DESCRIPTION AND MINIMUM REQUIREMENTS FOR PREQUALIFICATION

For Engineering, Architectural & Professional Services

AUGUST 5, 2026

Illinois Department of Transportation

Table of Contents

General Requirements 4

A. SPECIALTY CATEGORY 5

B. APPLYING FOR A COMPLEX AND LESSER CATEGORY 5

Prequalification Categories 6

C. PREPARATION OF PLANS, SPECIAL PROVISIONS AND ESTIMATES 6
1. Airports 6
a. Construction Inspection 6
b. Construction Inspection: Complex Electrical 7
c. Design 7
d. Design: Complex Electrical 7
e. Master Planning/Airport Layout Plans (ALP) 8
2. Highways 8
a. Roads and Streets 8
b. Freeways 8
3. Structures 9
a. Highway 9
b. Major River Bridges 11
c. Movable 11
d. Painting Inspections 11
e. Railroad 12
f. Steel Fabrication Inspections 12
g. Underwater Diving Inspections 12

D. SPECIAL PLANS 14
1. Lighting 14
a. Typical 14
b. Complex 14
2. Pumping Stations 15
3. Traffic Signals 16

E. SPECIAL STUDIES 17
1. Feasibility 17
2. Location Drainage 17
3. Pavement Analysis and Evaluation 18
4. Safety 18
5. Signal Coordination & Timing (SCAT) 18
6. Traffic Studies 19

F. LOCATION DESIGN STUDIES 20
1. Rehabilitation 20
2. Reconstruction/Major Rehabilitation 20
3. New Construction/Major Reconstruction 21

G. HYDRAULIC REPORTS 22
1. Pump Stations 22
2. Waterways 22
a. Typical 22
b. Complex 23
c. Two-Dimensional Hydraulics (2D) 24

H. GEOTECHNICAL SERVICES 25
1. General Geotechnical Services 25
2. Complex Geotechnical/Major Foundations 25
3. Structure Geotechnical Reports (SGR) 26
4. Subsurface Explorations 27

I. ENVIRONMENTAL REPORTS 29
1. Environmental Assessment (EA) 29
2. Environmental Impact Statements (EIS) 30

J. TRANSPORTATION STUDIES 33
1. Mass Transit 33
2. Railway Engineering 33
3. Railway Planning 33

K. SPECIAL SERVICES 34
1. Aerial Mapping/LiDAR 34
2. Architecture 34
3. Asbestos Abatement Surveys 34
4. Construction Inspection 35
5. Electrical Engineering 36
6. Landscape Architecture 36
7. Mechanical Engineering 36
8. Mobile LiDAR 37
9. Project Controls 37
10. Public Involvement 38
11. Quality Assurance Testing (HMA & Aggregate / PCC & Aggregate) 39
12. Regulated Substances 41
a. Simple 41
b. Advance 44
13. Sanitary Engineering 48
14. Subsurface Utility Engineering 48
15. Surveying 49

L. SPECIALTY AGENTS 50
1. Appraiser 50
2. Review Appraiser 51
3. Negotiator 51
4. Relocation Agent 52

APPENDIX: LIST OF CATEGORIES 53

General Requirements

The Illinois Department of Transportation prequalifies engineering/architectural consultants in multiple transportation categories of service. This is accomplished by interested firms submitting a Statement of Experience and Financial Condition (SEFC) to the department through the Engineering and Prequalification System (EPAS): https://apps1.dot.illinois.gov/epas

These descriptions and minimum requirements for prequalification supplement the SEFC and are to be used as a guide in determining areas of specialization for which firms may wish to apply for prequalification. The categories are in the EPAS application. All categories require a questionnaire to be completed and the questionnaires are required to be completed to be considered for prequalification in the categories. All consultants, prime and/or subconsultants, must be prequalified in the category of work the firm is performing.

Most categories require the firm to be registered through Illinois Department of Financial and Professional Regulation (IDFPR). Consultant firms are required to be registered as a Professional Design Firm in the following disciplines, Professional Engineering, Structural Engineering, Land Surveying, and/or Architecture.

Where the minimum requirements indicate Illinois licensing or registration, that individual must be a full-time employee who has acted in a leadership role on pertinent projects. **A full-time employee is defined as one who works for a firm 35 or more hours/week, 52 weeks/year**. Part-time staff members, special consultants, subconsultants, committed or pledging individuals, or persons on retainers ***cannot*** be used to meet the minimum requirements for prequalification, except as allowed for Environmental Reports, and Specialty Agent prequalification categories. The experience of these licensed or registered individuals must be relevant to the category of transportation work and the work must have been performed within the **last ten (10) years,** except for Environmental Reports.

Projects submitted for consideration must be complete. Ongoing projects and estimated completions dates for projects are not considered. Completion dates are for the specific category; for example, roads and streets projects are considered complete when the PS&E are done, and the project is ready for bid. Location Design Report categories are complete when the Design Report has been prepared and the project is ready for the design phase.

Prequalification is based on firm experience and on individual experience. A firm can hire an individual with experience and if there is sufficient support staff, the firm can become prequalified in most categories. Each category is reviewed by IDOT experts in the specific categories and the firm's experience and the firm's staff experience is taken into consideration when prequalifying a firm. IDOT works with firms when prequalifying and may request additional information from the firm during the review process. The firm's support staff of engineers and/or technicians must have pertinent experience or training and be full-time. The lack of relevant experience or training of the support staff may result in denial of prequalification.

Firms must be specific in listing all experience, which qualifies them for prequalification in each category. At least one Principal Supervisory Personnel listed in the Statement of Experience and Financial Condition must have been in responsible charge of the firm's projects they are using for prequalification consideration. Details must be provided in the questionnaire for the specific categories in the Statement of Experience and Financial Condition.

Firms requesting prequalification in any area of specialization, at the department's discretion, will be required to send documentation of their past work and/or give a presentation to the department outlining the experience and capabilities of current staff and how the staff would accomplish a project if selected. The department at its discretion may make on-site visits to the consultant's office to verify the information set forth in the SEFC document submitted by a firm.

A. SPECIALTY CATEGORY

The Engineering Prequalification Agreement System (EPAS) has a “Special Services - Specialty Firm” as one of the Prequalification Category choices when becoming prequalified.

This option is to be used for a select few specialties the department utilizes for our transportation projects. Examples of these categories are:
(1) Value Engineering
(2) Miscellaneous services approved by Consultant Services Unit (DOT.ConsultantServices@illinois.gov).

Firms desiring to submit for a specialty category not listed above should first contact the department before submitting. Firms which submit for the specialty category and **do not** fall into the list above or who have not received prior approval will be **denied** qualification with the department.

All other firms must submit using an established prequalification category as described within this document.

B. APPLYING FOR A COMPLEX AND LESSER CATEGORY

The following categories, you can fill out the more complex category, and leave the lesser categories blank. Note you still must add the lesser categories to get prequalified in them but can leave them blank in EPAS. This is a risk because if you get denied in the complex category and have the lesser category(s) questionnaire blank, you will be denied in all of them.

(1) Structures: Highway: Complex
    a. Structures - Highway: Advanced Typical
    b. Structures - Highway: Typical
    c. Structures - Highway: Simple

(2) Location Design Studies - New Construction/Major Reconstruction
    a. Location Design Studies - Reconstruction/Major Rehabilitation
    b. Location Design Studies - Rehabilitation

(3) Highways – Freeways
    a. Highways - Roads and Streets

(4) Regulated Substances: Advance
    a. Regulated Substances: Simple

Prequalification Categories

The description of the work involved in the areas of specialization and the minimum requirements are as follows:

C. PREPARATION OF PLANS, SPECIAL PROVISIONS AND ESTIMATES

1. Airports

Airports consist of engineering services and studies necessary for development of the air-side facilities of airports (runways, taxiways, aprons, lighting systems, etc.). Land-side facilities (roads, parking lots, terminal buildings, etc.) are not considered for prequalification in Airports. The year in which work was completed is required. Note that pre-qualification in the EA and/or EIS category under I. ENVIRONMENTAL REPORTS is required for any CATEX/EA/EIS work on airports as well.

The following phases are considered for Airports prequalification:

a. Construction Inspection

(1) Airport Construction (Resident Engineering) - airfield pavements and simple electrical.
(2) Previous relevant air-side inspection work on Airports within the last ten (10) years from date of submittal is required for a prequalification rating in this category.
(3) Per department Policy, a minimum requirement of one (1) full-time employee with current training in “Fundamentals of Storm Water Pollution and Erosion and Sediment Control” and “Erosion and Sediment Control for Construction” classes. The currently trained individual(s) will be required to review the construction projects on a regular basis as directed by the department. A current certification indicating evidence of successful completion of each course will be required to be submitted.
(4) Minimum requirement of one (1) full-time employee with successful completion of the IDOT QC/QA Level 2 Technician class for both HMA and PCC. A current certificate must be included in the submittal.
(5) Minimum personnel requirements are one (1) Illinois Licensed Professional Engineer experienced in one or more phases of airport construction inspection work who is designated as the Project Manager.
(6) In addition to the above-mentioned individuals, the consultant must also have one (1) or more in-house full-time employees who have a working knowledge of IDOT documentation procedures for the inspection of work and a current certificate for the successful completion of the IDOT Construction Documentation of Contract Quantities. A current IDOT Construction Documentation of Contract Quantities certificate must be included.

b. Construction Inspection: Complex Electrical

(1) Airport Electrical Construction (Resident Engineering) - specialized NAVAIDs, vault work, complex electrical systems (as determined by the Division of Aeronautics).
(2) Previous relevant air-side electrical inspection work on Airports within the last ten (10) years from date of submittal is required for a prequalification rating in this category.
(3) Minimum personnel requirements are one (1) Illinois Licensed Professional Engineer specializing in Electrical Engineering with experienced in one or more phases of airport electrical construction inspection work.
(4) In addition to the above-mentioned individuals, the consultant must also have one (1) or more in-house full-time employees who have a working knowledge of IDOT documentation procedures for the inspection of work and a current certificate for the successful completion of the IDOT Construction Documentation of Contract Quantities. A current IDOT Construction Documentation of Contract Quantities certificate must be included.

c. Design

(1) Airport Design (Plans and Specifications) - airfield pavements and simple electrical.
(2) Previous relevant air-side design work on Airports within the last ten (10) years from date of submittal is required for a prequalification rating in this category.
(3) Per department Policy, a minimum requirement of one full-time employee with current training in “Fundamentals of Storm Water Pollution and Erosion and Sediment Control” and “Erosion and Sediment Control for Designers” classes. The currently trained individual(s) will be required to sign off on all plans with a Storm Water Pollution Prevention Plan (SWPPP). A current certification indicating evidence of successful completion of each course will be required to be submitted.
(4) Minimum personnel requirements are one (1) Illinois Licensed Professional Engineer experienced in airfield pavement design or simple airfield electrical design.

d. Design: Complex Electrical

(1) Airport Electrical Design (Plans and Specifications) – specialized NAVAIDs, vault work, complex electrical systems (as determined by the Division of Aeronautics).
(2) Previous relevant air-side electrical design work on Airports within the last ten (10) years from date of submittal is required for a prequalification rating in this category.
(3) Minimum personnel requirements are one (1) Illinois Licensed Professional Engineer specializing in Electrical Engineering with experienced in airport complex electrical design work.

e. Master Planning/Airport Layout Plans (ALP)

(1) Master Planning – complete work done in accordance with current FAA Advisory Circulars, including complete Airport Layout Plans, forecasting, and required GIS survey work.
(2) Previous relevant airport work within the last ten (10) years from date of submittal is required for a prequalification rating in this category.
(3) Indicate personnel directly responsible for completion of planning work.

Local airport sponsors (airport authorities, counties, municipalities, etc.), in cooperation with the Division of Aeronautics, perform selection and assignment of consultants for airport work.

2. Highways

a. Roads and Streets

Roads and Streets consists of the Phase II engineering services necessary for and **the preparation of plans, special provisions and estimate of cost for arterial and collector and local roads and streets.** Previous experience in the design of "Roads and Streets" or related experiences such as the design of city streets or subdivision drives, etc. is a required for prequalification in this category.

