Prequalification for Engineering and Engineering-Related Services with the Department of Highways

Prepared by:
KYTC Division of Professional Services

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PREQUALIFICATION ACTIONS

KRS Chapter 45A requires that consulting firms desiring to be prequalified with the Transportation Cabinet provide annual updates of their qualifications. The anniversary date is the date of the letter from the Cabinet granting approval of the firm's prequalification request. This shall establish the firm's annual renewal date by which the firm is expected to have renewed its qualifications with the Cabinet.

Annual applications shall include one (1) original and one (1) copy of the application for each functional area requested, and one (1) original and one (1) copy of a current marketing brochure; unless otherwise communicated to the firm in writing. Copy for functional area may be submitted as an electronic document in Adobe PDF format on CD or DVD media (in lieu of hardcopy for each functional area).

In odd calendar years, in lieu of a full application, firms may submit a letter certifying that nothing has substantially changed from the previously submitted application along with annual certifications. This odd year update request should include information regarding any previously approved changes from the last even year full update. The request should include a Certification of Professional Liability Insurance and a Certificate of Workers Compensation and Employment Insurance policy. An officer of the firm must also attest that the firm is financially solvent and have a working arrangement with financial institutions such that all outstanding financial obligations will be met. If a substantial change has occurred or the firm is requesting prequalification additional area(s) a full application will be required.

A firm desiring to be considered for an award as a prime shall provide an original Certificate of continuous Professional Liability Insurance in an amount not less than $1,000,000 with their annual prequalification application. The firm shall also provide a Certificate of Workers Compensation and Employment Insurance policy. A certificate of self-insurance shall not be accepted by the Transportation Cabinet.

It is the sole responsibility of the firm to initiate a renewal of its prequalification with the Cabinet. The Cabinet does not send notices of a need to renew. If the firm makes no effort within thirty (30) days of its annual renewal date, then the firm is automatically removed from the Cabinet's listing of prequalified consultants.

Each year, thirty (30) days prior to the firm's annual renewal date, it must submit an updated Prequalification Application Form TC 40-1 for review by the Cabinet's Prequalification Committee.

If the firm has undergone significant modifications to its organization, staffing, or financial status which could affect the firm's qualification status with the Cabinet, then a revised prequalification application is required at the time those changes occur and no later than thirty (30) days prior to the firm's annual renewal date.

A prequalified firm shall immediately notify the Division of Professional Services of a change in the address of the firm or the name of the firm. Firms shall also report immediately of any change in the continuous professional liability policy on file with the Division of Professional Services. If a prequalified firm fails to notify the Division of Professional Services of a change of the address, it may be removed from the list of prequalified firms until it notifies the division of its new address. If the change of address notification is submitted to the Division of Professional Services prior to the firm's annual prequalification date and no other changes have occurred in the firm, the firm shall be restored to the list of prequalified firms. Removal from the list of prequalified firms pursuant to this subsection shall not be a basis for appeal under the provisions of Section 6 of this administrative regulation.

Please direct requests for prequalification forms (TC 40-1) and questions regarding the status of prequalification actions to:

Mrs. Clairessa Hamilton
Kentucky Transportation Cabinet
Department of Highways
Division of Professional Services
200 Mero Street, 3rd Floor
Frankfort, KY 40622
Phone: (502) 564-4555

ENGINEERING AND RELATED SERVICES PREQUALIFICATION CRITERIA

The following criteria should be used by the Highway Department's User Divisions in evaluating a firms qualifications in the requested categories or sub-categories. Acceptable experience of a firm requesting prequalification in a category of work may result from satisfactory work performed by an individual(s) working for the requesting firm or by an individual(s) who gained the required experience while working for another firm or governmental agency that performed similar work or projects. The Division of Professional Services, the External Audit Branch, the User Divisions or the Prequalification Committee may request additional documents to supplement information provided in a submitted prequalification form.

Prequalification Criteria is set by the User Division responsible for the services. Criteria may be changed at any time by the User Division. Firms applying for prequalification should check the User Division Guidance Manual and Policy Memos for updated criteria and other information regarding prequalification.

Performance-based Pre-qualification and Renewal

The single best indicator of firm viability is a strong history of performance. Firms with a proven track record will be prequalified unless conditions of their previous pre-qualification status change. A firm's renewal of pre-qualification status will be based on a satisfactory performance on current projects; and an affirmation by an officer of the firm that the licensed professional engineers identified in previous submittals for prequalification remain in that visible function, no equipment requirements have been listed previously, and that the firm is financially solvent and has working arrangements with financial institutions such that all outstanding financial obligations may be met. Any changes in any of these conditions must be submitted as part of the annual request for renewal. Failure to submit information on such changes can lead to the firm's removal of prequalification.

Initial Prequalification

A firm will provide all information required for the individual areas for which prequalification is requested. An alphabetized listing of the firm's staff with appropriate professional status, areas in which each person works (i.e., Environmental, Highway Design, etc.), and an identification of whether they are full-time or part-time employees will be provided.

A full time employee is defined as one who has eligibility to participate in the firm's benefits program. In addition, an officer of the firm must attest that the firm is financially solvent and have a working arrangement with financial institutions such that all outstanding financial obligations will be met.

Reasons for Removal of Pre-qualification

A firm's project performance will be a basis for continued prequalification. As stated above, under the Qualification-Based Selection (QBS) process, performance is an important indicator of a firm's ability to product the required plans or other product. Removal of prequalification will therefore be based on a firm's failure to perform in a professional and capable manner. Failure to meet schedules on items within the consultant's responsibility will also be a basis for removal of prequalification.

Removal from prequalification will generally be for one (1) year. Re-evaluation of conditions after that year indicating continued non-performance might lead to continued denial of prequalification on a year by year basis.

In addition to the criteria listed below, the deliberate misrepresentation of the firm's qualification and/or the failure to notify the Cabinet of significant changes in the staffing situation of economic condition of a firm will result in the loss of the pre-qualification status for a period of at least one (1) year. The failure to correct the identified deficiencies will result in the continued denial of pre-qualification on a year by year basis.

Department of Aviation
(502-564-4480)

Aviation Systems Planning - A firm shall provide all information for the individual areas for which pre-qualification is requested. An alphabetized listing of the firm's staff with the appropriate experience to complete "Systems Planning" projects shall be provided.

A firm shall provide evidence to the Kentucky Transportation Cabinet of:

1. Knowledge of acceptable practices; and

2. A detailed project listing of no less than two (2) Statewide System Plans, to include:
    - Collection or acquisition, processing and presentation of aviation-related data;
    - Analysis of aviation-related data;
    - Analysis of trends and issues in statewide aviation and nationally;
    - Aviation demand and capacity forecasting at a local (general aviation) level and on a statewide level;
    - Development of existing airport roles in a statewide aviation system;
    - Development of airport facility objectives at individual airports, based on the airport's role in the statewide aviation system;
    - Analysis of airport needs;
    - "Gap" analysis of the existing statewide aviation system utilizing GIS mapping and collected data;
    - Alternatives analysis and recommendations, including cost estimates for required/recommended airport improvements;
    - Experience in public outreach and communications when discussing a statewide aviation system plan.

3. A detailed project listing of no less than two (2) Statewide Aviation Economic Impact Studies, to include:
    - Collection or acquisition, processing and presentation of data related to the direct and indirect economic impacts of airports (general aviation and Part 139);
    - Analysis of direct and indirect economic aviation economic impact data;
    - Establishing with collected data at a local, statewide, and national value to airports (general aviation and Part 139);
    - Analysis of local, statewide and national economic trends and issues related to aviation;
    - Economics forecasting of the local, statewide and national effects of aviation;

- Development of airport facility objectives and improvements to increase the local, statewide, and national economic value and potential of each individual airport;
- Cost/benefits analysis and recommendation of potential airport improvements;
- Experience in public outreach and communications when discussing a Statewide Aviation Economic Impact Study.

