



Agreement Type

Original

LOCAL PUBLIC AGENCY

|                      |                      |                      |                      |                      |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| Local Public Agency  |                      | County               | Section Number       | Job Number           |
| <input type="text"/> |                      | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Project Number       | Contact Name         | Phone Number         | Email                |                      |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |

SECTION PROVISIONS

|   |                                  |                                  |   |
|---|----------------------------------|----------------------------------|---|
| Local Street/Road Name                    | Key Route                        | Length                           | Structure Number  |
| <input type="text"/>                      | <input type="text"/>             | <input type="text"/>             | <input type="text"/>  |
| Location Termini                          |                                  |                                  |   |
| <input type="text"/>                      |                                  |                                  |   |
| Project Description                       |                                  |                                  |   |
| <input type="text"/>                      |                                  |                                  |   |
| Engineering/Right-of-Way Services Funding | <input type="checkbox"/> Local   |                                  |   |
| Anticipated Construction Funding          | <input type="checkbox"/> Federal | <input type="checkbox"/> MFT/TBP | <input type="checkbox"/> State <input type="checkbox"/> Other |
| <input type="text"/>                      |                                  |                                  |   |

AGREEMENT FOR

Phase I - Preliminary Eng     Phase II - Design Eng     Phase III - Construction Eng     Right-of-Way Services

CONSULTANT

|                              |                      |                      |                      |
|------------------------------|----------------------|----------------------|----------------------|
| Prime Consultant (Firm) Name | Contact Name         | Phone Number         | Email                |
| <input type="text"/>         | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Address                      | City                 | State                | Zip Code             |
| <input type="text"/>         | <input type="text"/> | <input type="text"/> | <input type="text"/> |

THIS AGREEMENT is made between the above Local Public Agency (LPA) and Consultant (ENGINEER) and covers certain professional engineering services in connection with the improvement of the above roadway section. Local funding allotted to the LPA will be used entirely to finance ENGINEERING SERVICES (as defined in Exhibit A) for the PROJECT (as defined in the above Project Description).

Since the services contemplated under THIS AGREEMENT are professional in nature, it is understood that the ENGINEER, acting as an individual, partnership, firm or legal entity, qualifies for professional status and will be governed by professional ethics in its relationship to the LPA. The LPA acknowledges the professional and ethical status of the ENGINEER by entering into THIS AGREEMENT on the basis of its qualifications and experience and determining its compensation by mutually satisfactory negotiations.

WHEREVER IN THIS AGREEMENT or attached exhibits the following terms are used, they shall be interpreted to mean:

Resident Construction Supervisor    Authorized representative of the LPA in immediate charge of the engineering details of the construction of the PROJECT.  
 In Responsible Charge                 A full time LPA employee authorized to administer inherently governmental PROJECT activities, Company or Companies to which the construction contract was awarded.  
 Contractor

AGREEMENT EXHIBITS

The following EXHIBITS are attached hereto and made a part of hereof THIS AGREEMENT:

- EXHIBIT A: Scope of Services
- EXHIBIT B: Project Schedule
- EXHIBIT C: Qualification Based Selection (QBS) Checklist
- EXHIBIT D: Cost Estimate of Consultant Services (CECS) Worksheets (BLR 05513 or BLR 05514)
- EXHIBIT E: Direct Costs Check Sheet (attach BDE 436 when using Lump Sum on Specific Rate Compensation)
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**I. THE ENGINEER AGREES,**