The following experience will **NOT** be considered:

- Bike paths, sidewalks, ADA ramps, street-landscaping, entrances, and parking lots.
- Plan preparation of signage, Maintenance of Traffic Control, and Traffic Control Plans.
- Phase I & Phase III projects.

Minimum personnel requirements are one (1) full-time Illinois Licensed Professional Engineer with demonstrated experience in the design of arterials, collectors, and local roads and streets and experienced support staff.

b. Freeways

Freeways consist of the Phase II engineering services necessary for and **the preparation of plans, special provisions, and estimate of cost for controlled access highways. The entire range of expertise necessary to design a controlled access highway is required.** Previous experience in the design of controlled access highways or satisfactory work in the design of "Roads and Streets" including complex geometric design details is required for a prequalification rating in this category.

The following experience will **NOT** be considered:

- Typical intersection improvement designs are not considered complex.
- Plan preparation of signage, Maintenance of Traffic Control, and Traffic Control Plans.
- Phase I & III projects.

Minimum personnel requirements are **two (2)** full-time Illinois Licensed Professional Engineer with demonstrated experience in the design of controlled access highways and experienced support staff with expertise in the complex geometric design.

3. Structures

Structures consist of engineering services required for the estimate of cost, planning, design, and preparation of plans and special provisions for bridges and structures. The firm must demonstrate staff experience in directly completing these functions for the requested category in order to become prequalified. Following are general descriptions of each structural category and the minimum requirements to prequalify in each.

a. Highway

i. Simple

Description: Multiple cell box culverts, single span bridges, deck beam bridges, deck scarification with overlay and minor repairs on continuous span structures.

The minimum requirements for prequalification in this category are:

(1) An Illinois Licensed Structural Engineer with experience at the simple level
(2) A support staff of one (1) or more engineers with a degree in civil engineering and structural design experience

ii. Typical

Description: Basic single-unit continuous multiple span bridges classified as seismically “regular”* regardless of seismic zone and basic retaining walls.

The minimum requirements for prequalification in this category are:

(1) An Illinois Licensed Structural Engineer with experience at the typical level.
(2) A support staff of engineers with degrees in civil engineering and bridge design experience.
(3) Adequate computer support equipment and software.
(4) Firms qualifying for this category will be required to have staff experience in successfully completing the planning, design, and contract plan development for a minimum of three bridge structures listed in this category; new continuous multi-span structure designs of various types are preferred.

iii. Advanced Typical

Description: Basic curved or flared bridges regardless of seismic zone, tall retaining walls requiring advanced analysis and non-standard support requirements and seismically "irregular" ***** structures which are otherwise structurally "typical".

The minimum requirements for prequalification in this category are:

(1) Two (2) Illinois Licensed Structural Engineers; one (1) SE with experience at the Advanced Typical level and the other SE with experience at the Typical level or higher.
(2) A support staff of engineers with degrees in civil engineering and design experience at the typical level.
(3) Adequate computer support equipment and software.
(4) Firms qualifying for this category will be required to have staff experience in successfully completing the planning, design and contract plan development for structures in at least three of the following categories: curved steel girder structures, flared girder bridges, "irregular" continuous multiple span bridges requiring multi-mode analysis, tall or unusual retaining walls requiring advanced analysis and non-standard support requirements, spandrel bridges, truss bridges with spans over 100 feet and other bridge types with spans over 200 feet. In addition, experience with repair projects of complex structures involving significant plan preparation and detailing, preparation of documents for non-standard structural temporary works or means and methods of construction, structural policy development, plan review oversight, and forensic engineering may be substituted for one of the three structure types listed above.
(5) In addition to (4), firms will be required to demonstrate through either experience, training or education, the ability to perform a multi-mode seismic analysis.

* *See the IDOT Bridge Manual section 3.15.3.2 "Seismic Design – Range of Applicability" for definitions of seismically "regular" and "irregular" bridges.*

iv. Complex

Description: Regardless of seismic zone: complex curved girders, concrete and steel box girders, bridges, or walls that require unique foundation treatment, expressway bridges with complex framing plans due to geometry requirements such as on/off ramps and the minor rehabilitation or repair of main structural components on major bridges.

The minimum requirements for prequalification in this category are:

(1) Three (3) Illinois Licensed Structural Engineers with at least one SE at the complex level and the other two SE's at least at the Advanced Typical level.
(2) An adequate support staff of engineers with degrees in civil engineering and design experience at the typical level.
(3) Adequate computer support equipment and software.

Firms qualifying for this category will be required to have broad staff experience in successfully completing the design and contract plan development for three of the bridge structure types listed in this category.

b. Major River Bridges

Description: The design, major rehabilitation, or forensic investigation of long span structures. Typically, these structures are founded in deep moving water, have spans greater than 350', which require sophisticated analysis and design and knowledge of specialized construction techniques. Superstructure types include steel plate girder, steel box girder and orthotropic, tied arch, concrete box girder, suspension, continuous/cantilever truss, and cable stay girders.

The minimum requirements for prequalification in this category are:

(1) Prequalification in the Structures (Highway: Complex) Category.
(2) An Illinois Licensed Structural Engineer with "major bridge" experience and an adequate support staff of engineers with civil engineering degrees and "major bridge" experience in the structure type specified.
(3) Adequate computer support equipment and software.

c. Movable

Description: Bascule, swing and lift type bridges.

The minimum requirements for prequalification in this category are:

(1) An Illinois Licensed Structural Engineer with movable bridge experience.
(2) A support staff of engineers with movable bridge experience.
(3) Adequate computer support equipment and software.
(4) Firms qualifying for this category will be required to have staff experience in successfully completing the design and contract plan development for three bridges listed in this category.

d. Painting Inspections

Description: supervision, inspection, and documentation of painting contracts and other coatings-related expertise

The minimum requirements for prequalification in this category are:

(1) Five (5) years of experience in construction management and inspection services during surface preparation and coating application.
(2) Three (3) years of experience in environmental and worker monitoring on industrial lead paint removal projects.
(3) Two (2) inspectors with one of the following certifications: NACE Coating Inspector Program-Level 3 or AMPP Senior Certified Coatings Inspector.
(4) One (1) documentation technician, in possession of a current IDOT Construction Documentation certification.

(5) The use of a laboratory accredited by the American Industrial Hygiene Association (AIHA) for the analysis of metals for all worker exposure filter analyses including PM-10 and TSP-lead filters.
(6) Must have access to a fully equipped analytical and physical testing laboratory to support technical and field personnel, as well as associated coatings and monitoring instrumentation necessary to support multiple field projects.
(7) Documented and acceptable quality control procedures.
(8) All the necessary equipment to provide or accomplish the above-mentioned tasks.

e. Railroad

Description: Temporary or permanent bridges carrying railroad traffic.
The minimum requirements for prequalification in this category are:

(1) An Illinois Licensed Structural Engineer with railroad bridge experience and a support staff of engineers with civil engineering degrees.
(2) Or an Illinois Licensed Structural Engineer with highway bridge experience at the “typical” level and a support staff of licensed professional civil engineers with railroad bridge experience.
(3) Firms qualifying for this category will be required to have staff experience in successfully completing the design and contract plan development for three bridges listed in this category.

f. Steel Fabrication Inspections

Description: supervision, inspection, and documentation of steel and aluminum fabrication

The minimum requirements for prequalification in this category are:

(1) Five (5) years of experience performing steel/aluminum fabrication inspection for quality assurance.
(2) Designated Inspection Manager qualified to perform all tasks that are assigned to QA inspectors.
(3) Two (2) AWS Certified Weld Inspectors.
(4) One (1) staff with Ultrasonic Testing Level II certification per American Society for Nondestructive Testing.
(5) Documented and acceptable quality control procedures.
(6) All the necessary equipment to provide or accomplish the above-mentioned tasks.

g. Underwater Diving Inspections

Description: Underwater diving inspection of bridges, according to the National Bridge Inspection Standards.

The minimum requirements for prequalification in this category are:
(1) Four (4) years of experience in underwater diving inspection of bridges

(2) One (1) Illinois Licensed Structural Engineer who is also an Illinois Certified NBIS Program Manager
(3) Two (2) inspectors with the following: Illinois Certified NBIS Program Manager or Team Leader, Association of Diving Contractors certified, successfully completed NHI 130091 Underwater Bridge Inspection.

D. SPECIAL PLANS

1. Lighting

This work consists of engineering services required for the design of roadway lighting in accordance with the department's lighting policies and procedures as prescribed in Chapter 56 of the Bureau of Design and Environment Manual plus estimate of cost, planning, circuit design, and preparation of plans and special provisions for roadway lighting. The firm must have individual(s) with a minimum of five (5) years of experience in directly completing projects in the categories listed below within the last ten (10) years and have a thorough knowledge of the department's lighting policies and procedures to become prequalified. The following are general descriptions of each lighting category and the minimum requirement for prequalification in each.

a. Typical

The firm's staff shall demonstrate experience designing lighting systems in the lighting project types of: Urban Arterial, Streetscape, Roundabout, Underpass, and Partial Interchange.

The minimum requirements for prequalification in Typical are:

(1) An individual who is an Illinois Professional Engineer having a minimum of five years of experience designing lighting projects in the Typical category within the last ten (10) years. This individual shall be personally involved and directly responsible for the lighting system designs including photometric analysis, design calculations, and final plan review. Additionally, it is recommended that this individual have a degree in Electrical Engineering from an accredited university, and lighting certified by the National Council on Qualification for Lighting Professions (NCQLP).
(2) A support staff of engineers and designers having lighting design experience in the Typical category. At a minimum, the support staff shall include an Illinois Professional Engineer, or an Electrical Engineer having a degree from an accredited university, or a lighting designer having extensive experience designing projects in the Typical category.
(3) Adequate computer support equipment and AGi32 lighting design software.
(4) Experience designing projects in at least three of the five lighting project types in the Typical category in the last ten (10) years.

b. Complex

The firm's staff shall demonstrate experience designing lighting systems in the lighting project types of: Continuous Freeway, Complete Interchange, Major Urban Arterial, Tunnel, and Major River Bridge. For this level, a Major River Bridge shall span a large, navigable river requiring roadway luminaires for vehicular travel, waterway obstruction luminaires, and when required, aviation obstruction luminaires.

The minimum requirements for prequalification in Complex are:

(1) An individual who is an Illinois Professional Engineer having a minimum of five (5) years of experience designing lighting projects in the Complex category within the last ten (10) years. This individual shall be personally involved and directly responsible for the lighting system designs including photometric analysis, design calculations, and final plan review and have experience performing QC/QA for the same. Additionally, it is recommended that this individual have a degree in Electrical Engineering from an accredited university, and lighting certified by NCQLP.
(2) A support staff of engineers and designers having experience in both the Typical and Complex categories. At a minimum the support staff shall include an Illinois Professional Engineer or an Electrical Engineer with a degree from an accredited university. This individual shall have experience designing projects in the Complex category and performing QC/QA for the same.
(3) Adequate computer support equipment and AGi32 lighting design software.
(4) The firm shall be prequalified in the Typical category and the firm's staff shall have experience designing projects in at least three of the five projects in the Complex category in the last ten (10) years.

2. Pumping Stations

Pumping Stations consists of the Phase II engineering services required for and the preparation of plans, special provisions, and estimate of cost of pumping stations including pumps, motors, controls, and buildings located on/or around transportation right-of-way. **Firm must also be prequalified in the Electrical Engineering and Mechanical Engineering categories to obtain prequalification in this category.**

The following experience will **NOT** be considered:

- Water Treatment Facilities
- Pumping Stations/Lift Stations that are not directly related to transportation right-of-way.

Minimum personnel requirements are:

- One (1) full-time Illinois Licensed Professional/Structural Engineer with demonstrated experience in the design of Pumping Stations with expertise in hydrology, hydraulics, Phase II electrical engineering design, and Phase II mechanical engineering design.
- One (1) full-time Illinois Licensed Architect with demonstrated experience in the design and preparation of plans, special provisions, and estimates of cost for transportation related buildings.
- Experienced support staff.

3. Traffic Signals

This work consists of engineering services necessary for the design of traffic signal systems, including preparation of plans, special provisions, and cost estimates. Previous experience in the design of traffic signals is required for a prequalification rating in this category.