Each completed project listed shall include all currently employed, full-time staff with experience on the listed project. Information relating to past experience in those areas listed above shall be submitted for the firm's current staff. This information should include applicable education, training, and work experience. The employees in the firm primarily responsible for the project should be identified and their roles should be clearly explained.

If a staff member's experience was obtained while completing the Aviation Systems Planning project at a firm other than the current company, that information shall also be listed, along with the role the staff member had in the completion of the Aviation System Plan.

(REVISED 1/17)

Airport Master Planning – The following must be demonstrated in a separate section of the prequalification application to be considered:

1. Firm Experience: The level of knowledge and experience shall be demonstrated by providing a detailed project listing of no less than three (3) Airport Master Planning documents. The following is a list of acceptable documents that will be considered as a "Master Planning Document" for prequalification approval purposes:
    - Airport Layout Plan or Airport Layout Plan Update conforming to the latest version of the FAA ARP Standard Operating Procedure (SOP) 2.0 and FAA Advisory Circular 150/5070-6, Airport Master Plans, which may include:
        - Detailed Airport Layout Drawing
        - Data Sheet
        - Facilities Layout Plan
        - Terminal Area Plan (as needed)
        - Airport Airspace Drawing
        - Inner Portion of the Approach Surface Drawing
        - Airport Land Use Drawing
        - Off-Airport Land Use Drawing (as needed)
        - Airport Property Map / Exhibit A
        - Runway Departure Surface Drawing
        - Utility Drawing
        - Airport Access Plans
    - Airport Master Plan or Airport Master Plan Update conforming to the latest version of the FAA Advisory Circular 150/5070-6, Airport Master Plans.
    - Airport Exhibit "A" Airport Property Inventory Map conforming to the latest version of the FAA ARP Standard Operating Procedure (SOP) 3.0.
    - Airport Site Selection Study conforming to the latest version of the FAA Advisory Circular 150/5070-6, Airport Master Plans.
    - Runway Safety Area Determination conforming to the latest version of the FAA ARP Standard Operating Procedure (SOP) 8.0.

2. Staffing: Each completed project listed shall include all currently employed, full-time staff with experience on the listed project. Information relating to past experience in those areas listed above shall be submitted for the firm's current staff. This information should include applicable education, training, and work experience. <u>The employees in the firm primarily responsible for the project should be identified and their roles should be clearly explained.</u>

If a staff member's experience was obtained while completing an Airport Master Planning document at a firm other than the current firm, that information shall also be listed, along with the role the staff member had in the completion of the Aviation System Plan.

(REVISED 1/17)

Airport Design - The following must be demonstrated in a separate section of the prequalification application to be considered:

1. Firm Experience: The level of knowledge and experience shall be demonstrated by providing a detailed project listing of no less than three (3) Airport Design projects. The following is a list of acceptable projects that will be considered as "Airport Design" projects for prequalification approval purposes:
    - New airport design (runway, taxiway, apron, etc.);
    - Runway/Taxiway/Apron geometry modification (extensions, widenings, relocations, expansions, etc.);
    - Major airport pavement rehabilitation (runway/taxiway/apron overlay or reconstruction);
    - Runway safety area improvements (grading modifications);
    - Major airfield drainage improvements, including stormwater systems, edge drains, or drainage repairs between the runway and taxiway.

    Please note that the following aviation-related projects will not be considered as "Airport Design" projects for prequalification approval:
    - Airfield lighting or lighting rehabilitation projects;
    - Airport navigational aids, including Runway End Identifier Lights (REILs), Precision Approach Path Indicator Systems (PAPIs), Wind Cones, Localizers, or any other ground-based navigational system;
    - Airfield markings (runway/taxiway/apron) or marking rehabilitation projects;
    - Fuel system installation or fuel system relocation projects;
    - Runway approach obstruction removal projects;
    - Airport buildings or infrastructure design or demolition, such as hangars, terminal buildings, adjacent residences, etc.;
    - Airport access roads, perimeter roads, or any other projects providing access to the airfield;
    - Perimeter fencing projects

2. Staffing: Each completed project listed shall include all currently employed, full-time staff with experience on the listed project. This information should include applicable education, training, work experience, and their role as part of the design team. The employees in the firm primarily responsible for the project (Primary Project Design Engineer) should be identified and their roles should be clearly explained. Additionally, the firm must have at least one employee with a current Professional Engineering certification for the state of Kentucky.

If a staff member's experience was obtained while completing an Airport Design project at a firm other than the current firm, that information shall also be listed, along with the role the staff member had in the completion of the project design.

(REVISED 1/17)

Airport Noise Analysis – The following must be demonstrated in a separate section of the prequalification application to be considered:

1) Firm Experience: The level of knowledge and experience shall be demonstrated by providing a detailed project listing of at least one (1) Airport Noise Analysis project, or detailing the Noise Analysis component of a larger Aviation Master Planning project. In order for a project to be eligible for Airport Noise Analysis prequalification, it must have been completed within the guidelines of the most current FAA Environmental Impacts Policies and Procedures (ORDER 1050.1F) utilizing the FAA Aviation Environmental Design Tool (AEDT) for noise analysis. In the event that no employee of your firm has completed any projects meeting this criteria, we will accept written certification of completion of FAA AEDT training.

2) Staffing: Each completed project listed shall include all currently employed, full-time staff with experience on the listed project. This information should include applicable education, training, work experience, and their role in the noise analysis. The employees in the firm primarily responsible for the noise analysis should be identified and their roles should be clearly explained.

   If a staff member's experience was obtained while completing a noise analysis at a firm other than the current firm, that information shall also be listed, along with the role the staff member had in the completion of the analysis.

(REVISED 1/17)

Division of Construction
(502-564-4780)

CONSTRUCTION PROJECT SUPERVISION - The Consultant shall provide engineering and engineering-related services to include detailed construction engineering and inspection of materials and workmanship for highway construction in accordance with current Department of Highways standards and procedures. Consultant must be familiar with Kentucky Standard Specifications and sampling and testing requirements.

The consultant engineering firm must provide a minimum of one (1) professional engineer with licensure in Kentucky, who can demonstrate highway construction knowledge and experience, on site as a Project Engineer. The firm must also be capable of providing home office support such as additional personnel, direction and equipment when necessary.

BRIDGE PAINTING PROJECT INSPECTION – The consultant firm shall provide the number of inspectors as requested by the Kentucky Transportation Cabinet for on-site field inspection of the bridge painting project(s). The inspector(s) will use paint inspection instruments, visual inspection, and industry standards to inspect the contractors' work and enforce the Kentucky Standard Specifications and Special Notes. The inspector(s) shall keep complete and accurate daily records of all work performed and the materials used in accordance with the Division of Construction Guidance Manual and as directed by the Engineer.

The inspection will include, but not be limited to, inspect all work for acceptance, document work activities and complete daily reports, provide visual and instrument inspections of surface preparation and coatings applications to ensure conformance to applicable specifications, containment and emissions monitoring, monitor work for compliance with KYOSHA, OSHA, EPA, and state guidelines specified.

The firm will provide inspector(s) who have successfully completed one of the following certifications: SSPC-BCI Level 1 or NACE CIP Level 1. The firm will also provide inspector(s) that demonstrate experience and knowledge of on-site bridge painting inspection and recordkeeping. The inspector(s) must be capable of handling the physical requirements needed to access and perform arms-length inspection of the entire project structure(s).

