
  4. In the event plans or surveys are found to be in error during construction of the SECTION and revisions of the plans or survey corrections are necessary, the ENGINEER agrees that the ENGINEER will perform such work without expense to the LA, even though final payment has been received by the ENGINEER. The ENGINEER shall give immediate attention to these changes so there will be a minimum delay to the CONTRACTOR.
  5. That basic survey notes and sketches, charts, computations and other data prepared or obtained by the ENGINEER pursuant to this AGREEMENT will be made available, upon request, to the LA ~~or the DEPARTMENT~~ without cost and without restriction or limitations as to their use.
  6. That all plans and other documents furnished by the ENGINEER pursuant to this AGREEMENT will be endorsed by the ENGINEER and will show the ENGINEER's professional seal where such is required by law.

**The LA Agrees,**

1. To pay the ENGINEER as compensation for all services rendered in accordance with this AGREEMENT according to the following method indicated by a check mark:
  - a. ☐ A sum of money equal to \_\_\_\_\_ percent of the awarded contract cost of the proposed improvement as approved by the DEPARTMENT.
  - b. ☐ A sum of money equal to the percent of the awarded contract cost for the proposed improvement as approved by the DEPARTMENT based on the following schedule:

Schedule for Percentages Based on Awarded Contract Cost

Awarded Cost	Percentage Fees	
Under \$50,000	_____	(see note)
	_____	%
	_____	%
	_____	%

Note: Not necessarily a percentage. Could use per diem, cost-plus or lump sum.

2. To pay for all services rendered in accordance with this AGREEMENT at the actual cost of performing such work plus   \*   percent to cover profit, overhead and readiness to serve - "actual cost" being defined as material cost plus payrolls, insurance, social security and retirement deductions. Traveling and other out-of-pocket expenses will be reimbursed to the ENGINEER at the ENGINEER's actual cost. Subject to the approval of the LA, the ENGINEER may sublet all or part of the services provided in section 1 of the ENGINEER AGREES. If the ENGINEER sublets all or part of this work, the LA will pay the cost to the ENGINEER plus an additional service charge of up to five (5) percent.

"Cost to Engineer" to be verified by furnishing the LA ~~and the DEPARTMENT~~ copies of invoices from the party doing the work. The classifications of the employees used in the work should be consistent with the employee classifications for the services performed. If the personnel of the firm, including the Principal Engineer, perform routine services that should normally be performed by lesser-salaried personnel, the wage rate billed for such services shall be commensurate with the work performed. **\*See the CECs**

**The Total Not-to-Exceed Contract Amount shall be \$107,825.01**

3. That payments due the ENGINEER for services rendered in accordance with this AGREEMENT will be made as soon as practicable after the services have been performed. ~~in accordance with the following schedule:~~
- ~~a. Upon completion of detailed plans, special provisions, proposals and estimate of cost - being the work required by section 1 of the ENGINEER AGREES - to the satisfaction of the LA and their approval by the DEPARTMENT, 90 percent of the total fee due under this AGREEMENT based on the approved estimate of cost.~~
  - ~~b. Upon award of the contract for the improvement by the LA and its approval by the DEPARTMENT, 100 percent of the total fee due under the AGREEMENT based on the awarded contract cost, less any amounts paid under "a" above.~~
- By Mutual agreement, partial payments, ~~not to exceed 90 percent of the amount earned~~, may be made from time to time as the work progresses.
4. That, should the improvement be abandoned at any time after the ENGINEER has performed any part of the services provided for in sections 1 and 3 of the ENGINEER AGREES and prior to the completion of such services, the LA shall reimburse the ENGINEER for the ENGINEER's actual costs plus \_\_\_\_ percent incurred up to the time the ENGINEER is notified in writing of such abandonment - "actual cost" being defined as in paragraph 2 of the LA AGREES.
5. That, should the LA require changes in any of the detailed plans, specifications or estimates except for those required pursuant to paragraph 4 of the ENGINEER AGREES, ~~after they have been approved by the DEPARTMENT~~, the LA will pay the ENGINEER for such changes on the basis of actual cost plus \_\_\_\_ percent to cover profit, overhead and readiness to serve - "actual cost" being defined as in paragraph 2 of the LA AGREES. It is understood that "changes" as used in this paragraph shall in no way relieve the ENGINEER of the ENGINEER's responsibility to prepare a complete and adequate set of plans and specifications.