1. To perform or be responsible for the performance of the Scope of Services presented in Exhibit A for the LPA in connection with the proposed improvements herein before described.
2. The Classifications of the employees used in the work shall be consistent with the employee classifications and estimated staff hours. If higher-salaried personnel of the firm, including the Principal Engineer, perform services to be performed by lesser-salaried personnel, the wage rate billed for such services shall be commensurate with the payroll rate for the work performed.
3. That the ENGINEER shall be responsible for the accuracy of the work and shall promptly make necessary revisions or corrections required as a result of the ENGINEER'S error, omissions or negligent acts without additional compensation. Acceptance of work by the LPA will not relieve the ENGINEER of the responsibility to make subsequent correction of any such errors or omissions or the responsibility for clarifying ambiguities.
4. That the ENGINEER will comply with applicable Federal laws and regulations, State of Illinois Statutes, and the local laws or ordinances of the LPA.
5. To pay its subconsultants for satisfactory performance no later than 30 days from receipt of each payment from the LPA.
6. To invoice the LPA:
  - (a) For Preliminary and/or Design Engineering: The ENGINEER shall submit all invoices to the LPA within three months of the completion of the work called for in THIS AGREEMENT or any subsequent Amendment or Supplement.
  - (b) For Construction Engineering: The ENGINEER shall submit invoices, based on the ENGINEER's progress reports, to the LPA employee In Responsible Charge, no more than once a month for partial payment on account for the ENGINEER's work to date. Such invoices shall represent the value, to the LPA of the partially completed work, based on the sum of the actual costs incurred, plus a percentage (equal to the percentage of the construction engineering completed) of the fixed fee for the fully completed work.
7. The ENGINEER or subconsultant shall not discriminate on the basis of race, color, national origin or sex in the performance of THIS AGREEMENT. The ENGINEER shall carry out applicable requirements of 49 CFR part 26 in the administration of US Department of Transportation (US DOT) assisted contract. Failure by the ENGINEER to carry out these requirements is a material breach of THIS AGREEMENT, which may result in the termination of THIS AGREEMENT or such other remedy as the LPA deems appropriate.
8. That none of the services to be furnished by the ENGINEER shall be sublet, assigned or transferred to any other party or parties without written consent of the LPA. The consent to sublet, assign or otherwise transfer any portion of the services to be furnished by the ENGINEER shall not be construed to relieve the ENGINEER of any responsibility for the fulfillment of THIS AGREEMENT.
9. For Preliminary Engineering Contracts:
  - (a) To attend meetings and visit the site of the proposed improvement when requested to do so by representatives of the LPA, as defined in Exhibit A (Scope of Services).
  - (b) That all plans and other documents furnished by the ENGINEER pursuant to THIS AGREEMENT will be endorsed by the ENGINEER and affixed the ENGINEER's professional seal when such seal is required by law. Such endorsements must be made by a person, duly licensed or registered in the appropriate category by the Department of Professional Regulation of the State of Illinois. It will be the ENGINEER's responsibility to affix the proper seal as required by the Bureau of Local Roads and Streets manual published by the State Department of Transportation, hereinafter called the "DEPARTMENT".
  - (c) That the ENGINEER is qualified technically and is thoroughly conversant with the design standards and policies applicable for the PROJECT; and that the ENGINEER has sufficient properly trained, organized and experienced personnel to perform the services enumerated in Exhibit A (Scope of Services).
10. For Construction Engineering Contracts:
  - (a) For Quality Assurance services, provide personnel who have completed the appropriate DEPARTMENT's Bureau of Materials QC/QA trained technical classes.
  - (b) For all projects where testing is required, the ENGINEER shall obtain samples according to the DEPARTMENT's Bureau of Materials "Manual of Test Procedures for Materials," submit DEPARTMENT's Bureau of Materials inspection reports; and verify compliance with contract specifications.
11. That the engineering services shall include all equipment, instruments, supplies, transportation and personnel required to perform the duties of the ENGINEER in connection with THIS AGREEMENT (See DIRECT COSTS tab in BLR 05513 or BLR 05514).