BRIDGE PAINTING PROJECT MANAGEMENT – The Consultant shall provide bridge painting project management and related services to include detailed daily reporting, project coordination with contractor and State/District personnel, pay estimates, inspection of workmanship in accordance with current Department of Highways standards, plans, procedures, and project special notes. Manager and inspectors must be familiar with Kentucky Standard Specifications, Division of

Construction Guidance Manual 63-01, partnering, sampling, testing and inspection requirements and project special notes.

The consultant firm must provide a minimum of one (1) Project Manager, who can demonstrate bridge painting project management/supervision, reporting, documentation and computation of pay estimates and inspection knowledge and experience, as an on-site project manager. The firm must be capable of providing home office support such as direction, additional support personnel, equipment and an on-site field office with computer and internet capabilities.

The firm shall provide on-site field inspection of the bridge painting project. The inspector(s) will use paint inspection instruments; visual inspection and industry standards to inspect the contractors work and enforce the Kentucky Standard Specifications and Special Notes. The inspector(s) shall keep complete and accurate daily records of all work performed and the materials used in accordance with the Division of Construction Guidance Manual.

The inspections will include but not be limited to: inspect all work for acceptance, document work activities, and complete daily reports, provide visual and instrument inspections of surface preparation, and coatings applications to ensure conformance to applicable specifications, containment and emissions monitoring, monitor work for compliance with KYOSAHA, OSHA, EPA, and state guidelines as specified.

The firm must provide an adequate number of inspectors to provide complete quality assurance field inspections. The inspectors will have successfully completed one of the following certifications: SSPC-BCI Level 1 or NACE CIP Level 1 and maintain their qualification for the duration of the project. The inspector(s) must demonstrate experience and knowledge of on-site bridge painting inspection and recordkeeping. The inspector(s) must be capable of handling the physical requirements needed to access and perform arms-length inspection of the entire project structure.

STRUCTURAL STEEL FABRICATION INSPECTION - The inspection will include performing all radiography, ultrasonic, magnetic particle and dye penetrate testing of welds as required and visual inspection to insure fabrication in accordance with applicable specifications Level Two nondestructive testing inspectors for magnetic particle and ultrasonic or radiographic testing. Consultant engineering firms must have a minimum of one (1) licensed professional engineer who can demonstrate knowledge and experience in welding theory, techniques, procedures, and inspections. Licensure in Kentucky is not necessarily required.

CONSTRUCTION SCHEDULING/CLAIMS ANALYSIS – The Consultant shall provide analysis consisting of construction contract claims and schedules to define issues and establish strategy of defense of claim; preparation and documentation of reports, graphics, charts, exhibits, and schedules; calculation and

documentation of delays, recoverable damages, loss of productivity, inefficiencies, and other causes of claims.

Key staff members of the firms should consist of civil engineers, attorneys and certified public accountants experienced in claims review and evaluation. Consultant personnel must have at least five (5) years of experience in claim review. The firm must have a minimum of one (1) licensed professional engineer who can demonstrate knowledge and experience in computerized Highway construction project critical path scheduling. Engineers must be licensed, but not necessarily in Kentucky.

(REVISED 1/17)

Division of Environmental Analysis
(502-564-7250)

FISHERIES

Applicants must demonstrate professional qualification for Fisheries by providing evidence of a Federal Recovery Permit for federally-listed fish species in Kentucky or, submitting documentation that details education and work experience as follows:

EDUCATION GRADUATE AND UNDERGRADUATE TRANSCRIPTS REQUIRED
BS in Biology or Environmental Science including thirty (30) semester hours in biology with 3 three-hour courses related to fisheries such as fisheries biology, limnology, fisheries management, fisheries science, ecology, and ichthyology.*

QUALIFYING EXPERIENCE PRESENT CURRICULUM VITAE
4 years with a BS
2 years with an MS
2 years with a Ph.D**

Qualifying experience is considered to be work having to do with the ecology or biology of freshwater fish.

It must include the following:

1. A field study, publication or presentation at a scientific meeting demonstrating a knowledge of the taxonomy, sampling and ecology of freshwater fish.
2. One year experience in the assessment of impacts of construction projects on aquatic life, including mitigation measures.
3. Work indicating a knowledge of Kentucky and Federal rare, threatened, and endangered species of freshwater fish.

EQUIPMENT LIST

1. Taxonomic references sufficient to identify the fishes of Kentucky to species level.
2. Seines.

* Experience may substitute for education in exceptional cases if expertise in area can be proven by written examples of work.

** Ph.D. dissertation may substitute for (1) one year's experience if it involved the biology or ecology of freshwater fish.

(REVISED 1/17)

FRESHWATER MACROINVERTEBRATES

EDUCATION GRADUATE AND UNDERGRADUATE TRANSCRIPTS REQUIRED
BS in Biology or Environmental Science including thirty (30) semester hours in biology with 3 three-hour courses related to the taxonomy and biology of macroinvertebrates of freshwater lakes and streams and 2 three-hour courses related to aquatic biology or aquatic ecology.*

QUALIFYING EXPERIENCE PRESENT CURRICULUM VITAE
4 years with a BS
2 years with an MS
2 years with a Ph.D**

Qualifying experience is considered to be work having to do with the ecology or biology of freshwater invertebrates.

It must include the following:

1. A field study, publication or presentation at a scientific meeting demonstrating a knowledge of the taxonomy, sampling, and ecology of freshwater invertebrates.
2. One year experience in the assessment of impacts of construction projects on aquatic life, including mitigation measures.
3. Work indicating a knowledge of Kentucky and Federal rare, threatened, and endangered species of aquatic invertebrates. Documentation of Federal Recovery Permits held by the applicant for freshwater macroinvertebrates should be provided in the application for review.

EQUIPMENT LIST

1. Taxonomic references sufficient to identify most aquatic invertebrates to at least genus and pelecypods, gastropods, and crustaceans to species. If an expert is to be used in the identification of certain groups, his/her name and the group(s) to be identified should be specified.
2. Dip net with fine mesh and/or a surber sampler.
3. Stereo dissection microscope.

* Experience may substitute for education in exceptional cases if expertise in area can be proven by written examples of work.

** Ph.D. dissertation may substitute for (1) one year's experience if it involved the biology or ecology of aquatic invertebrates.

(REVISED 1/17)

WATER QUALITY

EDUCATION GRADUATE AND UNDERGRADUATE TRANSCRIPTS REQUIRED
BS in Chemistry, Biology, Environmental Science, Sanitary Engineering, Geology; including 12 semester hours in chemistry-related courses including (1) one course related specifically to water chemistry of streams and lakes.*

QUALIFYING EXPERIENCE PRESENT CURRICULUM VITAE
4 years with a BS
2 years with an MS
2 years with a Ph.D**

Qualifying experience is considered to be work having to do with the chemistry of freshwater.

It must include the following:

1. A field study, publication, or presentation at a scientific meeting demonstrating knowledge of the sampling and determination of water chemistry of freshwater streams and/or lakes.
2. One-year experience in the assessment of impacts of construction projects on water chemistry, including measures to reduce these impacts.

EQUIPMENT LIST
Capacity to perform the following tests:

- Color
- Turbidity
- PH
- Iron
- Nitrate Nitrogen
- Alkalinity
- Acidity
- Chloride
- Ammonia Nitrogen
- Sulfate
- Hardness
- Specific Conductance
- Orthophosphate
- Dissolved Oxygen
- Discharge

* Experience may substitute for education in exceptional cases if expertise in area can be proven by written examples of work.