Minimum personnel required is one (1) Illinois Licensed Professional Engineer who understands the state-of-the-art of modern traffic signal systems, including knowledge of traffic signal hardware, traffic control equipment, vehicle detectors, traffic signal control strategy, communication equipment, traffic signals interconnection, and the central signal system communication. Consultant statements should provide some indication as to the complexity of the firm's traffic signal or design experience.

E. SPECIAL STUDIES

This work consists of comprehensive studies of all factors and an evaluation of alternatives for the following:

1. Feasibility

Feasibility Studies identify whether or not a proposal is worthy of additional detailed engineering studies. These studies include a general engineering study with an overview of potential environmental impacts. Projects must be transportation related. Value Engineering and estimates of cost for projects are not considered a feasibility study.

The minimum requirements for prequalification in this category are one (1) full-time Illinois Licensed Professional Engineer with demonstrated experience in conducting Feasibility Studies and support staff.

2. Location Drainage

The scope of work includes hydrologic/hydraulic analyses for highway (roadway) drainage facilities. This work consists of the design of roadside ditches, smaller culverts, storm drains, inlet spacing, and storage pipes with restrictors. The design of storm drains includes hydraulic grade line analysis and inlet spacing. Detention basin design and energy dissipation design can also be included in project scope. Drainage facility design experience within a highway improvement setting is preferred, as opposed to property or site development projects.

The minimum requirements for prequalification in this category are:

a) One (1) full-time Illinois Licensed Professional Engineer with a minimum of five (5) years of hydrologic and hydraulic computer modeling experience including:
   - Thorough knowledge of the department drainage policies and procedures;
   - Familiarity with the applicable permit rules of IDNR-OWR (Office of Water Resources) and other regulatory agencies; and
   - Knowledge of common Illinois drainage laws.

b) One (1) full-time staff engineer with a minimum of three (3) years of hydrologic and hydraulic computer modeling experience.

c) Adequate support staff of two (2) or more full-time engineers, in addition to Section E.2.b. above, with experience in highway hydraulics and hydrology are needed to accomplish the scope of work.

d) Drainage knowledge and/or experience which can be demonstrated by prior satisfactory work performance or one or more engineering staff members who have completed training in NHI (National Highway Institute) or equivalent hydraulic courses in the following topics: highway hydrology, open channel flow, culvert hydraulics, storage routing/detention basin design, inlet spacing, and storm drain design.

e) Adequate computer support equipment and software to design and draft highway drainage facilities.

3. Pavement Analysis and Evaluation

Pavement analysis and evaluation consist of engineering services required to design, analyze, and evaluate pavement surface characteristics and structures. This includes pavement design, pavement distress surveys, non-destructive testing, destructive testing, and performance modeling.

a) Pavement Design
- IDOT's Mechanistic-Empirical Design Procedures
- AASHTO Pavement M-E Design Procedures

b) Pavement Evaluation
- International Roughness Index Data Collection and Analysis
- Falling Weight Deflectometer Data Collection and Analysis
- Locked-Wheel Skid Testing Data Collection and Analysis
- Condition Rating Survey
- Long-Term Pavement Performance Program (LTPP) Distress Survey
- IDOT Bureau of Materials and Physical Research Distress Survey
- Pavement core analysis [layer interface identification, visual observations (cracking, stripping), interpretation of laboratory core test results]

The minimum requirements for prequalification in this category are one (1) full-time Illinois Licensed Professional Engineer with demonstrated pavement design and pavement evaluation work experience and support staff. The prequalified firm will demonstrate a minimum of one (1) pavement design project and two (2) pavement evaluation projects.

4. Safety

Safety Studies consists of Phase I studies that include a thorough analysis and evaluation of the cause(s) of accidents and a recommendation of appropriate/effective countermeasures to eliminate them or reduce their frequency and severity.

The minimum requirements for prequalification in this category are one (1) full-time Illinois Licensed Professional Engineer with demonstrated experience in conducting Safety Studies, and experienced support staff.

5. Signal Coordination & Timing (SCAT)

These studies include traffic data analysis and running and interpreting computer programs for determining optimum traffic signal timing to optimize traffic flow on arterial and street networks.

The minimum requirements for prequalification in this category are:

a) One (1) full-time Illinois Licensed Professional Engineer with demonstrated SCAT work experience,
b) Electronic submittal of one SCAT report.
c) Adequate support equipment and software, and
d) Support staff.

SCAT work experience must include an understanding of traffic signal systems - hardware, control strategies and communications, experience with capacity and signal optimization software programs, and experience in traffic signal controller operation (including the ability to implement timings into controllers).

6. Traffic Studies

Traffic Studies consist of engineering services required to monitor and analyze the characteristics of motor vehicle or pedestrian traffic on and near roadways. This includes a wide variety of studies including, but is not limited to, the following:

a) Traffic impact studies,
b) On-site traffic circulation plans,
c) Motor vehicle classification counts/studies,
d) Speed studies,
e) Traffic performance measures,
f) MUTCD warrant studies,
g) Signal timing plans,
h) Signalization in conjunction with intersection design studies and accident studies,
i) Human behavior/reaction studies,
j) Vehicle emissions and fuel consumption studies, and
k) Benefit-cost analyses of proposed signal improvements.

Note: Vehicle and pedestrian counts are considered part of data collection and do not include analysis or computations. Simply having performed **traffic counts WILL NOT** qualify a firm in Traffic Studies.

The minimum requirements for prequalification in this category are one (1) full-time Illinois Licensed Professional Engineer with demonstrated traffic study work experience and support staff.

F. LOCATION DESIGN STUDIES

Location Design Studies are Phase I Studies that involve the development, evaluation, and documentation of engineering alternatives, which when combined with the Environmental Report will result in the selection of the alignment and design features with the best combination of social, economic, environmental, and engineering effects. The Location Design and Environmental Reports must be developed simultaneously to assure proper cross-coordination of findings and objectives. Each Location Design Report must describe the alternates considered and the reasons for selecting the recommended alternate. The description should include essential elements such as appropriate design standards, traffic volumes, typical cross-section, access control features, vertical and horizontal alignment, right-of-way requirements, intersection designs, general structure requirements, and an estimate of cost. The report must include appropriate maps and drawings, a list of policy exceptions (and supporting reasons), a summary of views received from coordination and public involvement, and a description of the proposal's effects on adjacent roads and streets. The sub-categories listed below represent three different levels of complexity for Location Design Studies.

1. Rehabilitation

Prequalification in this category requires experience involved with the development and evaluation of alternatives appropriate for the rehabilitation of existing highways. It will include more than minor work such as geometric changes, bridge improvements, pavement rehabilitation, safety investigations, drainage analysis, and establishment of safety clear zones. It may include minor right-of-way acquisition throughout the project length.

Minimum personnel requirements are one (1) full-time Illinois Licensed Professional Engineer with demonstrated experience in conducting Phase I – Rehabilitation projects and experienced support staff with expertise in geometric design, drainage, and public involvement.

2. Reconstruction/Major Rehabilitation

Prequalification in this category requires experience involved with the development and evaluation of alternatives appropriate for reconstruction or a major rehabilitation of an existing highway. A project will basically follow the existing alignment but may replace more than 50% of the existing pavement due to adjustments in horizontal or vertical alignment. It may include significant geometric changes, additional through lanes, bridge improvements or replacement, major intersection/interchange design, drainage analysis, and safety investigation. Public involvement will also be an integral part of the project. Significant amounts of additional right-of-way may be required.

Minimum personnel requirements are one (1) full-time Illinois Licensed Professional Engineer with demonstrated experience in conducting Phase I - Reconstruction and Major Rehabilitation projects and experienced support staff with expertise in geometrics, hydraulics, public involvement, and report writing. The project manager must have an Illinois Professional Engineer's license and prior managerial experience with two (2) or more rehabilitation projects or one (1) Reconstruction/Major Rehabilitation project.

3. New Construction/Major Reconstruction

Prequalification in this category requires experience involved the development and evaluation of alternatives appropriate for a new highway on new location and/or major reconstruction of an existing highway for which one alternate may be a totally new location. The entire range of expertise necessary to totally develop and design a new highway is required. This will include establishment of horizontal and vertical alignment, intersection/interchange design, and development of a drainage plan including sizing structures. Other related expertise will be required including field surveying, public relations, estimating, earthwork calculations, and traffic capacity analysis. All new or significant amounts of additional right-of-way will be required throughout the project.

Minimum personnel requirements are **two (2)** full-time Illinois Licensed Professional Engineers with demonstrated experience in conducting Phase I – New Construction and Major Reconstruction projects with expertise in geometrics, hydraulics, estimating, traffic analysis, public involvement, and report writing. The project manager must be an Illinois Licensed Professional Engineer and have prior managerial experience with two (2) or more Reconstruction/Major Rehabilitation projects or one (1) New Construction/Major Reconstruction project.

G. HYDRAULIC REPORTS

1. Pump Stations

The scope of work includes hydrologic/hydraulic analysis for a highway storm water pump station as described in the IDOT Drainage Manual. The work includes developing an inflow hydrograph to the station in conjunction with stage\storage and stage outflow data to route the design event through the pump station for existing and proposed conditions. The project typically includes assessing the existing storm drain collection system, hydraulic grade line and design\analysis needed to upgrade the system to acceptable IDOT policy standards. Head losses, reservoir\storage routing, inlet spacing, weir\orifice pipe flow and energy grade line determinations are typically involved. The questionnaire should demonstrate some experience and familiarity with the hydraulic design of highway storm water pumping stations in an urban setting.

The consultant must be able to utilize Illinois State Water Survey (ISWS) Bulletin 75 rainfall data for the purposes of performing critical storm duration analysis and reservoir \ storage routing analyses. The consultant must implement hydrologic models such as HEC-HMS or TR-20 to develop inflow hydrographs. Experience with a version of SWMM modeling package is desirable.

The minimum requirements for prequalification in this category are:

(1) One (1) full-time Illinois Licensed Professional Engineer with a minimum of five (5) years hydrologic and hydraulic computer modeling experience, including:
   a) Thorough knowledge of IDOT drainage policies and procedures contained primarily within the IDOT Drainage Manual.
   b) Knowledge of common Illinois drainage laws.
(2) At least one (1) full-time staff engineer with a minimum of three (3) years of hydrologic computer modeling experience.
(3) Adequate support staff of two (2) or more full-time engineers, in addition to Section G.1.(2) above, with experience in highway hydraulics and hydrology are needed to accomplish the scope of work.
(4) Hydraulic knowledge and/or experience which can be demonstrated by prior satisfactory work performance or one or more engineering staff members who have completed training in NHI (National Highway Institute) or equivalent hydrology\hydraulic courses in the following topics: urban hydrology (including HEC-1, HEC-HMS and TR-20), storage routing/detention basin design, inlet spacing and storm drain design, and pump station design.
(5) Adequate computer support equipment and software including, but not limited to, HEC-HMS and TR-20.

2. Waterways

a. <u>Typical</u>

The scope of work includes hydrologic and hydraulic analysis and modeling for culverts and bridges. Hydraulic modeling includes these flow conditions; multiple openings\ encroachments within a shared or adjacent floodplain, pressure flow and roadway overtopping. Design considerations include scour

evaluations (bridges) and outlet protection (culverts). Sediment transport and stream stability design are also potential design elements.

The consultant must be able to implement hydrologic techniques including USGS regression equations, stream gage weighting analysis, and applying StreamStats.

The minimum requirements for prequalification in this category are:

(1) One (1) full-time Illinois Licensed Professional Engineer with a minimum of five (5) years of hydrologic and hydraulic computer modeling experience, including:
   a) Thorough knowledge of IDOT drainage policies and procedures contained primarily within the IDOT Drainage Manual;
   b) Familiarity with the applicable permit rules of IDNR- OWR (Office of Water Resources) and other involved regulatory agencies; and
   c) Knowledge of common Illinois drainage laws.

(2) At least one (1) full-time staff engineer with a minimum of three (3) years hydraulic computer modeling experience.

(3) Adequate support staff of two (2) or more full-time engineers, in addition to Section G.2.a.(2), with experience in highway and structure hydraulics and hydrology are needed to accomplish the scope of work.

(4) Hydraulic knowledge and/or experience which can be demonstrated by prior satisfactory work performance, or one or more engineering staff members who have completed training in NHI (National Highway Institute) or equivalent hydraulic courses in the following topics: highway hydrology, culvert design, stream stability and scour at highway bridges, and HEC-RAS.