## II. THE LPA AGREES,

1. To certify by execution of THIS AGREEMENT that the selection of the ENGINEER was performed in accordance with the Professional Services Selection Act (50 ILCS 510) (Exhibit C).
2. To furnish the ENGINEER all presently available survey data, plans, specifications and project information.
3. For Construction Engineering Contracts:
  - (a) To furnish a full time LPA employee to be In Responsible Charge authorized to administer inherently governmental PROJECT activities.
  - (b) To prepare and approve forms BC 775 and BC 776 as necessary.
4. To pay the ENGINEER:
  - (a) For progressive payments - Upon receipt of monthly invoices from the ENGINEER and the approval thereof by the LPA, monthly payments for the work performed shall be due and payable to the ENGINEER, such payments to be equal to the value of the partially completed work minus all previous partial payments made to the ENGINEER.
  - (b) Final Payment - Upon approval of the work by the LPA but not later than 60 days after the work is completed and reports have been made and accepted by the LPA, a sum of money equal to the basic fee as determined in THIS AGREEMENT less the total of the amount of partial payments previously paid to the ENGINEER shall be due and payable to the ENGINEER.
  - (c) For Non-Federal County Projects - (605 ILCS 5/5-409)
    - (1) For progressive payments - Upon receipt of monthly invoices from the ENGINEER and the approval thereof by the LPA, monthly payments for the work performed shall be due and payable to the ENGINEER. Such payments to be equal to the value of the partially completed work in all previous partial payments made to the ENGINEER.
    - (2) Final payment - Upon approval of the work by the LPA but not later than 60 days after the work is completed and reports have been made and accepted by the LPA (and STATE as required), a sum of money equal to the basic fee as determined in THIS AGREEMENT less the total of the amount of partial payments previously paid to the ENGINEER shall be due and payable to the ENGINEER.
5. To pay the ENGINEER as compensation for all services rendered in accordance with THIS AGREEMENT on the basis of the following compensation method as discussed in 5-5.10 of the BLR Manual.

Method of Compensation

Percent

Lump Sum

Specific Rate

Cost plus Fixed Fee:

Total Compensation = DL + DC + OH + FF

Where:

DL is the total Direct Labor,  
DC is the total Direct Cost,  
OH is the firm's overhead rate applied to their DL and  
FF is the Fixed Fee.

Where  $FF = (0.33 + R) DL + \%SubDL$ , where R is the advertised Complexity Factor and %SubDL is 10% profit allowed on the direct labor of the subconsultants.

The Fixed Fee cannot exceed 15% of the DL + OH.

**Field Office Overhead Rates:** Field rates must be used for construction engineering projects expected to exceed one year in duration or if the construction engineering contract exceeds \$1,000,000 for any project duration.
6. The recipient shall not discriminate on the basis of race, color, national origin or sex in the award and performance of any US DOT-assisted contract or in the administration of its DBE program or the requirements of 49 CFR part 26. The recipient shall take all necessary and reasonable steps under 49 CFR part 26 to ensure nondiscrimination in the award and administration of US DOT-assisted contracts. The recipient's DBE program, as required by 49 CFR part 26 and as approved by US DOT, is incorporated by reference in THIS AGREEMENT. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as violation of THIS AGREEMENT. Upon notification to the recipient of its failure to carry out its approved program, the LPA may impose sanctions as provided for under part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C 3801 et seq.).

## III. IT IS MUTUALLY AGREED,

1. No work shall be commenced by the ENGINEER prior to issuance by the LPA of a written Notice to Proceed.
2. To maintain, for a minimum of 3 years after the completion of the contract, adequate books, records and supporting documents to verify the amount, recipients and uses of all disbursements of funds passing in conjunction with the contract; the contract and all books, records and supporting documents related to the contract shall be available for review and audit by the LPA or its

authorized representative, and to provide full access to all relevant materials. Failure to maintain the books, records and supporting documents required by this section shall establish a presumption in favor of the LPA for the recovery of any funds paid by the LPA under the contract for which adequate books, records and supporting documentation are not available to support their purported disbursement.