** Ph.D. dissertation may substitute for (1) one year's experience if it involved the biology or ecology of plants.

(REVISED 1/17)

BOTANY

Applicants must demonstrate professional qualification for Botany by providing evidence of a Federal Recovery Permit for federally-listed plant species in Kentucky or, submitting documentation that details education and work experience as follows:

EDUCATION GRADUATE AND UNDERGRADUATE TRANSCRIPTS REQUIRED
BS in Biology or Environmental Science including thirty (30) semester hours in biology with 3 three-hour courses related to botany such as plant taxonomy, plant ecology, dendrology, botany, plant physiology, silviculture, etc.*

QUALIFYING EXPERIENCE PRESENT CURRICULUM VITAE
4 years with a BS
2 years with an MS
2 years with a Ph.D.**

Qualifying experience is considered to be work having to do with the ecology or biology of plants.

It must include the following:

1. A field study, publication or presentation at a scientific meeting demonstrating knowledge of the taxonomy, sampling, and ecology of plants.
2. One (1) year experience in the assessment of impacts of construction projects on plants and plant communities, including mitigation measures.
3. Work indicating a knowledge of Kentucky and Federal rare, threatened and endangered species of plants.

EQUIPMENT LIST

1. Taxonomic references sufficient to identify plants to species level.
2. Plant press.

* Experience may substitute for education in exceptional cases if expertise in area can be proven by written examples of work.

** Ph.D. dissertation may substitute for (1) one year's experience if it involved the biology or ecology of plants.

(REVISED 1/17)

TERRESTRIAL ZOOLOGY

EDUCATION GRADUATE AND UNDERGRADUATE TRANSCRIPTS REQUIRED
BS in Biology or Environmental Science including thirty (30) semester hours in biology with 3 three-hour courses related to terrestrial zoology such as vertebrate zoology, wildlife management, wildlife ecology, mammalogy, herpetology, or ornithology.*

QUALIFYING EXPERIENCE PRESENT CURRICULUM VITAE
4 years with a BS
2 years with an MS
2 years with a Ph.D.**

Qualifying experience is considered to be work having to do with the ecology or biology of terrestrial animals.

It must include the following:

1. A field study, publication or presentation at a scientific meeting demonstrating knowledge of the taxonomy, sampling, and ecology of terrestrial animals.
2. One (1) year experience in the assessment of impacts of construction projects on terrestrial animals and wildlife habitat including mitigation measures.
3. Work indicating a knowledge of Kentucky and Federal rare, threatened and endangered species of terrestrial animals. Documentation of relevant Federal Recovery Permits held by the applicant should be provided in the application for review.

EQUIPMENT LIST

1. Taxonomic references sufficient to identify animals to species level.
2. Mist nets.
3. Caving lights.
4. Small mammal traps.

* Experience may substitute for education in exceptional cases if expertise in area can be proven by written examples of work.

** Ph.D. dissertation may substitute for (1) one year's experience if it involved the biology or ecology of terrestrial animals.

(REVISED 1/17)

WETLANDS

Applicants must demonstrate professional qualification for Wetlands by providing evidence of certification as a Professional Wetlands Scientist as determined by the Society of Professional Wetland Scientists or, submitting documentation that details education and work experience as follows:

EDUCATION GRADUATE AND UNDERGRADUATE TRANSCRIPTS REQUIRED
BS in Biology or related to natural sciences including thirty (30) semester hours in biology. With at least eight (8) semester hours (or six (6) semester hours with labs) of courses related to botany and flora, one 3-hour course in ecological analyses, habitat assessments, or plant community assessments. At least 1 three-hour course in vertebrate biology or classification such as ichthyology, herpetology, entomology, ornithology, or mammalogy.*

REQUIRED TRAINING - CERTIFICATES REQUIRED
Training in the application of the Corps of Engineers Wetland Delineation Manual, 1987. Training must satisfy pre-requisite requirements for the Wetland Delineator Certification Program.

QUALIFYING EXPERIENCE PRESENT CURRICULUM VITAE –
Written examples required three (3) years of experience in practicing wetland delineation and mitigation under the US ACE supervised 404 program.

NOTE: MS and Ph.D. degrees may substitute for experience for up to two (2) years, only if the degree was completed with thesis or (2) two years of research work related to wetlands. An M.A. degree may qualify for one (1) year experience if it relates to wetlands.

Qualifying experience applies to the individual and is considered to be work having to do with the classification, delineation, and/or mitigation of jurisdictional wetlands.

Qualifying experience must include the following:

- Project Leader on US ACE approved or reviewed wetland delineation projects; may include any example where wetlands were determined or delineated and underwent US ACE review; and,
- Project Leader of field study and author of a publication demonstrating competence in sampling and analytical procedures involving wetlands; or,
- Project Leader for wetland mitigation involving creation, restoration or enhancement of wetlands used in 404 permits; or,
- Project Leader for monitoring studies and reports of wetlands that have been reviewed and approved by US ACE.

EQUIPMENT AND REFERENCE MATERIAL
List Equipment and Material Sampling equipment necessary for wetlands analysis shall include:

(1) a soil probe, auger, or space, for soil samples,
(2) Munsell soil color chart for hydric soil determinations,
(3) taxonomy reference books for plant identification,
(4) the USFWS publication entitled National List of Plant Species that Occur in Wetlands: Kentucky edition or Region 1 Northeast,
(5) plant press and collection bags, and
(6) stereo dissection microscope for plant identification.

* Education cannot substitute entirely for experience requirement. MS and Ph.D. degrees in the area of wetland may qualify for up to two (2) year's of experience. MA degrees may qualify up to one (1) year experience.

** Education and experience cannot be substituted for training.

(REVISED 1/17)

PREHISTORIC AND HISTORIC ARCHAEOLOGY

PROFESSIONAL QUALIFICATIONS

The principal investigator is responsible for the quality of the archaeological work and resulting report. All Section 106 related investigations should be carried out under the direction of a principal investigator. He or she must ensure that all other project personnel have sufficient experience to perform assigned duties.

Principal Investigator. The Secretary of the Interior's Standards for Professional Qualifications in Archaeology are those used by the National Park Service and have been previously published in the Code of Federal Regulations, 36 CFR Part 61. These are quoted below:

> "The qualifications define minimum education and experience required performing identification, evaluation, registration, and treatment activities. In some cases, additional areas or levels of expertise may be needed, depending upon the complexity of the task and the nature of the historic properties involved. In the following definitions a year of full-time professional experience need not consist of a continuous year of full-time work but may be made up of discontinuous periods of full-time work adding up to the equivalent of a year of full-time experience."

Archaeology

The minimum professional qualifications in archaeology are a graduate degree in archaeology, anthropology, or closely related field plus:

- At least (1) one year of full-time professional experience or equivalent specialized training in archaeological research, administration or management;
- At least (4) four months of supervised field and analytic experience in general North American archaeology; and
- Demonstrated ability to carry research to completion.

In addition to these minimum qualifications, a professional in Prehistoric Archaeology shall have at least (1) one year of full-time professional experience at a supervisory level in the study of archaeological resources of the prehistoric period. A professional in Historic Archaeology shall have at least (1) one year of full-time professional experience at a supervisory level in the study of archaeological resources of the historic period.

In addition to the previous criteria, the SHPO requires that the Principal Investigator have twelve (12) months of professional field experience in the eastern United States, of which at least three (3) months must be in Kentucky or the Ohio Valley (southern Ohio, southern Indiana, southern Illinois, western West Virginia, Kentucky, and Tennessee). In some instances, up to two months of analytical and report writing experience in the Ohio Valley may be substituted for field experience. Applicants must demonstrate that SHPO qualification requirements have also been satisfied.

Field Supervisors
The Transportation Cabinet also qualifies applicants to direct field work, and to complete analytical and report writing as a primary author under the supervision of an approved Principal Investigator. Qualifications for field supervisors are graduated, as the tasks and skills required for each level of investigation become increasingly complex. Please note that for the following, as for the Principal Investigator, experience is measured in actual days of laboratory or field experience, with five days in the field being one week of experience, four weeks being a month of experience, and so on.