(5) Adequate computer support equipment and software including, but not limited to, HEC-RAS.

b. <u>Complex</u>

Complex culverts and bridges include the items in the scope of work for G.2.a. Typical, as well as the application of hydrologic modeling tools such as HEC-HMS and TR-20. For those models, the consultant must also be able to utilize Illinois State Water Survey (ISWS) Bulletin 75 rainfall data for the purposes of performing critical storm duration analysis and reservoir/storage routing analyses.

Hydraulic modeling experience that includes complex floodplain geometry, urbanized settings with sensitive flood receptors, and floodplain management studies such as FEMA revisions, flood optimization studies, and dynamic floodplain modeling such as by using; SRH-2D, HEC-RAS, or FEQ is desirable. Bridge and culvert modeling experience utilizing SRH-2D is also desirable. The specialty questionnaire should clearly demonstrate a level of project complexity within the firm’s experience.

In addition to the minimum requirements above in Section G.2.a., the consultant must have the computer support equipment to implement the hydrologic techniques of HEC-HMS and TR-20. There should be at least one

staff member who has completed NHI training (or equivalent) in HEC-HMS and TR-20.

c. Two-Dimensional Hydraulics (2D)

The scope of work includes hydrologic and hydraulic analysis and modeling for culverts and bridges. Examples of hydraulic modeling include, but are not limited to, bridges and piers skewed to flow, severe stream meanders, multiple openings\encroachments within a shared or adjacent floodplain, pressure flow, and roadway overtopping. Design considerations include scour evaluations (bridges) and outlet protection (culverts).

The consultant must be able to implement hydrologic techniques including USGS regression equations and stream gage weighting analysis. In addition to the minimum requirements above in Section G.2.a., the consultant must have:

(1) Adequate computer support equipment and software including, but not limited to; HEC-RAS, SMS, and SRH2D.
(2) A minimum of two (2) full-time engineers of the four (4) required, must have completed the following courses:
    a) NHI 135095 Two-Dimensional Hydraulic Modeling of Rivers at Highway Encroachments or 135095V Two-Dimensional Hydraulic Modeling of Rivers at Highway Encroachments (VIRTUAL DELIVERY)
    b) NHI 135095A SRH-2D Model Data files, Diagnostics & Verifying 2D Model Results WCT
    c) NHI 135095B Model Terrain Development with Various Data Sources WCT

H. GEOTECHNICAL SERVICES

1. General Geotechnical Services

General Geotechnical Services consists of engineering services for geotechnical work typically pertaining to roadway widening or new alignments, pavements, earthwork, rock cuts, small culverts, small retaining walls, or other structures not requiring a Structure Geotechnical Report. This work generally includes coordination with the district and/or prime consultant, project/site reconnaissance, coordinating subsurface explorations and laboratory testing, geotechnical analyses, formulating recommendations, and preparing roadway or other geotechnical reports.

Minimum personnel requirements are one (1) full-time Illinois Licensed Professional Engineer as the Geotechnical Lead and support staff. The Geotechnical Lead shall have demonstrated experience in projects dealing with geotechnical issues on roadway transportation projects described above. This individual must be familiar with IDOT's Geotechnical Manual, Subgrade Stability Manual, IDOT acceptable practices for subsurface treatments, and shall have prepared at least three geotechnical reports for federal, state, or local transportation projects. These projects must demonstrate sound experience regarding evaluations and recommendations for geotechnical aspects of transportation such as subgrade treatments, embankments, slope stability, settlement, subsurface ground improvement, foundation design parameters, construction concerns, and feasibility of roadway alignment.

The firm is expected to employ sufficient geotechnical support staff, who may be engineers, geologists, or technicians, to assist the Geotechnical Lead on office and field work involved in developing and providing the project deliverables. It is expected that the firm will provide the project experience and specific geotechnical work completed by the individual Geotechnical Lead(s) and geotechnical staff. It is not required; however, it is desirable that the firm have geotechnical project experience beyond the projects listed under individual staff experience.

Examples of such projects could include projects, which used staff no longer with the firm, or have moved into upper management or other positions. Including such projects in the firm experience demonstrates a history of providing similar geotechnical services to clients.

The firm shall also have sufficient facilities, equipment, and software to perform this work.

2. Complex Geotechnical/Major Foundations

This work consists of engineering services utilizing advanced subsurface exploration and testing techniques, conducting complex subsurface/foundation modeling, performing advanced geotechnical/foundation analyses, evaluation, or design, preparing geotechnical reports for large transportation projects or major river bridges, and providing a sound and seasoned opinion and recommendations on unusual geotechnical or foundation issues. The ability to solve complex geotechnical/major foundation issues by the firm's in-house staff must be

demonstrated in the following areas and require advanced analytical methods, studies, or innovative solutions:

a) various difficult subsurface conditions;
b) failure analyses and repairs;
c) forensic studies;
d) state-of-the-art;
   (1) exploration and testing methods,
   (2) construction methods,
   (3) soil and foundation modeling,
e) tunnels in difficult subsurface soil and rock conditions; and
f) specialized ground modification and improvement techniques.

The firm shall also demonstrate that they meet the requirements for General Geotechnical Services and Structure Geotechnical Reports above, as well as satisfy the following minimum requirements:

a) The firm shall employ Geotechnical Leads with over 20 years of collective experience at the complex level. At least two of these employees shall be Geotechnical Leads who are full-time Illinois Licensed Professional Engineers with a minimum of ten (10) years of experience at the complex level.
b) The firm shall provide demonstrated experience with a minimum of three (3) complex and premier projects that involved any of the complex issues described above and required innovative technologies/solutions.
c) The firm shall have adequate support staff of engineers and other applicable professionals with experience in computer modeling, structure support, instrumentation equipment and software. The firm shall also have sufficient facilities, equipment, and software to perform this work.
d) Firms are not specifically required to have experience outside the state of Illinois to become prequalified. However, firm experience outside the state is advantageous.

3. Structure Geotechnical Reports (SGR)

This work consists of engineering services for developing geotechnical design parameters and recommendations for roadway transportation structures requiring a Structure Geotechnical Report. This generally includes coordination with the district and/or prime consultant, project/site reconnaissance, coordinating subsurface explorations and laboratory testing, performing analyses, formulating recommendations, and report preparation. Geotechnical recommendations for this work are typically developed for the design of structure foundations, bridge cone embankment, earth retention systems, noise abatement wall foundations, box culverts, and three-sided structures.

Minimum personnel requirements are one (1) full-time Illinois Licensed Professional Engineer or Structural Engineer as the Geotechnical Lead and support staff. The Geotechnical Lead must have demonstrated experience in geotechnical/ foundations engineering, be familiar with the most current IDOT Bridge Manual, Geotechnical Manual, IDOT's geotechnical policies, and shall have prepared at least three SGRs or similar foundation reports for federal, state, or local transportation projects. These projects must demonstrate sound experience regarding evaluations and recommendations for geotechnical aspects of transportation structures such as

foundation options, geotechnical and foundation design parameters, subsurface ground improvement, and construction issues.

The firm is expected to employ sufficient geotechnical support staff, who may be engineers, geologists, or technicians, to assist the Geotechnical Lead on office and field work involved in developing and providing the project deliverables. It is expected that the firm will provide the project experience and specific geotechnical work completed by the individual Geotechnical Lead(s) and geotechnical staff. It is not required; however, it is desirable that the firm have geotechnical project experience beyond the projects listed under individual staff experience.

Examples of such projects could include projects which used staff no longer with the firm or have moved into upper management or other positions. Including such projects in the firm experience demonstrates a history of providing similar geotechnical services to clients.

The firm shall also have sufficient facilities, equipment, and software to perform this work.

4. Subsurface Explorations

Subsurface Explorations consists of engineering services necessary for obtaining subsurface geotechnical data to be utilized in geotechnical analyses and development of geotechnical reports. This typically includes coordination with the Geotechnical Engineer responsible for the geotechnical report or design, assisting in initial site/project reconnaissance, assisting in development of subsurface exploration plans, conducting subsurface explorations, laboratory testing of soil and rock, and reporting of the field explorations and laboratory test results.

Minimum personnel requirements are one (1) Geotechnical Lead, one (1) Field Drilling Supervisor, one (1) Laboratory Supervisor, and support staff.

- The Geotechnical Lead shall be a full-time Illinois Licensed Professional Engineer with a minimum of five years of demonstrated experience in managing the efforts of staff and subcontractors, ensuring accuracy of geotechnical data, timely completion of services, performing the appropriate analysis, necessary interpretation and validation of soil and rock testing data, and determining the engineering properties of various subsurface materials using sound soil/rock mechanics. The firm's Geotechnical Lead shall also be familiar with IDOT's exploration and testing requirements, as set-forth in IDOT's Geotechnical Manual.
- The Field Drilling Supervisor must have a geology or geotechnical background and a minimum of three (3) years of relevant experience in subsurface explorations/operations including split-spoon sampling, Standard Penetration and Rimac testing, Shelby tube soil sampling, rock coring, sample transportation, as well as soils and rock identification. The Field Drilling Supervisor is responsible for on-site drilling operations, describing/logging the soil/rock encountered, overseeing field testing, and coordinating with the firm's Geotechnical Lead.

The Field Drilling Supervisor and the Laboratory Supervisor may be the Geotechnical Lead if that individual meets the background and experience requirements.

- The Laboratory Supervisor shall have a minimum of three years of experience in geotechnical laboratory testing procedures.

The firm is expected to employ sufficient geotechnical support staff, who may be engineers, geologists, or technicians, to assist the Geotechnical Lead on office and field work involved in developing and providing the project deliverables. It is expected that the firm will provide the project experience and specific geotechnical work completed by the individual Geotechnical Lead(s), Field Drilling Supervisor, Laboratory Supervisor, and geotechnical staff.

The firm shall demonstrate knowledge in subsurface investigations, drilling, sampling, and testing conducted according to AASHTO/equivalent ASTM standard methods, or Illinois modified procedures as set-forth in IDOT's Geotechnical Manual and the Manual of Test Procedures for Materials.

The firm shall have sufficient facilities, equipment, and software to perform this work. If the firm is not also prequalified in at least one (1) of the **General Geotechnical Services, Structure Geotechnical Reports (SGR)** or **Complex Geotechnical/Major Foundations** categories, then the firm shall own at least one (1) of the following: 1) its own laboratory or 2) drilling equipment. Laboratory and drilling equipment shall meet the requirements in the following paragraphs.

The firm must own or subcontract the necessary soils and rock sampling equipment as well as sufficient support equipment to conduct subsurface drilling and obtain either split-spoon or Shelby tube samples. Drill rig(s) must be equipped with an automatic SPT hammer, which has been energy tested (ASTM D 4633) within the past five years, and the firm must provide documentation of the tested hammer energy and date for each drill rig. It is desirable for the firm to have additional geotechnical field testing capabilities beyond the routine exploration equipment, such as pressure meters, vane shear, cone penetrometer testing (CPT) rigs, geophysical, and others.

The firm shall either own its own laboratory or subcontract with an independent testing facility with lab personnel proficient in the portions of the IDOT Geotechnical Manual dealing with laboratory testing. The firm's main/satellite or subcontractor's laboratory must have recent inspection results from AASHTO resource [formerly known as AASHTO Materials Reference Laboratory (AMRL)], for AASHTO test standards R 58, T 88, T 89, T 90, T 99, T 180, T 208, T 216, T 265, T 296, and T 297 (as a minimum) indicating compliance.

I. ENVIRONMENTAL REPORTS

Environmental Reports are prepared simultaneously with Location/Design Studies to assure that all environmental and engineering issues are considered in the decision-making process. Environmental Reports include all investigations and studies necessary to identify potential adverse impacts of proposed projects, evaluate their likely significance, and recommend mitigation actions to reduce their severity. Regulations require that an environmental assessment (EA) or environmental impact statement (EIS) be prepared for federally-assisted or regulated projects unless they are categorically excluded. Criteria for prequalification in **EA** and **EIS** are listed below.