3. That the ENGINEER shall be responsible for any and all damages to property or persons arising out of an error, omission and/or negligent act in the prosecution of the ENGINEER's work and shall indemnify and save harmless the LPA and their officers, agents and employees from all suits, claims, actions or damages liabilities, costs or damages of any nature whatsoever resulting there from. These indemnities shall not be limited by the listing of any insurance policy. The LPA will notify the ENGINEER of any error or omission believed by the LPA to be caused by the negligence of the ENGINEER as soon as practicable after the discovery. The LPA reserves the right to take immediate action to remedy any error or omission if notification is not successful; if the ENGINEER fails to reply to a notification; or if the conditions created by the error or omission are in need of urgent correction to avoid accumulation of additional construction costs or damages to property and reasonable notice is not practicable.
4. THIS AGREEMENT may be terminated by the LPA 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 LPA all drawings, plats, surveys, reports, permits, agreements, soils and foundation analysis, provisions, specifications, partial and completed estimates and data, if any from soil survey and subsurface investigation with the understanding that all such materials become the property of the LPA. The LPA will be responsible for reimbursement of all eligible expenses incurred under the terms of THIS AGREEMENT up to the date of the written notice of termination.
5. The LPA may suspend work on the project. If THIS AGREEMENT is suspended by the LPA for more than thirty (30) calendar days, consecutive or in aggregate, over the term of THIS AGREEMENT, the ENGINEER shall be compensated for all services performed and reimbursable expenses incurred prior to receipt of notice of suspension. In addition, upon the resumption of services the LPA shall compensate the ENGINEER, for expenses incurred as a result of the suspension and resumption of its services, and the ENGINEER's schedule and fees for the remainder of the project shall be equitably adjusted.
6. THIS AGREEMENT shall continue as an open contract and the obligations created herein shall remain in full force and effect until the completion of construction of any phase of professional services performed by others based upon the service provided herein. All obligations of the ENGINEER accepted under THIS AGREEMENT shall cease if construction or subsequent professional services are not commenced within 5 years after final payment by the LPA.
7. The ENGINEER and LPA certify that their respective firm or agency:
  - (a) has not employed or retained for commission, percentage, brokerage, contingent fee or other considerations, any firm or person (other than a bona fide employee working solely for the LPA or the ENGINEER) to solicit or secure THIS AGREEMENT,
  - (b) has not agreed, as an express or implied condition for obtaining THIS AGREEMENT, to employ or retain the services of any firm or person in connection with carrying out THIS AGREEMENT or
  - (c) has not paid, or agreed to pay any firm, organization or person (other than a bona fide employee working solely for the LPA or the ENGINEER) any fee, contribution, donation or consideration of any kind for, or in connection with, procuring or carrying out THIS AGREEMENT.
  - (d) that neither the ENGINEER nor the LPA is/are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency,
  - (e) has not within a three-year period preceding THIS AGREEMENT been convicted of or had a civil judgment rendered against them for commission of fraud or criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State or local) transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property.
  - (f) are not presently indicated for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (e) and
  - (g) has not within a three-year period preceding THIS AGREEMENT had one or more public transaction (Federal, State, local) terminated for cause or default.
8. Where the ENGINEER or LPA is unable to certify to any of the above statements in this clarification, an explanation shall be attached to THIS AGREEMENT.
9. In the event of delays due to unforeseeable causes beyond the control of and without fault or negligence of the ENGINEER no claim for damages shall be made by either party. Termination of THIS AGREEMENT or adjustment of the fee for the remaining services may be requested by either party if the overall delay from the unforeseen causes prevents completion of the work within six months after the specified completion date. Examples of unforeseen causes included but are not limited to: acts of God or a public enemy; acts of the LPA, DEPARTMENT or other approving party not resulting from the ENGINEER's unacceptable services; fire; strikes; and floods.

If delays occur due to any cause preventing compliance with the PROJECT SCHEDULE, as defined in Exhibit B, the ENGINEER shall apply in writing to the LPA for an extension of time. If approved, the PROJECT SCHEDULE shall be revised accordingly.

10. The LPA elects to enforce the certification and requirements of the Drug Free Workplace Act (30 ILCS 580) in THIS AGREEMENT, as modified herein. No grantee or contractor shall receive a grant or be considered for the purpose of being awarded a contract for the procurement of any property or service from the LPA unless that grantee or contractor will provide a drug free workplace.

False certification or violation of the certification may result in sanctions including, but not limited to suspension of contract or grant payments, termination of a contract or grant and debarment of the contracting or grant opportunities with the LPA for at least one (1) year but not more than (5) years.

For the purpose of this certification, "grantee" or "Contractor" means a corporation, partnership or those entity with twenty-five (25) or more employees at the time of issuing the grant or a department, division or other unit thereof, directly responsible for the specific performance under contract or grant of \$5,000 or more from the LPA.