Survey Projects (Phase I)

1. An undergraduate degree in Anthropology or Archaeology or a closely related field;
2. Four (4) months minimum of archaeological laboratory experience;
3. One (1) year field experience in North American archaeology; and
4. Three (3) months of field experience in Kentucky or the Ohio Valley, of which two months may be substituted with analytical experience or report writing within the Ohio Valley.

Testing Projects (Phase II)

1. Two (2) academic years of graduate school in Anthropology or closely related field;
2. Demonstrated ability to analyze artifacts and write reports;
3. One (1) year field experience in North American archaeology, of which at least a combined four (4) months must be excavation (evaluation and/or mitigation);
4. One (1) month as a Field Supervisor on Phase I projects;
5. Three (3) months of field experience in Kentucky or the Ohio Valley, of which two months may be substituted with analytical experience or report writing within the Ohio Valley.

Mitigation Projects (Phase III)

1. Graduate degree in Anthropology or Archaeology or closely related field;
2. Demonstrated ability to analyze artifacts and write reports;
3. One (1) year field experience in North American archaeology, of which at least a combined six (6) months must be excavation (evaluation and/or mitigation);
4. Four (4) months as a Field Supervisor on Phase I and Phase II investigations; and
5. Three (3) months of field experience in Kentucky or the Ohio Valley, of which two months may be substituted with analytical experience or report writing within the Ohio Valley.

(REVISED 1/17)

NOISE IMPACT ANALYSIS

EDUCATION
B.S. in Engineering, Environmental Sciences, or BA with course work related to transportation-related course work. At least one (1) semester hour of computer sciences.

QUALIFYING EXPERIENCE
One (1) year of co-authored base studies with BS or BA

Six (6) months of co-authored based studies with MS, MA, or Ph.D.

Qualifying experience is considered to be work associated with noise impact assessment and modeling techniques and should include the following:

- Research or documentation, which demonstrates knowledge of noise, impacts assessment, and engineering principles. Attendance of noise impact assessment and abatement courses offered by FHWA or independent consultants are required. Experience in field noise sampling along with collaboration of documentation required for submittal of a noise impact analysis. Including noise levels and abatement measures as required by FHWA 23 CFR Part 772 "Procedures for Abatement of Highway Traffic Noise and Construction Noise."

EQUIPMENT

- FHWA Traffic Noise Model (23 CFR 772.9)
- Computer hardware utilized for analyses
- Noise level meter or analyzer

AIR QUALITY ANALYSIS

EDUCATION
BS in Engineering, Environmental Sciences, or Meteorology; including twelve (12) semester hours of air quality-related courses, (i.e. meteorology, engineering principles, or dispersion modeling). At least three (3) semester hours of computer sciences. BA With course work related to transportation planning.

QUALIFYING EXPERIENCE
4 years with a BS or BA
2 years with an MS or MA
2 years with a Ph.D. (I year if research or dissertation related to air quality principles)

Qualifying experience is considered to be work associated with air quality principles and modeling techniques and should include the following:

- Research or documentation, which demonstrates knowledge of air pollution meteorology, dispersion modeling, and engineering principles.
- Affiliation with a professional society related to air quality.
- One (1) year experience in the assessment of impacts of construction projects on ambient air quality including mitigation measures as required by the Clean Air Act Amendments of 1990.
- Work indicates knowledge of Kentucky and Federal Air Quality Regulations.

EQUIPMENT
State of the art computer models, which consists of:

A. Mobile Source Emissions Model: MOBILE5a
B. Dispersion Model: CAL3QHC
C. F-I Computer hardware utilized for analyses.

STREAM MITIGATION

A firm shall have at least one (1) engineer licensed in Kentucky who will be directly involved in project development, and at least one (1) person with training up to Rosgen Level 4. (The Rosgen method is a classification-based natural stream design approach that incorporates elements of analog and empirical design methods. It is the most commonly used scheme for the classification of streams. The Kentucky Division of Water, a state regulatory agency has adopted Rosgen's classification scheme. A series of four (4) training courses (Levels I to IV) are offered by Mr. Rosgen). The personnel employed by the firm shall have expertise in natural stream channel design through previous experience, specialized training, education, or a combination thereof. The overall qualification of a firm to perform natural stream channel design will be evaluated on the basis of past performance whether for the Transportation Cabinet or another agency. A firm requesting prequalification solely based on work with other agencies shall provide sufficient information to allow for an evaluation of past performance with that agency. This information must include the name of an individual within that agency directly responsible for the project and may include performance evaluation documents. Equipment shall be adequate to provide plans and studies utilizing computer drafting and digital terrain modeling techniques for an average type of project and to a format specified by the Cabinet. Sufficient financial information shall be provided to demonstrate the stability of the firm during the pre-qualification period.

Projects are typically divided into a data collection phase and design phase. A firm shall have the capability to provide the following products:

Stream Data Collection - Document stream conditions for reference streams, streams to be restored, or streams that will be disturbed by road construction projects. Product of Stream Data Collection portion of work is a report containing the following information:

- Location map drawn to scale, with any notes necessary to help find the site
- Stream and watershed areas accurately delineated on USGS 7 1/2' Quad maps
- Watershed condition and hydrologic characteristics
- Scale drawings of stream profile and cross-sections
- Legible plan view sketches of stream area
- Photographs referenced to the plan view (digital photos available upon request)
- Description of existing riparian zone condition
- Stream Ecology assessment -- May be qualitative, or quantitative depending on stream order
- Tabulated survey notes
- Description of channel substrate, banks material, and bank condition
- Tabular and graphical results of pebble counts
- Tabular and graphical results of bar samples
- Estimates of baneful depth with supporting field evidence
- Estimates of baneful depth based on hydrologic and hydraulic analyses
- Morphological (Rosgen) stream classification

Natural Stream Design - Provide stream channel construction/restoration plans in the detail required for construction of the project. The format for drawings shall conform to cabinet CADD standards. Product of work is a set of construction plans and reports containing the following elements:

- Scale drawings showing the proposed work in plan, cross-section and profile
- Construction detail drawings as needed for clarity
- Planting details
- Description of measures to be used for creation of aquatic riparian habitat
- Description of material is used for in-stream habitat and for bank stabilization
- Monitoring plan, as requested
- Summary report documenting all design criteria, analyses and computations

In addition to the above requirements, the firm shall have personnel that meet each of the pre-qualification requirements below:

- Fisheries
- Freshwater Macroinvertebrates
- Water Quality
- Botany
- Some projects will require prequalification in Surveying and Geotech.

SOCIO-ECONOMIC ANALYSIS

EDUCATION

Bachelor's degree with a major, minor; emphasis, or area of concentration in planning; or a bachelor's degree in transportation or a closely related field. Closely related fields include administration, business, economics, geology, geography, political science, and others.

QUALIFYING EXPERIENCE

One (1) year with a bachelor's degree.

Qualifying experience is considered to be work to do with urban and regional planning or socio-economic impact analysis.

Work indicates a knowledge and familiarity with FHWA guidelines and regulations relative to socioeconomic analyses and community impact assessments of transportation projects.

Work on a community comprehensive plan including land use planning, population, and economic base study analyses, etc.