1. Environmental Assessment (EA)

This category includes projects anticipated to include one or more of the following environmental issue areas: agricultural lands; wetlands; floodplains; sensitive biological resources (e.g., threatened, or endangered species, nature preserves, or natural areas); cultural resources (archaeological and historical resources or structures); candidate Wild and Scenic Rivers; Section 4(f) lands; or other sensitive environmental resources of public concern. More than one technical environmental study will generally be necessary. The EA is expected to result in a Finding of No Significant Impact (FONSI).

To be prequalified for EA, firms must satisfy all requirements for **Environmental Leads** and **Qualified Environmental Staff**, which include:

a) Employing a full-time **Environmental Lead** (subconsultants are not allowed) who meets the education, training, and experience for EA prequalification; and
b) Designating **Qualified Environmental Staff** for Socio-economics/ Community Impacts, Ecology, Noise, Water, Public Involvement, and Technical Writing.

Environmental Lead
Requirements to be pre-qualified as an Environmental Lead at the EA level are listed in the table below.

Qualified Environmental Staff
Staff or subconsultants who meet the requirements listed in the table below must be designated for each environmental discipline:

- Socio-economics/Community Impacts
- Ecology
- Noise
- Water

Qualified staff also must be assigned for:

- Public Involvement
- Technical Writing

No person may be assigned more than three disciplines. Resumes should reflect specific NEPA project experience and must include certificates of completion for all training classes. **Important Note:** All members of your firm's staff **AND all subconsultants** employed by other firms that you propose to assign for any environmental discipline must FIRST be entered as **"NEW STAFF"** on the

Corporate Profile/Staff screen in EPAS. For each subconsultant, the following employment-related questions on the **Staff Information** screen must be completed EXACTLY AS FOLLOWS: Is full-time? **NO.** Is consultant? **YES.** Next, the **CONSULTING FIRM NAME (the subconsultant's EMPLOYING FIRM)** must be listed **as shown in the EPAS Instruction Manual.** Failure to follow these instructions and enter all subconsultant data correctly in EPAS will result in your submittal being denied.

2. Environmental Impact Statements (EIS)

This category includes major transportation-related developments that will involve a large number of displacements, or substantial disruption to local traffic patterns and result in potentially significant impacts to one or more of the following special environmental issue areas: agricultural lands; wetlands; floodplains; sensitive biological resources (e.g., threatened or endangered species, nature preserves, or natural areas); cultural resources (archaeological and historical resources and historic structures); candidate Wild and Scenic Rivers; Section 4(f) lands; and other sensitive environmental resources of public concern. Technical analyses of environmental studies are likely to be necessary, resulting in the identification of adverse impacts, suitable mitigation measures, and preparation of an EIS.

To be prequalified for EIS, firms must satisfy all requirements for **Environmental Leads** and **Qualified Environmental Staff,** which include:

a) Employing a full-time **Environmental Lead (**subconsultants are not allowed**)** who meets the education, training, and experience for EIS prequalification; and
b) Designating **Qualified Environmental Staff** qualified for (Socio-economics /Community Impacts), Ecology, Noise, Water, Public Involvement, and Technical Writing.

Environmental Leads
Requirements to be prequalified as an Environmental Lead at the EIS level are listed in the table below.

Qualified Environmental Staff
Staff who meet the requirements listed in the table below must be designated for each environmental discipline:

- Community Impacts/Socio-Economic
- Ecology
- Noise
- Water

Qualified staff also must be assigned for:

- Public Involvement
- Technical Writing

No person may be assigned more than three disciplines. For EIS, at least two disciplines must be assigned to qualified in-house staff other than the Environmental Lead. Qualified subconsultants are acceptable for the remaining two disciplines. Since extensive experience is required for EIS prequalification, resumes should reflect specific NEPA project experience and include certificates of completion for all

training classes. **Important Note:** All members of your firm's staff **AND all subconsultants** employed by other firms that you propose to assign for any environmental discipline must FIRST be entered as **"NEW STAFF"** on the **Corporate Profile/Staff screen in EPAS**. For each subconsultant, the following employment-related questions on the **Staff Information** screen must be completed EXACTLY AS FOLLOWS: Is full-time? **NO.** Is consultant? **YES.** Next, the **CONSULTING FIRM NAME (the subconsultant's EMPLOYING FIRM)** must be listed **as shown in the EPAS Instruction Manual.** Failure to follow these instructions and enter all subconsultant data correctly in EPAS will result in your submittal being denied.

Environmental Lead Requirements

Education: Minimum of B.S. in Urban Planning, Land Use Planning, Geography, Environmental Sciences/Studies or allied (natural/physical environmental resources) disciplines, or Engineering.

Required Training Class: NHI course #142005, "NEPA & the Transportation Decision making Process" or comparable ≥ 18-hour course (a syllabus of the comparable course may be required). Certificate of completion must be provided.

Experience: Must include serving as Environmental Lead for required number of completed NEPA documents:

EA: One or more transportation-related EA; two or more transportation-related ECADs*; or one or more transportation-related EIS, or one or more projects that utilized the Illinois NEPA-404 merger process and received concurrence on the preferred alternative.

EIS: Two or more transportation-related EAs; four or more transportation-related ECADs*; or one or more transportation-related EIS, or two or more projects that utilized the Illinois NEPA-404 merger process and received concurrence on the preferred alternative.

The Environmental Lead is the person that managed or oversaw the preparation of the NEPA environmental document (EA, EIS, or ECAD*). **Only one person may receive credit as the Environmental Lead of any NEPA document.** For EAs and ECADs, submit the signed cover page or signed FONSI. For EISs, submit the signed cover page and EIS List of Preparers. For NEPA-404 merger projects submit the first page of the preferred alternative concurrence package.

Notes:

- Subconsultants are not allowed as Environmental Leads.

Environmental Discipline Requirements
a) Socio-economics or Community Impacts: Education: Minimum of B.S. in Economics, Urban, or Land Use Planning, Geography or related degree. Experience shall include community studies (including demographics), regional economics or land use/urban planning. All NEPA experience should be detailed.
b) Ecology: Education: Minimum of B.S. in Biology, Botany, Plant Ecology, Soil Science, Zoology, Wildlife Biology, or allied discipline. Experience shall include knowledge of biological field surveys and wetland delineations. Provide certification of wetland delineation training.
c) Noise: Education: Minimum of B.S. in Acoustical or Civil Engineering, Environmental Sciences/Studies, or allied discipline. Required Training Classes: NHI course #142051, "Highway Traffic Noise" or comparable ≥ 18-hour course (a syllabus of the comparable course may be required); and an FHWA Traffic Noise Model course. Certificates of completion **must** be provided. Experience shall include prediction and/or measurement of highway noise levels, analysis, and/or design of abatement measures, and documentation of analysis results. Specific project experience should be provided.
d) Water: Education: Minimum of B.S. in Aquatic Biology, Biology, Limnology, or allied discipline. Experience shall include knowledge of at least two of the following: 1) fish, 2) mussels, 3) Stochastic Empirical Loading and Dilution Model (SELDM), or 4) aquatic macroinvertebrate populations.
e) Public Involvement and Technical Writing Requirements: Persons assigned for Public Involvement and Technical Writing must have knowledge and experience in these areas. (Refer to Chapter 19 of the Bureau Design and Environment (BDE) Manual for Public Involvement guidelines and duties.) Environmental Leads and/or other experienced staff may be designated to handle Public Involvement and/or Technical Writing.

**IDOT previously used the Environmental Class of Action Document (ECAD) as documentation of environmental impacts to aid in NEPA classification. While the ECAD report is no longer in use, ECADs may be submitted for consideration as Firm or Environmental Lead experience (2 ECADs = 1 EA).*

J. TRANSPORTATION STUDIES

1. Mass Transit

Mass Transit work consists of the planning and design of operating systems for the effective movement of people. This includes sociological studies, corridor and terminal design and vehicle selection. Experience in the design of rail or mass transportation is required for prequalification.

Minimum personnel requirements are one (1) experienced Illinois Licensed Professional Engineer and support staff.

2. Railway Engineering

This consists of the inspection, evaluation, design, and cost/quantity estimation of existing or potential railway track and structures. The firm is required to have experience in the design, construction, and rehabilitation of track for prequalification.

Minimum personnel requirements are one (1) Illinois Licensed Professional Engineer with Class I Railroad carrier engineering experience in design, construction and rehabilitation of mainline railroad track and all necessary support staff.

3. Railway Planning

Railway Planning studies examine trends, forecasts; needs and opportunities of the State's rail system. Work consists of development of rail planning documents, white papers, and studies for freight, intercity passenger, and commuter rail transportation systems, rail system performance, service gaps, improvement needs (including connectivity to other modes), financial issues, and safety and security of rail transportation.

Minimum personnel requirements include a qualified project manager with a minimum of five (5) years of prior managerial experience in rail industry or rail planning and a support staff with analytical experience in rail planning, travel demand modeling, or the rail industry.

K. SPECIAL SERVICES

1. Aerial Mapping/LiDAR

Aerial Mapping/LiDAR consists of acquiring and processing digital aerial imagery suitable for mapping, planning studies, and the development of precise topographic maps and related photogrammetric products, based upon information obtained from the aerial photography and corresponding ground survey control; and/or the obtaining and processing of Light Detection and Ranging (LiDAR) data, collected via aerial acquisition methods and based upon information obtained from the corresponding ground survey control, in order to provide digital elevation data including surface models, terrains, contours, and topographic features.

Minimum requirements are one (1) Illinois Licensed Professional Engineer, one (1) Illinois Professional Land Surveyor, and support staff with training and experience in aerial mapping and/or aerial LiDAR collection and processing.

2. Architecture

This consists of the design and preparation of plans, special provisions, and estimate of cost for the construction of **transportation related buildings, such as bus /train stations, airport terminal, Tollway plaza, etc.**

The following experience will **NOT** be considered:

- Schools, offices, courthouses, maintenance facilities, garages, salt domes, etc.

Minimum personnel requirements are one (1) full-time Illinois Licensed Architect and support staff.

3. Asbestos Abatement Surveys

Services are required to perform asbestos surveys of buildings requiring demolition. This work will include review of existing data, a building survey, asbestos sampling and analysis and preparation of a report summarizing the location and description of the identified asbestos, quantities, and a preliminary estimate of abatement costs.

For a firm to be prequalified in this area of specialization, the following minimum firm experience, staffing requirements, and equipment/support services must be fully met:

a) Minimum firm experience requires the successful completion as the prime consultant of ten (10) or more asbestos abatement surveys in the last ten (10) years.

b) Minimum staff requirements include the following of which one (1) individual must be an Illinois Licensed Professional Engineer and/or Architect:

   (1) Administrative/Managerial Staff - (Responsible for the day-to-day supervision of work assignments, efficient utilization of resources, and client satisfaction).

One (1) or more individuals, each with five or more years of direct experience in conducting Asbestos Abatement Surveys.

(2) Technical/Professional Staff - (Responsible for providing technical direction for the project(s), and effective management of technical support staff, project schedule(s), and budget(s)).

Two (2) or more individuals, each with five (5) or more years of direct experience in Asbestos Abatement Surveys. These individuals must also be licensed by the Illinois Department of Public Health (IDPH).

c) Minimum equipment/support services include in-house capability or established working relationship with a laboratory accredited by the American Industrial Hygiene Association (AIHA) to conduct asbestos analyses.

4. Construction Inspection

Construction Inspection work consists of staking, material testing and inspection, documentation of materials and quantities, record keeping and enforcement of specifications applicable to a contractor's work on construction projects. As a prerequisite for a Construction Inspection prequalification rating, a consultant must have the following:

a) One (1) or more in-house full-time employees who have experience in the position of **Resident Engineer**, or equivalent experience, in construction work under IDOT specifications and has a working knowledge of IDOT specifications and procedures.

b) One (1) or more in-house full-time employees who have a working knowledge of IDOT specifications and documentation procedures for the inspection of work and a current certificate for the successful completion of the IDOT Construction Documentation of Contract Quantities class. A current IDOT Construction Documentation of Contract Quantities certification number must be included.

c) One (1) or more in-house full-time employees in the position of Trained/Materials technician(s) who have a working knowledge of Hot Mixed Asphalt (HMA) density and temperature, Portland Cement Concrete (PCC) air, slump, making strength specimens, sampling, and temperature, and Soils density testing and have successfully completed the appropriate QC/QA (STTP S-33*, HMA I, & PCC Level I) trained technician classes.