The contractor/grantee certifies and agrees that it will provide a drug free workplace by:

- (a) Publishing a statement:
  - (1) Notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance, including cannabis, is prohibited in the grantee's or contractor's workplace.
  - (2) Specifying the actions that will be taken against employees for violations of such prohibition.
  - (3) Notifying the employee that, as a condition of employment on such contract or grant, the employee will:
    - (a) abide by the terms of the statement; and
    - (b) notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.
- (b) Establishing a drug free awareness program to inform employees about:
  - (1) The dangers of drug abuse in the workplace;
  - (2) The grantee's or contractor's policy to maintain a drug free workplace;
  - (3) Any available drug counseling, rehabilitation and employee assistance program; and
  - (4) The penalties that may be imposed upon an employee for drug violations.
- (c) Providing a copy of the statement required by subparagraph (a) to each employee engaged in the performance of the contract or grant and to post the statement in a prominent place in the workplace.
- (d) Notifying the contracting or granting agency within ten (10) days after receiving notice under part (b) paragraph (3) of subsection (a) above from an employee or otherwise receiving actual notice of such conviction.
- (e) Imposing a sanction on, or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program.
- (f) Assisting employees in selecting a course of action in the event drug counseling, treatment and rehabilitation is required and indicating that a trained referral team is in place.

Making a good faith effort to continue to maintain a drug free workplace through implementation of the Drug Free Workplace Act, the ENGINEER and the LPA agree to meet the PROJECT SCHEDULE. Time is of the essence on this project and the ENGINEER's ability to meet the PROJECT SCHEDULE will be a factor in the LPA selecting the ENGINEER for future projects. The ENGINEER will submit progress reports with each invoice showing work that was completed during the last reporting period and work they expect to accomplish during the following period.

11. Due to the physical location of the project, certain work classifications may be subject to the Prevailing Wage Act (820 ILCS 130/0.01 et seq.).
12. For Preliminary Engineering Contracts:
- (a) That tracing, plans, specifications, estimates, maps and other documents prepared by the ENGINEER in accordance with THIS AGREEMENT shall be delivered to and become the property of the LPA and that basic survey notes, sketches, charts, CADD files, related electronic files, and other data prepared or obtained in accordance with THIS AGREEMENT shall be made available upon request to the LPA without restriction or limitation as to their use. Any re-use of these documents without the ENGINEER involvement shall be at the LPA's sole risk and will not impose liability upon the ENGINEER.
  - (b) That all reports, plans, estimates and special provisions furnished by the ENGINEER shall conform to the DEPARTMENT's current Standard Specifications for Road and Bridge Construction, Bureau of Local Roads and Streets Manual or any other applicable requirements of the LPA, it being understood that all such furnished documents shall be approved by the LPA before final acceptance. During the performance of the engineering services herein provided for, the ENGINEER shall be responsible for any loss or damage to the documents herein enumerated while they are in the ENGINEER's possession and any such loss or damage shall be restored at the ENGINEER's expense.

For Construction Engineering Contracts:

- (a) That all services are to be furnished as required by construction progress and as determined by the LPA employee In Responsible Charge. The ENGINEER shall complete all services herein within a time considered reasonable to the LPA, after the CONTRACTOR has completed the construction contract.
- (b) That all field notes, test records and reports shall be turned over to and become the property of the LPA and that during the performance of the engineering services herein provide for, the ENGINEER shall be responsible for any loss or damage to the documents herein enumerated while they are in the ENGINEER's possession and any such loss or damage shall be restored at the ENGINEER's expense.



**AGREEMENT SIGNATURES**

Executed by the LPA:

Attest: The  of

By (Signature & Date)

By (Signature & Date)

(SEAL)

Executed by the ENGINEER:

Prime Consultant (Firm) Name

Attest:

By (Signature & Date)

By (Signature & Date)

Title

Title

Local Public Agency

Prime Consultant (Firm) Name

County

Section Number

**EXHIBIT A  
SCOPE OF SERVICES**

To perform or be responsible for the performance of the engineering services for the LPA, in connection with the PROJECT herein before described and enumerated below:



Local Public Agency

Prime Consultant (Firm) Name

County

Section Number

**EXHIBIT B  
PROJECT SCHEDULE**

|                     |                              |        |                |
|---------------------|------------------------------|--------|----------------|
| Local Public Agency | Prime Consultant (Firm) Name | County | Section Number |
|                     |                              |        |                |

**EXHIBIT C**  
**Qualification Based Selection (QBS) Checklist**

The LPA must complete Exhibit D. If the value meets or will exceed the threshold in 50 ILCS 510, QBS requirements must be followed. Under the threshold, QBS requirements do not apply. The threshold is adjusted annually. If the value is under the threshold with federal funds being used, federal small purchase guidelines must be followed.