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**It is Mutually Agreed,**

- 1. That any difference between the ENGINEER and the LA concerning their interpretation of the provisions of this Agreement shall be referred to a committee of disinterested parties consisting of one member appointed by the ENGINEER, one member appointed by the LA and a third member appointed by the two other members for disposition and that the committee's decision shall be final.
- 2. This AGREEMENT may be terminated by the LA upon giving notice in writing to the ENGINEER at the ENGINEER's last known post office address. Upon such termination, the ENGINEER shall cause to be delivered to the LA all surveys, permits, agreements, preliminary bridge design & hydraulic report, drawings, specifications, partial and completed estimates and data, if any from traffic studies and soil survey and subsurface investigations with the understanding that all such material becomes the property of the LA. The ENGINEER shall be paid for any services completed and any services partially completed in accordance with section 4 of the LA AGREES.
- 3. That if the contract for construction has not been awarded one year after the acceptance of the plans by the LA ~~and their approval by the DEPARTMENT~~, the LA will pay the ENGINEER the balance of the engineering fee due to make 100 percent of the total fees due under this AGREEMENT, based on the estimate of cost as prepared by the ENGINEER and approved by the LA ~~and the DEPARTMENT~~.
- 4. That the ENGINEER warrants that the ENGINEER has not employed or retained any company or person, other than a bona fide employee working solely for the ENGINEER, to solicit or secure this contract, and that the ENGINEER's has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the ENGINEER, any fee, commission, percentage, brokerage fee, gifts or any other consideration, contingent upon or resulting from the award or making of this contract. For Breach or violation of this warranty the LA shall have the right to annul this contract without liability.

IN WITNESS WHEREOF, the parties have caused the AGREEMENT to be executed in triplicate counterparts, each of which shall be considered as an original by their duly authorized officers.

Executed by the LA:

ATTEST:

By

Lake County

Clerk

(Seal)

County of Lake

(Municipality/Township/County)

of the

State of Illinois, acting by and through its

County Board

By

Title

Chairman of the County Board

RECOMMENDED FOR EXECUTION

Paula J. Trigg, P.E.  
Director of Transportation/County Engineer  
Lake County

Executed by the ENGINEER:

ATTEST:

By

Title

Engineering Firm

Street Address

City, State

By

Title

## **SCOPE OF SERVICES**

The scope of EJM Engineering, Inc. (EJM) design services for this project consists of the preparation of final Plan, Specification, and Estimate (PS&E) documents for the design and installation of LED street lighting within the boundaries of Lake County, Illinois.

### **1. MEETINGS AND COORDINATION**

EJM will attend coordination meetings with Lake County Division of Transportation to complete the scope of services. EJM will also coordinate the proposed LED lighting installation and energy requirement with the local Electric Utility Company

### **2. DATA COLLECTION**

EJM will collect and review data to complete the scope of services:

- A. Research and develop a white-paper regarding the medical and human concerns and benefits of LED lighting
- B. Conduct field surveys for the proposed LED street lighting retrofit work
- C. Review of existing street lighting inventory log and as-built plans

### **3. LED FIXTURE SELECTION**

EJM will research and review existing LED luminaires specifications from various manufacturers and agencies in an effort to select most appropriate LED light fixture for the intended application.

- A. Develop Specification for street lighting LED luminaire
- B. Develop Specification for underpass lighting LED luminaire
- C. Develop Specification for intersection lighting LED luminaire

### **4. DEVELOPMENT OF GUIDE INTERSECTION LIGHTING LAYOUTS**

EJM will develop various intersection LED lighting Guide layouts for various roadway and intersection configurations. The proposed Guide layouts are intended to only serve as design templates for future intersection lighting design projects; however, the design templates will be checked and validated for the intended application.