Note: *IDOT Class STTP S-33 for Soils Field Testing and Inspection, was formerly known as “Standard Earth Density.”

d) Access to IDOT approved testing equipment for PCC, HMA, Aggregates, and Soils according to the “Manual of Test Procedures for Materials.”

e) Either a full-time employee with experience as a survey party chief and adequate survey equipment OR a subconsultant** prequalified in surveying.

**Note: ****If you do not have an employee that has an Illinois PLS License, you will need to add a subconsultant. The Illinois PLS licensed employee from the subconsultant will need to be added to the firm staff, noting that the employee is a subconsultant and not a full-time employee, so they can be selected from the drop-down staff menu in the Survey Party Chief section within the questionnaire.

5. Electrical Engineering

This consists of the design of electrical components of **transportation facilities**.

The following experience will **NOT** be considered:

- Schools, office/administration buildings, churches, courthouses, hospitals, maintenance facilities/yards, garages, salt domes, etc.
- Heating, cooling, and ventilation.
- Water Treatment Facilities.

Minimum requirements are one (1) full-time Illinois Licensed Professional Engineer with training and demonstrated experience in Phase II electrical engineering design, preparation of plans, special provisions, and cost estimates, and experienced support staff.

6. Landscape Architecture

This work consists of the Phase II engineering design services necessary for the preparation of plans, special provisions, and estimate of cost for aesthetically pleasing landscape features along roadways, freeways and other **transportation facilities**.

The following experience will **NOT** be considered:

- Private residences, schools, office/administration buildings, churches, courthouses, hospitals, businesses, maintenance facilities/yards, garages, parking lots, etc.

Minimum personnel requirements for prequalification are one (1) full-time Illinois Licensed Landscape Architect, one (1) Illinois Licensed Architect, and/or one (1) Illinois Licensed Professional Engineer with demonstrated experience in design and preparation of plans, special provisions, and cost estimates of transportation related landscape architectural features.

7. Mechanical Engineering

This consists of the design of mechanical components of **transportation facilities**.

The following experience will **NOT** be considered:

- Schools, office/administration buildings, churches, courthouses, hospitals, maintenance facilities/yards, garages, salt domes, etc.
- Heating, cooling, and ventilation.
- Water Treatment Facilities

Minimum requirements are one (1) full-time Illinois Licensed Professional Engineer with training and demonstrated experience in Phase II mechanical engineering design, preparation of plans, special provisions, and cost estimates, and experienced support staff.

8. Mobile LiDAR

Mobile LiDAR consists of obtaining and processing Light Detection and Ranging (LiDAR) data, collected via ground-based mobile acquisition methods, and based upon information obtained from the corresponding ground survey control, in order to provide digital elevation data, including surface models, terrains, contours, and topographic features.

Minimum requirements are one (1) Illinois Licensed Professional Engineer, one (1) Illinois Professional Land Surveyor, and support staff with training and experience in mobile LiDAR data collection and processing.

9. Project Controls

Project Controls consists of the development tracking and forecasting of project schedules, development of detailed costs, including the monitoring and control of project or program cost expenditures in addition to developing construction cost estimates of project and/or program. Additionally, provide for scope control as it relates to change management as well as risk management. As a prerequisite for a Project Controls prequalification rating, a consultant must have:

a) Experience developing, maintaining and reviewing IDOT, or another comparable agency, program, project or planning, detail design and design development phase and construction phase schedules using the Critical Path Method (CPM). This includes a level of competence/confidence in applicable scheduling tools or software such as Oracle/Primavera P6.

b) Experience developing and maintaining IDOT, or another comparable agency, Cost Control procedures and standards.

c) Experience developing and maintaining IDOT, or another compatible agency, change management logs, registries and forecasting procedures for all phases of a project or program. This may include developing strategies for mitigating or negotiating changes.

d) Experience developing and maintaining IDOT, or another comparable agency, Earned Value Management System (EVMS) and Performance Measurement Baseline (PMB).

e) Experience developing IDOT, or another comparable agency, construction cost estimates utilizing parametric, or construction crew-based estimates applied to standard IDOT Pay Items or project specific pay items including lump sums. This includes a level of competence/confidence in utilizing applicable construction cost software which may include take-off applications like On-Screen Takeoff, in addition to standard cost estimating software like R S Means, Sage Estimating (Timberline), Bluebeam, Heavy Bid (by HCSS).

f) Experience developing and maintaining IDOT, or another comparable agency, Risk Registries, Risk Rating and Risk Mitigation Strategies through quantitative and qualitative methods.

g) Experience developing and maintaining IDOT, or another comparable agency, Document and Configuration Control Systems. This would include utilizing accepted document controls systems/software may include SharePoint, Aconex, PM Web, e-Builder, and others.

h) Experience analyzing IDOT, or another comparable agency, consultant or contractor delay or change claims. The experience(s) should include demonstration of providing early identifications through the claim resolution.

***Note**: The listing of specific software/applications or systems is not an endorsement of specific companies or processes and is used to provide a context for demonstrating experiences with these or similar programs in order to pre-qualify for these project controls functions.*

10. Public Involvement

Public Involvement consists of services required to involve and notify specific communities and stakeholders effected by a transportation project. This work involves gathering and documenting thoughts and opinions of the traveling public, transportation staff, government officials, and other stakeholders, to create open communication during the development and design of a transportation project. Public Involvement Lead and Support Staff are to represent IDOT in a professional manner when facilitating such transportation projects and must demonstrate: knowledge and experience of effective ways of contacting the public, facilitating public meetings and hearings, creating a Stakeholder Involvement Plan (SIP), use of social media, creating project websites, organizing special events for public/stakeholder engagement and community outreach to involve the traveling public and all stakeholders with a vested interest in the project. To prequalify for Public Involvement, firms are required to have staff that meet both the Lead requirements and all of the following categories for the support staff listed below:

- Media strategy and implementation, including social media;
- Website creation;
- Presentation/communication material preparation;
- Public and stakeholder information distribution; and
- Stakeholder identification and involvement.

Public Involvement Lead Requirements:

a) **Education**: Minimum four (4) -year degree

b) **Experience**: Must include serving as the Public Involvement Lead for the required number of public involvement documents:

(1) One (1) or more sample letter(s) of having to contact the public for a transportation related project;
(2) One (1) or more transportation-related project(s) holding a public hearing and/or meeting; and a copy/evidence of a public hearing and/or meeting; and

(3) One (1) or more transportation-related project(s) having a Stakeholder Involvement Plan (SIP); and a copy of the plan.

The Public Involvement Lead is the person that managed or oversaw the preparation of all the above documents. Only one person may receive credit as the Public Involvement Lead of any of the above documents. The Public Involvement Lead shall also provide their resume documenting past transportation-related public involvement experience. Experience listed in the Lead's resume shall include specific public meetings, such as, Workshops, Open House, and Information Exchange and specifically how the Lead was the person who facilitated such public meetings and managed or oversaw the preparation of such meetings. (Refer to Chapter 19 of the Bureau Design and Environment (BDE) Manual for Public Involvement guidelines and duties.)

Public Involvement Support Staff Requirements:

a) **Education**: Minimum two (2) year degree or Minimum two (2) years' experience

b) **Experience**: Shall be listed in the Support Staff's resume and must include knowledge and experience of any or all of the following categories:

(1) Media strategy and implementation, including social media;
(2) Website creation;
(3) Presentation/communication material preparation;
(4) Public and stakeholder information distribution; and
(5) Stakeholder identification and involvement.

Notes:
- Experience must reflect projects that were completed within the last **five** (**5) years**.
- Subconsultants are not allowed as Public Involvement Leads or as Support Staff **except** for the website creation category.
- For a firm to be pre-qualified for Public Involvement, all categories listed under Support Staff must be met.

11. Quality Assurance Testing (HMA & Aggregate / PCC & Aggregate)

a) Services

A quality assurance plan following the BDE Manual Chapter 8-6 "Quality Assurance/Quality Control Guidelines for Work by Consulting Engineers" is required. Services include managing the Quality Assurance (QA) requirements for Hot Mix Asphalt (HMA) and Portland Cement Concrete (PCC) Quality Control/Quality Assurance (QC/QA) projects according to the Standard Specifications for Road and Bridge Construction and any applicable contract special provisions.

Services also include coordination of QA activities with the contractor and the Engineer, QA field and lab tests, inspection of the contractor's QC activities, reporting of results and investigations of tests when required by the contract.

b) Personnel Requirements

Project Manager - Minimum personnel requirements include a qualified project manager who shall be an Illinois Licensed Professional Engineer and who shall manage the required QA activities and tests at the specified Quality Assurance laboratory listed in the SEFC application. The Project Manager shall be a full-time employee at the QA laboratory. The project manager must have successfully completed the following classes:

(1) QC/QA Training Classes

a) HMA Level I, II, and III Mix Design classes and the Superpave upgrade class (if the original class preceded the inclusion of Superpave),
b) PCC Level I, II, and III Mix design Classes,
c) Aggregates – Aggregate classes are in addition to the HMA and/or PCC QC/QA Training classes. They include the three-day Mixture Aggregate Technician Course or the 5-day Aggregate Technician Course.

(2) Specific Task Training Program Classes
a) S-14 Construction Documentation
b) S-33 Soils Field Testing and Inspection

(3) Field Supervisor/Lab Manager – The project manager shall indicate on the SEFC who, if other than the project manager, oversees operation of field technicians, or laboratory activities. The project manager shall document the person's time in their position, as well as their experience and education.

(4) Field/Lab Technicians

Personnel directly in charge of sampling and testing should have a minimum of 3 years (field) and/or 5 years (lab) of relevant experience in HMA designs. Personnel coordinating QA activities for PCC projects should have at least two years of experience in field tests and observations. The consultant shall provide a list of all current technical employees who have received training through the QC/QA program and/or the Specific Task Training program offered by IDOT. The list shall include all attendance dates as well as a Pass (P) or Fail (F) notification document.

c) Laboratory and Equipment

The consultant shall have an IDOT approved PCC/Aggregate, or HMA/Aggregate laboratory as indicated in the advertisements for offers of interest for professional services. The laboratory and equipment shall be approved according to the current Bureau of Materials and Physical Research (BMPR) Policy Memorandum, "Minimum Private Laboratory Requirements for Construction Materials Testing or Mix Design."

The laboratory indicated in the advertisement for offers of interest for professional services shall be accredited according to the AASHTO Accreditation Program (AAP) for those procedures specified for the type(s) of laboratory in the BMPR Policy Memorandum, "Minimum Private Laboratory Requirements for

Construction Materials Testing or Mix Design." They shall also participate in **ALL** proficiency testing specified for the type(s) of laboratory in the policy memorandum as well. The project manager (or designee) shall add IDOT as a specified on the AASHTO website, allowing IDOT access to the laboratory's proficiency test results. The effected date for IDOT to have access to proficiency test results shall be rolled back as far as possible for each test procedure on the AASHTO website.

The Consultant shall also have IDOT-approved testing equipment for PCC and HMA field tests according to the "Manual of Test Procedures for Materials." PCC field testing includes air, slump, making strength specimens, sampling, temperature, and self-consolidating concrete tests. HMA field testing includes density and temperature. The Manual of Test Procedures for Materials may be downloaded from the website under the Bureau of Materials Section.

12. Regulated Substances

a. Simple

A variety of sites may be assessed (e.g., residential, commercial/industrial sites, chemical manufacturing sites, vehicle service stations, storage sites and buildings, structures containing potential contamination, and spills in IDOT yards). Additional work may include conducting surveys and testing of stored materials, tank contents, and containers to determine whether regulated substances, hazardous waste, special waste, or hazardous materials are present.

Provisions for laboratory and field testing including geophysical methods will be required for a variety of hazardous and non-hazardous wastes including, but not limited to water quality parameters.

Evaluation, summarizations, and reporting on preliminary site investigations, petroleum-related leaking underground storage tanks (LUSTs), laboratory analysis, and remedial designs, as well as construction oversight activities may be included as an important part of this work.