Form Not Applicable (engineering services less than the threshold)

**Items 1-13 are required when using federal funds and QBS process is applicable. Items 14-16 are required when using State funds and the QBS process is applicable.**

|  |  | No                       | Yes                      |
|--|--|--------------------------|--------------------------|
| 1  | Do the written QBS policies and procedures discuss the initial administration (procurement, management and administration) concerning engineering and design related consultant services?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2  | Do the written QBS policies and procedures follow the requirements as outlined in Section 5-5 and specifically Section 5-5.06 (e) of the BLRS Manual?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 3  | Was the scope of services for this project clearly defined?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 4  | Was public notice given for this project?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 5  | Do the written QBS policies and procedures cover conflicts of interest?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 6  | Do the written QBS policies and procedures use covered methods of verification for suspension and debarment?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 7  | Do the written QBS policies and procedures discuss the methods of evaluation?  | <input type="checkbox"/> | <input type="checkbox"/> |
|  | Project Criteria   | Weighting                |                          |
|  | +  |                          |                          |
|  | -  |                          |                          |
| 8  | Do the written QBS policies and procedures discuss the method of selection?  | <input type="checkbox"/> | <input type="checkbox"/> |
| Selection committee (titles) for this project          |  |                          |                          |
|  |  |                          |                          |
| Top three consultants ranked for this project in order |  |                          |                          |
| 1  |  |                          |                          |
| 2  |  |                          |                          |
| 3  |  |                          |                          |
| 9  | Was an estimated cost of engineering for this project developed in-house prior to contract negotiation?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 10   | Were negotiations for this project performed in accordance with federal requirements.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 11   | Were acceptable costs for this project verified?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 12   | Do the written QBS policies and procedures cover review and approving for payment, before forwarding the request for reimbursement to IDOT for further review and approval?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 13   | Do the written QBS policies and procedures cover ongoing and finalizing administration of the project (monitoring, evaluation, closing-out a contract, records retention, responsibility, remedies to violations or breaches to a contract, and resolution of disputes)? | <input type="checkbox"/> | <input type="checkbox"/> |
| 14   | QBS according to State requirements used?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 15   | Existing relationship used in lieu of QBS process?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 16   | LPA is a home rule community (Exempt from QBS).  | <input type="checkbox"/> | <input type="checkbox"/> |

**Scope of work: Surveying for Hine's emerald dragonfly (*Somatochlora hineana*) larvae in the Lake in the Hills Fen along Randall Road, near Crystal Lake, Illinois.**

Prepared for: Darrell W. Kuntz, P.E.

McHenry County Division of Transportation

By: **Daniel A. Soluk, Ph.D. and Tristan D. Soluk**

**31374 Hillcrest Pl.**

**Vermillion, SD 57069**

**Ph. 217 621-9446**

**Email: [10dsoluk@gmail.com](mailto:10dsoluk@gmail.com)**

**March 11, 2024**

This scope of work describes the activities to be conducted, and an estimate of the associated costs for a survey for larvae of the Hine's emerald dragonfly (*Somatochlora hineana*), a federally listed endangered species. This survey is to be conducted in part of the Lake in the Hills Fen near Crystal Lake, Illinois, an area that may be impacted by construction activities associated with the widening of Randall Road. This area is only 7 miles from Spring Lake Forest Preserve, which is known to contain breeding habitat for the Hine's emerald dragonfly. A preliminary survey to determine whether wetlands in this area of Lake in the Hills Fen contained possible habitat for the Hine's emerald dragonfly was conducted in the late fall of 2023 (Soluk and Soluk, 2023). Within the limitations of the season, this survey determined that some of the streamlets and flowage areas in the area had features consistent with suitable habitat for the larval stages of the Hine's emerald dragonfly. In all, this preliminary survey identified approximately 530m of streamlet habitat located in about 75 acres (30.4 hectares) of wetland habitat that should be directly assessed for the presence of larval Hine's emerald dragonflies.