CONTINUING EDUCATION

Courses in Relocation, Right-of-Way, Community Impact Assessments, Environmental Justice, Public Involvement, Context Sensitive Design, Secondary and Cumulative Impacts, and related topics

CULTURAL-HISTORIC ANALYSIS

PROFESSIONAL QUALIFICATIONS

The Secretary of the Interior's Standards for Professional Qualifications in History and Architectural History are those used by the National Park Service and they have been previously published in 36 CFR Part 61. Familiarity with Section 106 is also required. In order to be qualified in history and/or architectural history, the following education and experience should be met:

History: The minimum professional qualification in history is a graduate degree in history or a closely related field, or a bachelor's degree in history, or a closely related field, plus one (1) of the following:

(a) At least two (2) years of full-time experience in research, writing, teaching, interpretation, or other demonstrable professional activity with an academic institution, historical organization or agency, museum, or other professional institution; or

(b) Substantial contribution through research and publication, to the body of scholarly knowledge in the field of history.

Architectural History: The minimum professional qualifications in architectural history are a graduate degree in architectural history, art history, historic preservation, or closely related field, with course work in American architectural history; or a bachelor's degree in architectural history, art history, historic preservation, or closely related field, plus one (1) of the following:

(a) At least two (2) years of full-time experience in research, writing, or teaching in American architectural history or restoration architecture with an academic institution, historical organization or agency, museum, or other professional institution; or

(b) Substantial contribution through research and publication to the body of scholarly knowledge in the field of American architectural history.

SPECIFIC EXPERIENCE

Also in order to be qualified; experience and/or training and knowledge with FHWA guidelines and regulations relative to cultural-historic architectural analyses of transportation projects must be demonstrated. This includes familiarity with the Section 106 process and Section 4(f).

(REVISED 11/98)

EIS WRITING AND COORDINATION

EDUCATION
Graduate of a college or university with a bachelor's degree within the field of environmental analysis or a closely related field.

QUALIFYING EXPERIENCE
4 years with a BS
2 years with an MS/MA

Qualifying experience is considered to be work and training having to do with the preparation and coordination of environmental assessments and environmental impact statements.

It should include, or be demonstrated by the following:

1. Specific training in EA/EIS preparation, particularly NHI/FHWA training courses;
2. Work indicating one's knowledge and familiarity with FHWA guidelines and regulations in regard to EA/EIS writing and coordination;
3. Specific experience in EA/EIS preparation (as single or principal author);
4. Specific examples of EA/EIS'S authored (by project identification and client); or
5. List other experience with technical writing and/or special environmental studies prepared.

(REVISED 11/98)

HAZARDOUS MATERIALS (HAZMAT) AND UNDERGROUND STORAGE TANKS (UST)

EDUCATION

Bachelor of Science in Chemistry, Chemical Engineering, Geology, Hydrogeology, Industrial Hygiene, or closely related field of study.

QUALIFYING TRAINING

Minimum 40-Hour Waste Site Worker Protection training to comply with OSHA CFR 1910.120(e)(2).

Include proof of current certification, (i.e., current 40-hour certification and/or current 8-hour annual refresher course certification) for each individual listed to conduct any work in the UST or HAZMAT area.

LICENSURE

License as a Professional Geologist or Professional Engineer

QUALIFYING EXPERIENCE

The applicant shall identify the personnel who will be performing each phase of work for which prequalification is sought. Qualifying experience is considered to include on-site experience and report development as appropriate for conducting each phase of work. The applicant shall demonstrate competence for each area of prequalification requested in accordance with the criteria outlined.

UST and HAZMAT Preliminary Site Assessments (Phase I):

The applicant shall demonstrate proof of personnel's experience conducting PSAs with submittal of a detailed vitae for each individual identified in support of the firm's prequalification in this area. The description shall identify the specific work conducted by the individual on listed projects. Individuals seeking approval shall have authored a minimum of three (3) PSA reports for projects within Kentucky. The application shall also provide a sample of a PSA, authored by the individual seeking approval and developed in accordance with ASTM E1527-13 and compliant with the Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312).

Underground Storage Tanks (UST) Closure Assessment:

The applicant shall demonstrate proof of personnel's experience developing Closure Assessment Reports (CAR) with submittal of a detailed vitae for each individual identified in support of the firm's prequalification in this area. The applicant shall submit a copy of letters issued by the Kentucky Division of Waste Management, Underground Storage Tank Branch for a minimum of two projects, indicating acceptance of a CAR. Vitae for individuals identified to conduct this work shall include the projects documented by the letters. The reports shall have

been authored by those seeking prequalification approval. The prequalification application shall also provide a copy of a sample CAR, authored by each individual identified in the application for this area of work.

Underground Storage Tanks (UST) Site Investigations (Phase II):
The applicant shall demonstrate proof of personnel's experience developing Site Investigation Reports with submittal of a detailed vitae for each individual identified in support of the firm's prequalification in this area. The applicant shall submit a copy of letters issued by the Kentucky Division of Waste Management, Underground Storage Tank Branch for a minimum of two projects, indicating acceptance of a Site Investigation Report. Vitae for individuals identified to conduct this work shall include the projects documented by the letters. The reports shall have been authored by individuals identified in support of the firm's prequalification in this area. The prequalification application shall also provide a copy of a sample Site Investigation Report, authored by each individual identified in the application for this area of work.

Underground Storage Tanks (UST) Corrective Action:
The applicant shall demonstrate proof of personnel's experience developing and implementing corrective actionwith submittal of a detailed vitae for each individual identified in support of the firm's prequalification in this area. The applicant shall submit a copy of letters issued by the Kentucky Division of Waste Management, Underground Storage Tank Branch for a minimum of two projects, indicating acceptance of a Corrective Action Plan and a Corrective Action Report (No Further Action letter). Vitae for individuals identified to conduct this work shall include the projects documented by the letters. The reports shall have been authored by individuals identified in support of the firm's prequalification in this area. The prequalification application shall also provide a copy of a sample Corrective Action Plan and a Corrective Action Report, authored by each individual identified in the application for this area of work.

Hazardous Materials (HAZMAT) Site Investigation (Phase II):
A minimum of two (2) years of experience conducting Site Investigation fieldwork and reporting for sites located in Kentucky is required.

The applicant shall demonstrate proof of personnel's experience conducting Site Investigations with submittal of a detailed vitae for each individual identified in support of the firm's prequalification in this area. The applicant shall submit a copy of letters issued by the Kentucky Division of Waste Management for a minimum of two projects, indicating acceptance of a Site Investigation Report. Vitae for individuals identified to conduct this work shall include the projects documented by the letters. The reports shall have been authored by individuals identified in support of the firm's prequalification in this area. The prequalification application shall also

provide a copy of a sample Site Investigation Report, authored by each individual identified in the application for this area of work.

Hazardous Materials (HAZMAT) Corrective Action:
A minimum of two (2) years of experience developing Corrective Action Plans for sites located in Kentucky is required.

The applicant shall demonstrate proof of personnel's experience developing and implementing corrective action with submittal of a detailed vitae for each individual identified in support of the firm's prequalification in this area. The applicant shall submit a copy of letters issued by the Kentucky Division of Waste Management for a minimum of two projects, indicating acceptance of a Corrective Action Plan and a Corrective Action Report. Vitae for individuals identified to conduct this work shall include the projects documented by the letters. The reports shall have been authored by individuals identified in support of the firm's prequalification in this area. The prequalification application shall also provide a copy of a sample Corrective Action Plan and Corrective Action Report, authored by each individual identified in the application for this area of work.