- A. Photometric Calculations for LED Intersection Lighting
- B. Develop Guide layout for a 3-lane intersections
- C. Develop Guide layout for a 5-lane intersection

### **5. PREPARATION OF FINAL PS&E DOCUMENTS FOR STREET LIGHT LED RETROFIT AT 114 SIGNALIZED INTERSECTIONS**

EJM will prepare final PS&E documents for replacement of existing HPS roadway lighting luminaires with LED luminaires at 114 signalized intersections.

- A. Preparation of LED retrofit plans
- B. Preparation of Special Provisions

- C. Preparation of Summary of Quantities
- D. Preparation of Estimate of Cost

## **6. PREPARATION OF FINAL PS&E FOR ROUNDABOUT LIGHTING DESIGN**

EJM will evaluate the existing lighting system at the Monaville Road and Cedar Lake Road Roundabout for potential relocation of some of the existing light poles due to repeated knockdowns; existing HPS luminaires will be replaced with LED luminaires. EJM scope of work will also include the validation of the existing lighting systems in conjunction with the installation of LED luminaires at the three (3) additional Roundabouts: (a) Riverwoods Road and Everett Road, (b) Wadsworth Road and Hunt Club Road, and (c) Hunt Club Road and Millburn Road.

### **A. LED Lighting Retrofit and Pole Relocation at Existing Roundabouts**

- i. Photometric Calculations to Validate LED Lighting Retrofits
- ii. Preparation of LED retrofit plans
- iii. Preparation of Pole Relocation Plans at Monaville Road and Cedar Lake Road Roundabout
- iv. Preparation of Pole Relocation Plans for other Roundabout locations as directed by Lake County Division of Transportation
- v. Preparation of Special Provisions
- vi. Preparation of Summary of Quantities
- vii. Preparation of Estimate of Cost

### **B. New Roundabout LED Lighting Design and Final PS&E Plan Preparation.**

The scope of work under this item will include a complete roundabout lighting design and PS&E plan preparation for one (1) additional future roundabout installation.

- i. Data Collection and Field Survey
- ii. Photometric Calculations for new roundabout lighting system
- iii. Preparation of proposed roundabout LED lighting PS&E plans
- iv. Preparation of Wiring Diagram and Electrical Detail
- v. Preparation of Voltage Drop Calculations
- vi. Preparation of Special Provisions
- vii. Preparation of Summary of Quantities
- viii. Preparation of Estimate of Cost

## **7. PREPARATION OF FINAL PS&E FOR UNDERPASS LED LIGHTING RETROFIT**

EJM will prepare PS&E plans for the replacement of existing HPS underpass luminaires with LED luminaires at the I-94 at Deerfield Road and at Washington Street Underpasses. EJM scope of work will also include lighting photometric calculations to ensure validity of the existing underpass lighting systems in conjunction with the installation of LED luminaires.

### **A. Photometric Calculations to Validate LED Lighting Retrofits**

- B. Preparation of LED retrofit plans
- C. Preparation of Special Provisions
- D. Preparation of Summary of Quantities
- E. Preparation of Estimate of Cost

## **8. PREPARATION OF FINAL PS&E FOR LED LIGHTING RETROFIT AT PULASKI DRIVE OVER US HIGHWAY 41**

EJM will prepare PS&E plans for the replacement of existing HPS roadway luminaires with LED luminaires at Pulaski Drive over US highway 41. EJM scope of work will also include lighting photometric calculations to ensure validity of the existing roadway lighting systems in conjunction with the installation of LED luminaires.

- A. Photometric Calculations to Validate LED Lighting Retrofits
- B. Preparation of LED retrofit plans
- C. Preparation of Special Provisions
- D. Preparation of Summary of Quantities
- E. Preparation of Estimate of Cost

## **9. QA/QC**

## **10. ADMINISTRATION**

### **General Items**

1. Plan sets and Special Provisions to be prepared in English units.
2. Lighting detail sheets will not be prepared to scale in order to properly illustrate installation details.
3. All electrical design will be in accordance with The National Electric Code (NEC), the National Electrical Safety Code (NESC) and any other applicable State or Local Electrical codes.