We propose to assess the presence of Hine's emerald dragonfly larvae by conducting on-the-ground searches of the stream and flowage area of the wetlands in the survey area using trained personnel experienced in collecting, handling and identifying this endangered species. We have been conducting studies of the Hine's emerald dragonfly in Illinois and Wisconsin since 1995 and have surveyed numerous sites for adults and larvae in Illinois, Wisconsin, and Michigan. Sampling for Hine's emerald dragonfly larvae requires specialized sampling techniques to successfully extract them from crayfish burrows and open water habitats.

Positive identification of Hine's emerald dragonfly larvae can be extremely difficult for early year classes (1- to 3-year-old larvae) that may require captive-rearing and genetic testing. The Lake in the Hills Fen area is particularly challenging because it is an area where the presence of the clamp-tipped emerald (*Somatochlora tenebrosa*), very closely related to the Hine's emerald dragonfly, has been recently reported.

To sample possible habitat areas in the Lake in the Hills Fen for larval Hine's emerald dragonflies we will first remap them and mark sampling stations and transects using GPS. We will then search for and identify active crayfish burrows in the area of the sampling stations and transects. This will be followed by larval sampling using standardized crayfish burrow pumping techniques and netted sampling techniques as appropriate at each station. For areas in the zone of greatest probable impact from the road we will pump all burrows and use sweep nets to sample the entire channel. In addition to these traditional techniques, we will also assess the presence of environmental DNA (eDNA) shed by Hine's emerald dragonfly larvae in the water of potential habitat areas. Sampling for eDNA has the potential to detect larvae missed during conventional sampling. Larval Hine's emerald dragonfly assessment in the potential habitat areas will begin in late April and continue into May, depending upon water conditions and the degree to which controlled burns facilitate habitat accessibility. Sampling efforts will establish whether there is occupancy and assess the extent of that occupancy within the site. Larval sampling will be conducted with an intensity that may allow estimation of larval density and total population numbers in the sampled area, information that could be important for estimation of incidental take of individuals, or avoidance of particular habitat areas during construction.

Deliverables for this work include a report indicating: 1) the locations and extent of areas examined on the Lake in the Hills Fen, 2) a direct assessment of their status as non-habitat, possible habitat, or probable habitat, 3) whether any larval Hine's emerald dragonfly larvae were collected, their number and size, and 4) an estimation of the number of larvae likely being supported in identified larval habitat.

Estimated costs include time for travel, field assessment, and report preparation. Personnel costs include funds for the: Principal Investigator (Daniel Soluk: project coordination, larval identification, and report preparation), Field Supervisor (Tristan Soluk: project preparation, GIS mapping, on-site sampling, larval identification, and report preparation), Field and Laboratory Assistants (2 or 3) (on-site sampling, eDNA collection and analysis). Travel is for mileage reimbursement and per diem. Supplies are for items required to facilitate conventional sampling, eDNA sampling, and eDNA analysis.

**Cost estimate for Hine's emerald dragonfly conventional larval and eDNA surveys at Lake in the Hills Fen:**

Personnel

|  |          |
|--|----------|
| Principal Investigator (60 hours @ \$225/hour) | \$13,500 |
| Field Supervisor (95 hours @ \$150/hour)       | \$14,250 |
| Field/eDNA Technicians (124 hours@\$100/hour)  | \$12,400 |

Travel

|                                     |         |
|-------------------------------------|---------|
| Mileage (5000 miles @ \$0.625/mile) | \$3,125 |
| Per Diem (24 days @ \$64/ day)      | \$1,536 |

Supplies

|  |         |
|--|---------|
| Supplies for sampling and genetic analysis | \$3,000 |
|--|---------|

|       |          |
|-------|----------|
| Total | \$47,811 |
|-------|----------|