(REVISED 1/17)

Division of Highway Design
(502-564-3280)

RURAL ROADWAY DESIGN – The purpose of this prequalification is to determine if a firm has the capability to design rural roadway projects. The firm shall submit a stand-alone prequalification document or a distinct separate section of a prequalification document addressing the following requirements:

1. **Company**
   a. Sufficient financial information should be provided to demonstrate the stability of the firm during the prequalification period. Financial Information should include but is not limited to the following:
      i. Finance Statement sheet (Balance of Assets and Liabilities)
      ii. Insurance
   b. Contact information (name, email, phone number) for a person in your firm to answer questions about the application

2. **Personnel**
   a. The firm must demonstrate that current staff has the knowledge and skills to design a roadway in a rural context and develop a set of contract plans. Provide a resume for each individual that should be considered for this category. The firm must have at least two engineers licensed in Kentucky with highway/transportation experience. Each resume should contain the following:
      i. Educational history
      ii. Professional certifications
      iii. Applicable training courses
      iv. Applicable skills
      v. Rural roadway projects worked on in the last ten years with current or former firm. For each project include:
         1. Project location, route, and description
         2. Firm name (if other than applicant)
         3. Specific responsibility and roles on each project (e.g. lead designer, detailer, project manager, traffic modeler, public involvement, etc.)
      vi. Other projects worked on that may be applicable

3. **Projects Completed by Firm**
   a. The firm shall provide a minimum of three projects completed within the last ten years to show that they have the capability to design a roadway in a rural context and develop a set of contract plans. The information for each project shall include the following:
      i. A project description, which should include the following:
         1. Client and reference contact information
         2. Project location, route, length, and description including project purpose and need

3. Standards used for project design
4. Firm's role on the project (prime or subconsultant and work performed)
5. Current staff names involved with the project and roles
6. Completion date of design
7. Firm's Design Fee
8. Performance evaluation documents or letters (if applicable)

4. Equipment and Software

a. The firm should have adequate resources to provide plans and studies utilizing computer graphics and digital terrain modeling techniques for an average type of project and to a format specified by in KYTC's CADD standards. The following shall be listed:
   i. CADD and DTM software currently owned. Note: the firm will be required to own Microstation and Inroads and have staff trained on each to qualify for KYTC work.
   ii. Additional design software (eg Autoturn) owned by firm
   iii. Specialty hardware used for highway design work

Conditional Approval for Small Rural Roadway Design Projects:

1. The firm may be prequalified conditionally for rural roadway design if it demonstrates the capability to design small rural roadway projects with an estimated design fee of less than $300,000. The firm shall follow the same submittal process described above. This prequalification may be applicable to companies that:
   1. Have only one (1) engineer licensed in Kentucky
   2. Have little or no previous experience designing and delivering contract plans on large rural projects
   3. Shows adequate applicable project design experience on small rural projects
   4. Does not have the capabilities or resources to manage large rural projects

URBAN ROADWAY DESIGN – The purpose of this prequalification is to determine if a firm has the capability to design urban roadway projects. The firm shall submit a stand-alone prequalification document or a distinct separate section of a prequalification document addressing the following requirements:

1. **Company**
   a. Sufficient financial information should be provided to demonstrate the stability of the firm during the prequalification period. Financial Information should include but is not limited to the following:
      i. Finance Statement sheet (Balance of Assets and Liabilities)
      ii. Insurance
   b. Contact information (name, email, phone number) for a person in your firm to answer questions about the application

2. **Personnel**
   a. The firm must demonstrate that current staff has the knowledge and skills to design a roadway in an urban context and develop a set of contract plans. Provide a resume for each individual that should be considered for this category. The firm must have at least two engineers licensed in Kentucky with highway/transportation experience. Each resume should contain the following:
      i. Educational history
      ii. Professional certifications
      iii. Applicable training courses
      iv. Applicable skills
      v. Urban roadway projects worked on in the last ten years with current or former firm. For each project include:
         1. Project location, route, and description
         2. Firm name (if other than applicant)
         3. Specific responsibility and roles on each project (e.g. lead designer, detailer, project manager, traffic modeler, public involvement, etc.)
      vi. Other projects worked on that may be applicable

3. **Projects Completed by Firm**
   a. The firm shall provide a minimum of three projects completed within the last ten years to show that they have the capability to design a roadway in an urban context and develop a set of contract plans. The information for each project shall include the following:
      i. A project description, which should include the following:
         1. Client and reference contact information
         2. Project location, route, length, ADT, and description including project purpose and need
         3. Standards used for project design
         4. Firm's role on the project (prime or subconsultant and work performed)

5. Current staff names involved with the project and roles
6. Completion date of design
7. Firm's Design Fee
8. Performance evaluation documents or letters (if applicable)

4. Equipment and Software

a. The firm should have adequate resources to provide plans and studies utilizing computer graphics and digital terrain modeling techniques for an average type of project and to a format specified by in KYTC's CADD standards. The following shall be listed:
   i. CADD and DTM software currently owned. Note: the firm will be required to own Microstation and Inroads and have staff trained on each to qualify for KYTC work.
   ii. Additional design software (eg Autoturn) owned by firm
   iii. Specialty hardware used for highway design work

Conditional Approval for Small Urban Roadway Design Projects:

1. The firm may be prequalified conditionally for urban roadway design if it demonstrates the capability to design small urban roadway projects with an estimated design fee of less than $300,000. The firm shall follow the same submittal process described above. This prequalification may be applicable to companies that:
   1. Have only one (1) engineer licensed in Kentucky
   2. Have little or no previous experience designing and delivering contract plans on large urban projects
   3. Shows adequate applicable project design experience on small urban projects.
   4. Does not that the capabilities or resources to manage large urban projects

SURVEYING – The purpose of this prequalification is to determine if a firm has the capability to survey projects for KYTC. The firm shall submit a stand-alone prequalification document or a distinct separate section of a prequalification document addressing the following requirements:

1. **Personal**
   a. The firm must demonstrate that the current staff has the knowledge and skills to survey for KYTC. Provide a resume for each individual that should be considered for this category. The firm must have at least one (1) professional land surveyor licensed in Kentucky. Each resume should contain the following:
      i. Educational history
      ii. Professional certifications
      iii. Applicable training courses
      iv. Applicable skills
      v. Surveying projects worked on in the last ten years with current or former firm. For each project include:
         1. Project location, route, and description
         2. Firm name (if other than applicant)
         3. Specific responsibility and roles on each project
      vi. Other projects worked on that may be applicable
   b. If the company uses UAS (Unmanned Aircraft Systems) to survey, then list number of certified UAS pilots, and all certifications that go along with UAS operations. Any use of this technology will follow FAA (Federal Aviation Administration) regulations.
   c. The company shall provide its firm`s Kentucky State Board Professional Land Surveyors` License number.

2. **Equipment** - Adequate equipment to provide digital data and computer graphics necessary for modern surveying practices must be available. In this submittal, list all major company assets that are available to complete surveying projects for KYTC.

3. **Projects**
   a. The firm shall provide a minimum of three projects completed within the last ten years to show that they are capable of surveying projects for KYTC. The information for each project shall include the following:
      i. If the project was a roadway:
         1. Location
         2. Route
         3. Linear feet
      ii. If the project was a site:
         1. Location
         2. Site
         3. Size of site
      iii. If the project is out of state:

1. Include the contact information for an individual within that client that was directly responsible for that project.
2. The following is optional:
    a. Performance evaluation documents
    b. Letters from the agency addressing past performance or other similar documents

iv. For all surveying projects:
1. Number of data points
2. Method of surveying
3. Estimated Completion date
4. Brief description of project
5. Company`s Role: Prime or Subcontractor
6. Description of Company`s work
7. Cost
8. Client

If any other firm is hired to subcontract the installation of monumentation and perform control surveys, it is required that firm be on the KYTC prequalification list.