The firm has a choice for preparing the Regulated Substances: Simple category questionnaire:

a) Follow the standard process listed below by submitting the full Simple questionnaire, or
b) Submit a letter on firm letterhead petitioning for approval of the Simple category based on an approved or pending Regulated Substances: Advance category application. The letter shall provide a statement of the firm's intention and include the SEFC ID # and date of the most recent approved or pending Advance submittal.

For a firm to be prequalified in this area of specialization, the following must be fully met: (1) office location and organization, (2) minimum firm experience, (3) minimum staff experience, and (4) equipment/support services, as described below.

(1) Office location and organization

c) List the office(s) and location (city) from which the majority of IDOT work will be accomplished. That is, key management and technical staff proposed to work on any part of the contract must be stationed at this office location. Specialized expertise from outside offices utilized intermittently during the study, design or implementation of projects is allowed and should be included.
d) Provide an organizational chart showing the administrative/ management of the office and a flow chart of key personnel, professional and technical, and the company's office(s) that would most likely be involved in the project(s). The organizational chart shall specifically identify the Illinois Licensed Professional Engineer(s) and/or Illinois Licensed Professional Geologist(s). Similarly, subconsultant(s) location and organization shall be detailed in this section. The organization chart staff should match those listed in the Minimum Staff Experience section.

(2) Minimum firm experience requires the successful completion as the prime consultant of the following:

Seven or more of the following types of projects completed within the past ten (10) years:
a) One (1) LUST (leaking underground storage tank cleanup in Illinois) project, using 35 Illinois Administrative Code [IAC] 742 Tier 2 or Tier 3 analysis);
b) One (1) SRP (Site Remediation Program cleanup in Illinois) project, using 35 IAC 740 using 35 IAC 742 Tier 2 or Tier 3 analysis);
c) One (1) CO (Construction Oversight) or USFO (Uncontaminated Soil Fill Operation) or CCDD (Clean Construction Demolition Debris) project;
d) One (1) USEPA RCA (RCRA Corrective action) project, or project with management of RCRA hazardous waste;
e) One (1) ESA (Phase I environmental site assessment) project;
f) One (1) ESA (Phase II site investigation) project; and
g) One (1) other regulated substances-related projects, demonstrating the firm's experience with the type of work performed by the department under the Regulated Substances: Advance category.

To facilitate IDOT review of minimum firm experience, the firm shall present each project description with a numerical identification. The firm shall provide a cross-referenced table / matrix listing the project type, project identification (project name, client, brief description, location, and regulatory reference ID #), year project began and was completed, and the staff names associated with the project. The table/matrix shall be titled "Table 1 - Firm Experience".

Additional information for firm experience:

- Each project description should clearly indicate, at a minimum:
  - One IDOT project category, i.e., LUST, SRP, CO (or USFO or CCDD), RCA, ESA Phase I, ESA Phase II, Other.

  - Client contact person and phone #. It is acceptable to mark as confidential but still must provide contact name and phone. IDOT must have a way to check references.
  - IEPA program reference number for LUST and SRP projects.
- For minimum firm experience (including Table 1), identify only one category per project description. Thus, for the Simple category, there must be at least seven (7) unique project descriptions.
- Ensure the project description and scope of work are germane and specific to the chosen category.
- Project Description: Provide a concise description of the overall project. It is unnecessary to repeat the same information in the Scope of Work section.
- Scope of Work: Describe the specific services the firm provided that are applicable and responsive to the particular category. Do not repeat the same information in the Project Description section.

(3) Minimum staff experience includes the following technical groups of which at least one (1) individual must be an Illinois Licensed Professional Engineer or an Illinois Licensed Professional Geologist.

a) Administrative/Managerial Staff – (Responsible for the day-to-day supervision of work assignments, efficient utilization of resources, client satisfaction, and project budgets).

Two (2) or more individuals with five or more years of direct experience in the following skill sets:

1. LUST – Leaking Underground Storage Tank cleanup in Illinois;
2. SRP – Site Remediation Program cleanup in Illinois;
3. CO – (Construction Oversight) or USFO (Uncontaminated Soil Fill Operation) or CCDD (Clean Construction Demolition Debris);
4. RCA – Resource Conservation and Recovery Act (RCRA) Corrective Action or management of RCRA hazardous waste;
5. ESA – Phase I environmental site assessment;
6. ESA – Phase II site investigation.

b) Technical/Professional Staff – (Responsible for performing scientific/technical tasks for the projects).

Two (2) or more individuals with three (3) or more years of direct experience in the following skill sets: LUST, SRP, CO or USFO or CCDD, ESA Phase I, and ESA Phase II.

c) Investigation Field Staff
Two (2) or more individuals, each with two (2) or more years of experience in environmental sampling/measurement activities.

To facilitate IDOT review of minimum staff requirements, the firm shall provide a cross-referenced table / matrix listing the unique staff names in each of the three staffing groups, their respective project type experience, professional

license(s), if any, and years of experience. The document shall be titled “Table 2 - Staff Experience”.

(4) Minimum equipment/support services:

a) PPE: List five (5) important pieces of personal protection equipment (levels D, C and B) the firm should have readily available to conduct environmental investigations, remediation, and oversight.

b) Measuring & Sampling: List ten critical pieces of physical/chemical/geophysical measurement and sampling equipment the firm should have readily available to conduct investigations, remediation, and oversight.

c) Chemical Testing: In-house capability or established working and/or contractual relationships with an environmental testing laboratory. The environmental laboratory (ies) must be accredited by IEPA under 35 Illinois Administrative Code 186.

d) Physical Testing & Drilling: In-house capability or established working and/or contractual relationship with physical, geophysical, and drilling companies to conduct investigations, remediation, and oversight.

b. Advance

A variety of sites may be assessed (e.g., old, abandoned, or improperly closed dumps, chemical manufacturing sites, metal plating/fabricating sites, dry cleaning/service stations, storage sites and buildings, structures containing potential contamination, spills in IDOT yards, and screening for the presence of radionuclides). Additional work may include conducting surveys and testing of stored materials, tank contents, and containers to determine whether regulated substances, hazardous waste, special waste, or hazardous materials are present, conducting environment compliance audits and developing or maintaining environmental management systems.

Provisions for laboratory and field testing including geophysical methods will be required for a wide variety of hazardous and non-hazardous wastes including, but not limited to water quality parameters, poly-chlorinated biphenyls (PCBs), pesticides, heavy metals, organics, and radioactive wastes.

Evaluation, summarizations, and reporting on preliminary site investigations, petroleum-related leaking underground storage tanks (LUSTs), asbestos assessments, laboratory analysis, and remedial designs, as well as construction oversight activities may be included as an important part of this work.

For a firm to be prequalified in this area of specialization, the following must be fully met: (a) office location and organization, (b) minimum firm experience, (c) minimum staffing experience, and (d) equipment/support services, as described below.

(1) Office location & organization

a) List the main office from which the majority of IDOT work will be accomplished. That is, key management and technical staff proposed to work on any part of the contract must be stationed at this office location. Specialized expertise from outside offices utilized intermittently during the study, design or implementation of projects is allowed and should be included.

b) Provide an organizational chart showing the administrative/ management of the office and a flow chart of key personnel, professional and technical, and offices that would most likely be involved in the project(s). The organizational chart shall specifically identify the Illinois Licensed Professional Engineer(s) and Illinois Licensed Professional Geologist(s). Similarly, subconsultant(s) location and organization shall be detailed in this section. The staff should match those listed in Section C, Minimum Staff Experience. Also, two additional documents shall be added as supplemental pages to the organizational chart; see Sections b (Minimum firm experience) and c (Minimum staff experience) for details on the cross-referenced table/matrix.

(2) Minimum firm experience requires the successful completion as the prime consultant of the following:

a) Ten (10) or more of the following types of projects completed within the past ten (10) years:
   1. One (1) Remedial Investigation/Feasibility Study (RI/FS) (using CERCLA/SARA procedures),
   2. One (1) USEPA RCRA Corrective Action (RCA),
   3. One (1) Remedial Design (RD),
   4. One (1) Remedial Construction Oversight (RCO),
   5. Two (2) Site Remediation Programs (SRPs) (under 35 Illinois Administrative Code (IAC) 740, and at least one (1) using 35 IAC 742 Tier 2 or Tier 3 analysis), and
   6. Two (2) Leaking Underground Storage Tanks (LUSTs) (both using 35 IAC 742 Tier 2 or Tier 3 analysis).
   7. Two other types of projects (RI/FS, RCA, RD, RCO, SRP or LUST using Tier 2 or Tier 3, ECA, ESA, EMS, Risk Assessment [RA], or Construction Oversight [CO]).

b) In addition to the above projects, four (4) Environmental multi-media Compliance Audits (ECA) projects on industrial or governmental facilities completed within the past **ten (10) years**.

To facilitate IDOT review of minimum firm experience, the firm shall present each project description with a numerical identification. The firm shall provide a cross-referenced table/matrix showing the project identification (project name, client, location, brief description, and regulatory ID number), year project began and was completed, and the staff names associated with the project

versus the project type (e.g., RI/FS, RCA, RD, LUST, etc.). Include the client name and telephone number for every project description. For LUST and SRP project descriptions, include the IEPA program tracking reference numbers, e.g., the LPC#. For RCA project descriptions, include the USEPA program tracking reference number, e.g., ILD / ILR#. The cross-reference table/matrix shall be titled "Table 1 - Firm Experience".

(3) Minimum staff experience includes the following technical groups of which one individual must be an Illinois Licensed Professional Engineer, and one individual must be an Illinois Licensed Professional Geologist:

a) Administrative/Managerial Staff - (Responsible for the day-to-day supervision of work assignments, efficient utilization of resources, client satisfaction, and project budgets).

Three (3) or more individuals, each with five (5) or more years of direct experience in the following skill sets:

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 (CERCLA/SARA),
- Remedial Investigation/Feasibility Studies (RI/FS),
- Resource Conservation and Recovery Act (RCRA),
- Facility Inspections (RFI),
- RCRA Corrective Action (RCA),
- Remedial Designs (RD),
- Remedial Construction Oversight (RCO),
- Site Remediation Program (SRP) cleanups in Illinois,
- Petroleum-related Leaking Underground Storage Tank (LUST) cleanups in Illinois, and
- Environmental multi-media Compliance Audits (ECA).
- Environmental Site Assessment (Phase I and Phase II)

b) Technical/Professional Staff – (Responsible for providing technical direction for the project(s), and effective management of technical support staff, project schedule(s), and budget(s)).

- Four (4) or more individuals, each with five (5) or more years of direct experience in CERCLA/SARA, RI/FS, RFI, RCA, RD, RCO, ESA, SRP, and petroleum-related LUST cleanups in Illinois, and ECA.

- Three (3) or more individuals, each with four (4) or more years of direct experience in CERCLA/SARA, RCA, RD and RCO.

c) Investigation Field Staff - Four or more individuals, each with three or more years of experience in environmental sampling/measurement activities.

To facilitate IDOT review of minimum staff requirements, the firm shall provide a cross-referenced table/matrix listing the unique staff names in each of the three staffing groups, their respective project type experience, professional license(s), if any, and years of experience. The document shall be titled "Table 2 - Staff Experience".

For minimum staff experience, the firm should list an individual only once in the organizational chart, the cross-reference staff experience table, and in EPAS. That is, choose the staffing group that best represents the individual. Do not list an individual in more than one group. Thus, for the ADVANCE prequalification, there shall be at least 14 unique individuals covering the staffing groups.

(4) Minimum equipment/support services:

a) PPE: Personal protection equipment (levels D, C and B) to conduct investigations and remediations.

b) Measuring & Sampling: Physical/chemical/geophysical measurement and sampling equipment to conduct investigations and remediations.

c) Chemical Testing: In-house capability or established working and/or contractual relationships with an environmental testing laboratory. The environmental laboratory (ies) must be accredited by IEPA under 35 Illinois Administrative Code 186.

d) Physical Testing & Drilling: In-house capability or established working and/or contractual relationship with physical, geophysical, and drilling companies to conduct investigations, remediation, and oversight.

Additional information for SEFC preparation

- Each project description should clearly indicate, at a minimum:
  - One (1) IDOT project category, i.e., ECA, RI/FS, LUST, SRP, Other, etc.
  - The year project began and was completed.
  - Client contact person and phone #. It is acceptable to mark as confidential but still must provide contact name and phone. IDOT must have a way to check references.
  - IEPA program reference number for LUST and SRP projects.
- For minimum firm experience (including Table 1 – Firm Experience) identify only one category per project description. Thus, there must be at least fourteen (14) unique project descriptions.
- Ensure the project description and scope of work are germane and specific to the chosen category.
- Project Description: Provide a concise description of the overall project. It is unnecessary to repeat the same information in the Scope of Work section.
- Scope of Work: Describe the specific services the firm provided that are applicable and responsive to the particular category. Do not repeat the same information in the Project Description section.

13. Sanitary Engineering

This work consists of the analysis of various waste material and the design and application of storm water and waste disposal facilities to handle and dispose of such. Experience in moving, relocating, and/or establishing sanitary/storm sewers through and/or in roadway systems is required for prequalification in this category.

The following experience will **NOT** be considered:

- Water Treatment Facilities
- Private residences, schools, office/administration buildings, churches, courthouses, businesses, maintenance facilities/yards, garages, etc.

Minimum requirements are one (1) full-time Illinois Licensed Professional Engineer with demonstrated experience in sanitary engineering and support staff.

14. Subsurface Utility Engineering

Services include the utilization of ASCE 38 “Standard Guideline for Collection and Depiction of Existing Subsurface Utility Data.” Responsibilities include highly efficient, nondestructive engineering incorporating civil engineering, surface geophysics, surveying and mapping, nondestructive vacuum excavation, and asset management technologies to identify and classify quality levels of existing subsurface utility data as well as map the locations of the underground utilities. The projects will involve research, field investigations, test holes, plotting design, engineering analysis and recommendations relative to impacts on existing or proposed utilities. The consultant must be able to complete the following four levels of subsurface utility engineering:

Level A:
Precise horizontal and vertical location of utilities obtained by the actual exposure and subsequent measurement of surface utilities, usually at a specific point. Minimally intrusive excavation equipment is typically used to minimize the potential for utility damage. A precise horizontal and vertical location, as well as other utility attributes, is shown on plan documents. Accuracy is typically set to 15-mm vertical and to applicable horizontal survey and mapping accuracy as defined or expected by the project owner.

Level B:
Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. Quality level B data should be reproducible by surface geophysics at any point of their depiction. This information is surveyed to applicable tolerances defined by the project and reduced onto plan documents.

Level C:
Information obtained by surveying and plotting visible above-ground utility features and by using professional judgment in correlating this information to quality Level D information.

Level D:
Information derived from existing records or oral recollections.

The consultant is also required to have the following:

b) Experience in researching the location of utilities, above and underground.

c) Knowledge of the equipment/techniques necessary to locate the utilities.

(1) Surface geophysical techniques, such as, electromagnetic, magnetic, sonic, etc.
(2) Excavation by use of test holes using vacuum excavation or comparable non-destructive equipment.

d) The ability to determine the extent the proposed roadway improvement impacts the existing utilities.

e) The ability to provide staff and equipment for simultaneous projects at multiple locations.

f) A project manager and project engineer who have adequate experience in managing subsurface underground engineering projects.

g) One (1) Illinois Licensed Professional Engineer and support staff.

15. Surveying

This work consists of measurements, calculations, and field work necessary to establish line and grade for a specific transportation improvement. Surveys also include topographic surveys, determining boundaries, writing descriptions of specific parcels of land and the installation and restoration of monuments.

The following experience will **NOT** be considered:
- Construction Staking
- Surveying not completed on/or around transportation right-of-way

Minimum personnel requirements are one (1) full-time Illinois Licensed Professional Land Surveyor with demonstrated experience conducting surveys for transportation specific improvements and experienced support staff.

L. SPECIALTY AGENTS

Appraisers (Certified General Real Estate Appraiser and Certified Residential Real Estate Appraiser), Review Appraisers (Certified General Real Estate Appraiser and Certified Residential Real Estate Appraiser), Negotiators, and Relocation Agents must have the necessary background, experience, and ability to demonstrate good judgment in the area of eminent domain acquisition and relocation. The appropriate state and federal regulations must be followed explicitly to secure the rights of the property owners and tenants guaranteed under the Fifth Amendment while assuring the taxpayers of Illinois only pay a fair and equitable price for property. All agents must have a working knowledge of plats, plans, profiles, legal descriptions, and title reports.

1. Appraiser

Appraisers interpret highway plans and determine the effect of a proposed improvement on the properties being appraised. Appraisers demonstrate good judgment in forming opinions of fair market values based on experience and training.

The minimum requirement for prequalification in this category is a full or part-time appraiser licensed as a Certified General Real Estate Appraiser or a Certified Residential Real Estate Appraiser by the Illinois Department of Professional & Financial Regulation (IDFPR), along with submitting:

a) A current copy of their Illinois appraisal license. Must be current, in good standing and no discipline issues.

b) A minimum of two (2) and up to five (5) completed and signed appraisals provided as examples for department review, documenting at least two (2) years of eminent domain experience appraising properties. USPAP Confidentiality requirements require reports not for IDOT to either be redacted or provide letter of release from their client.

c) Evidence of the successful completion of at least one (QEU) eminent domain appraisal class with exam*, sponsored by either the National Highway Institute (NHI), the Appraisal Institute, the International Right of Way Association (IRWA), or the American Society of Farm Managers & Rural Appraisers (ASFMRA).

> **Note:** Former land acquisition work experience as a direct employee (RS III, RS IV or RS V Appraisers) of the Illinois Department of Transportation may be considered in lieu of some requirements. Evaluated on a case-by-case basis. Additionally, in keeping with USPAP competency requirements, appraisers are required to take a minimum of one class additional eminent domain QEU or CEU class of 7 hours or more for **each EPAS Renewal period.** As per USPAP Standards Rule 1-1 (a) “Each Appraiser must continuously improve his or her skills to remain proficient in real property appraisal.”

2. Review Appraiser

A ***review*** appraiser is responsible for the administrative approval of the appraised value of real property or assures that appraisal reports conform to the requirements of law and policy, or that the value of real property opined by appraisers represents adequate security, fair market value, or other defined value.

The minimum requirement for prequalification in this category is a full or part-time appraiser licensed as a Certified General Real Estate Appraiser or a Certified Residential Real Estate Appraiser by the IDFPR, along with submitting:

a) A current copy of their Illinois appraisal license. Must be current, in good standing and no discipline issues.

b) At least two (2) years of eminent domain experience appraising properties with a minimum of two and up to five completed and signed appraisals provided as examples for department review. USPAP Confidentiality requirements require reports not for IDOT to either be redacted or provide letter of release from their client.

c) Evidence of the successful completion of at least one eminent domain appraisal class* sponsored by either the National Highway Institute (NHI), the Appraisal Institute, the International Right of Way (RWA), or the American Society of Farm Managers & Rural Appraisers (ASFMRA).

> **Note:** Former land acquisition work experience as a direct employee (RS III, RS IV or RS V Appraisers) of the Illinois Department of Transportation may be considered in lieu of some requirements. Evaluated on a case-by-case basis. Additionally, in keeping with USPAP competency requirements, Review Appraisers are required to take a minimum of one eminent domain QEU or CEU class of 7 hours or more for **each EPAS Renewal period**. As per USPAP Standards Rule 1-1 (a) “Each Appraiser must continuously improve his or her skills to remain proficient in real property appraisal.”

d) Documentation showing experience in litigation to include formal testimony.

3. Negotiator

A negotiator is accountable for negotiating highway right-of-way acquisition for assigned right-of-way parcels of the state construction program.

The minimum requirement for prequalification in this category is a full or part-time Negotiator with:

a) A minimum of two (2) and up to five (5) completed Negotiator’s Notes provided as examples for department review.
b) Two (2) or more of the following courses are required:
   (1) International Right of Way Association (IRWA) class 104 “Standards of Practice for the Right of Way Professional”
   (2) IRWA class 200 “Principles of Real Estate Negotiation”

(3) IRWA 203 “Alternative Dispute Resolution”
(4) NHI Class 141045 “Real Estate Acquisition under the Uniform Act”.

c) Experience in title searching and clearance, handling real estate transactions, property management, and/or training in a field relative to real estate is desired.

4. Relocation Agent

A Relocation Agent is responsible for all relocation related activities assigned by the State and acts as the State’s representative to the property owner(s). A relocation agent facilitates communication to all parties related to a property acquisition. For each relocation of a parcel, the Relocation Agent shall be required to provide relocation assistance, advisory services, and determine the amount of payments to be provided to every displaced person(s).

The minimum requirement for prequalification in this category is a full or part-time Relocation Agent with:

a) A minimum of two (2) and up to five (5) completed Relocation Assistant Unit Records provided as examples for department review.

b) Two (2) or more of the following International Right of Way Association (IRWA)* courses are required:
(1) IRWA course 501 “Residential Relocation Assistance”
(2) IRWA course502 “Business Relocation”
(3) IRWA course 503 “Mobile Home Relocation”
(4) IRWA course 504 “Computing Replacement Housing Payments”
(5) IRWA course 505 “Advanced Residential Relocation Assistance”
(6) IRWA course 506 “Advanced Business Relocation Assistance”

*Note: Other comparable real estate relocation and/or degree courses may be substituted at the discretion of the department.

c) Experience in residential relocations, business relocations, farm relocations, and/or non-profit organization relocations is desired.

APPENDIX: LIST OF CATEGORIES

The following is a complete listing of the prequalification categories, in alphabetical order:

1. Airports - Construction Inspection
2. Airports - Construction Inspection: Complex Electrical
3. Airports - Design
4. Airports - Design: Complex Electrical
5. Airports - Master Planning/Airport Layout Plans (ALP)
6. Environmental Reports - Environmental Assessment (EA)
7. Environmental Reports - Environmental Impact Statements (EIS)
8. Geotechnical Services - Complex Geotechnical/Major Foundations
9. Geotechnical Services - General Geotechnical Services
10. Geotechnical Services - Structure Geotechnical Reports (SGR)
11. Geotechnical Services - Subsurface Explorations
12. Highways - Freeways
13. Highways - Roads and Streets
14. Hydraulic Reports - Pump Stations
15. Hydraulic Reports - Waterways: Complex
16. Hydraulic Reports - Waterways: Two-Dimensional Hydraulics (2D)
17. Hydraulic Reports - Waterways: Typical
18. Location Design Studies - New Construction/Major Reconstruction
19. Location Design Studies - Reconstruction/Major Rehabilitation
20. Location Design Studies - Rehabilitation
21. Special Plans - Lighting: Complex
22. Special Plans - Lighting: Typical
23. Special Plans - Pumping Stations
24. Special Plans - Traffic Signals
25. Special Services - Aerial Mapping/LiDAR
26. Special Services - Architecture
27. Special Services - Asbestos Abatement Surveys
28. Special Services - Construction Inspection
29. Special Services - Electrical Engineering
30. Special Services - Landscape Architecture
31. Special Services - Mechanical Engineering
32. Special Services - Mobile LiDAR
33. Special Services - Project Controls
34. Special Services - Public Involvement
35. Special Services - Quality Assurance HMA & Aggregate
36. Special Services - Quality Assurance PCC & Aggregate
37. Special Services - Regulated Substances: Advance
38. Special Services - Regulated Substances: Simple
39. Special Services - Sanitary Engineering
40. Special Services - Subsurface Utility Engineering
41. Special Services - Surveying
42. Special Studies - Feasibility
43. Special Studies - Location Drainage
44. Special Studies - Pavement Analysis and Evaluation
45. Special Studies - Safety
46. Special Studies - Signal Coordination and Timing (SCAT)
47. Special Studies - Traffic Studies
48. Specialty Agents - Appraiser

49. Specialty Agents - Negotiator
50. Specialty Agents - Relocation Agent
51. Specialty Agents - Review Appraiser
52. Structures - Highway: Advanced Typical
53. Structures - Highway: Complex
54. Structures - Highway: Simple
55. Structures - Highway: Typical
56. Structures - Major River Bridges
57. Structures - Moveable
58. Structures - Painting Inspections
59. Structures - Railroad
60. Structures - Steel Fabrication
61. Structures - Underwater Diving Inspections
62. Transportation Studies - Mass Transit
63. Transportation Studies - Railway Engineering
64. Transportation Studies - Railway Planning