PHOTOGRAMMETRY AND RELATED SERVICES – The purpose of this prequalification is to determine if a firm has the capability to conduct photogrammetry and related services for KYTC. The firm shall submit a stand-alone prequalification document or a distinct separate section of a prequalification document, especially if the firm is prequalifying for surveying, addressing the following requirements:

1. **Personal**
   a. The firm must demonstrate that current staff has the knowledge and skills to provide photogrammetry and related services. Provide a resume for each individual that should be considered for this category. The firm must have at least one certified photogrammetrist who shall be on staff and be responsible for the coordination of work on projects. Each resume should contain the following:
      i. Educational history
      ii. Professional certifications
      iii. Applicable training courses
      iv. Applicable skills
      v. Photogrammetry and related services worked on in the last ten years with current or former firm. For each project include:
         1. Project location, route, and description
         2. Firm name (if other than applicant)
         3. Specific responsibility and roles on each project
      vi. Other projects worked on that may be applicable
   b. List number of certified pilots (Fixed Wing, and/or Helicopter)
   c. If the company uses UAS to survey, then list number of certified UAS pilots, and all certifications that go along with UAS operations. Any use of this technology must follow FAA regulations.

2. **Equipment**
   a. A firm shall have the necessary equipment to produce photographic mapping in accordance with current Cabinet CADD standards and format. In this submittal, list all major company assets that are available to complete photogrammetry projects for KYTC.

3. **Projects**
   a. The firm shall provide a minimum of three projects completed within the last ten years to show that they have the capability of conducting photogrammetry and related services for KYTC. The information for each project shall include the following:
      i. If the project was a roadway:
         1. Location
         2. Route
         3. Linear feet
      ii. If the project was a site:
         1. Location
         2. Site

3. Size of site

iii. If the project is out of state:
   1. Include the contact information for an individual within that client that was directly responsible for that project.
   2. The following is optional:
      a. Performance evaluation documents
      b. Letters from the agency addressing past performance or other similar documents.

iv. For all projects:
   1. Number of data points
   2. Method
   3. Estimated Completion date
   4. Brief description of project
   5. Company`s Role: Prime or Subcontractor
   6. Description of Company`s work
   7. Cost
   8. Client

Note: If another firm is hired to subcontract the installation of monumentation and perform control surveys for the photogrammetry process, that firm is required to be on the KYTC prequalification list for Surveying.

ADVANCED TRAFFIC ENGINEERING DESIGN AND MODELING - The purpose of this prequalification is to determine if a firm has the capability to perform advanced traffic engineering analysis for roadway design projects, including microsimulation and corridor signal analysis. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. **KYTC Basic Traffic Engineering Design Course**: At least one member of the firm must have attended the KYTC Basic Traffic Engineering Design course. Provide documentation for all staff that attended the course.

2. The firm must have at least one full-time staff member registered as a Professional Traffic Operations Engineer (PTOE). List the name(s) of individuals and date of certification.

3. Demonstrate staff experience in all of the following categories. Include a resume for each staff person that includes their specific training and role in applicable projects. There should be at least two projects represented for each category. Each applicable staff person should have a minimum of four years of experience in traffic engineering.
    a. Traffic Operations Analysis
        1. Roadway analysis
        2. Intersection analysis
        3. Freeway operations
    b. Access Management
    c. Traffic Control Devices
        1. Traffic signing and signalization
    d. Traffic Engineering Studies

4. **Signal Systems Operations:**
    a. Provide a resume for each staff member that has knowledge and experience in the design of traffic signal systems.
    b. List and describe projects in which staff applied signal system design concepts.
    c. Identify software owned by the firm and staff that has experience in applying that software for developing signal timing plans.
    d. Optionally, include experience in the operation, retiming, and maintenance of signal systems.

5. **Microsimulation Modeling:** A listing of preferred microsimulation software can be found on Highway Design's webpage under Resources » Software and Support.
    a. List microsimulation software packages owned by the firm.
    b. Provide a resume for each staff member that has knowledge and experience in microsimulation.

Include training and years of experience in using each software. Demonstrate staff member's proficiency in developing, calibrating, and using microsimulation models.

List at least two projects that current staff was involved in which microsimulation was used in the development of a highway design. Experience current staff had on projects with another firm or agency is acceptable. Include how the model was used to make project decisions and how it was used for public involvement (when applicable).

Renewal: KYTC will consider performance on past and current projects when deciding whether to approve a firm's request to renew prequalification status. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

Utility Design: Water and Sewer Level 1

The purpose of this prequalification is to determine if a firm has the capability to perform engineering design for the relocation of **water and sewer** utilities to accommodate roadway construction. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. The firm shall submit two or three projects that they have led the design for each of the below design elements. There shall be a full description of the work and a listing of applicable active employees with their role in the project. Each project should note whether the firm was the prime consultant or a sub consultant.
    a. **Gravity distribution sanitary sewer main**
    b. **Pressurized distribution water main**
    c. **Structures (manholes, valves, valve boxes, basin, retrained joints, thrust blocks)**
    d. **Water/Wastewater property service line**

2. The firm shall provide a one-page biography of active staff that will be used for KYTC initiated-projects. It shall have at least one Professional Engineer licensed in Kentucky with qualifying experience. The biography should list relevant training and experience. Experience should include pertinent utility projects only, the years the work was completed, and the individual's role in each project (i.e. project manager, designer, etc.) Experience for staff may include work with another firm or agency.

3. The firm shall demonstrate knowledge on use of utility company standards and requirements. It shall also demonstrate an understanding of easement width, description, and clearance requirements for the specified utility type.

Renewal: The decision by KYTC to approve a firm's request to renew prequalification status will be based on satisfactory performance on past and current projects. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

(ADDED 1/17)

Utility Design: Water and Sewer Level 2

The purpose of this prequalification is to determine if a firm has the capability to perform engineering design for the relocation of **water and sewer** utilities to accommodate roadway construction. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. The firm must be prequalified for Utility Design: Water and Sewer Level 1.

2. The firm shall submit two or three projects that they have led the design for each of the below design elements. There shall be a full description of the work and a listing of applicable active employees with their role in the project. Each project should note whether the firm was the prime consultant or a sub consultant.
   a. **Gravity transmission sanitary sewer main**
   b. **Force main sanitary sewer**
   c. **Pressurized transmission water main**
   d. **Transmission structure (manhole, box, basin) valve, and fitting**
   e. **Pump/lift station**

3. The firm shall provide a one-page biography of active staff that will be used for KYTC initiated-projects. It shall have at least one Professional Engineer licensed in Kentucky with qualifying experience. The biography should list relevant training and experience. Experience should include pertinent utility projects only, the years the work was completed, and the individual's role in each project (i.e. project manager, designer, etc.) Experience for staff may include work with another firm or agency.

4. The firm shall demonstrate knowledge on use of utility company standards and requirements. It shall also demonstrate an understanding of easement width, description, and clearance requirements for the specified utility type.

Renewal: The decision by KYTC to approve a firm's request to renew prequalification status will be based on satisfactory performance on past and current projects. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

(ADDED 1/17)

Utility Design: Communication

The purpose of this prequalification is to determine if a firm has the capability to perform engineering design for the relocation of **communication** utilities to accommodate roadway construction. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. The firm shall submit two or three projects that they have led the design for each of the below design elements. There shall be a full description of the work and a listing of applicable active employees with their role in the project. Each project should note whether the firm was the prime consultant or a sub consultant.
    a. **Fiber optic cable**
    b. **Coaxial cable**
    c. **Copper cable**
    d. **Property service line**
    e. **Conduit and structure**
    f. **Overhead installation**
    g. **Underground installation**

2. The firm shall provide a one-page biography of active staff that will be used for KYTC initiated-projects. It shall have at least one Professional Engineer licensed in Kentucky with qualifying experience. The biography should list relevant training and experience. Experience should include pertinent utility projects only, the years the work was completed, and the individual's role in each project (i.e. project manager, designer, construction inspector, etc.) Experience for staff may be include work with another firm or agency.

3. The firm shall demonstrate knowledge on use of utility company standards and requirements. It shall also demonstrate an understanding of easement width, description, and clearance requirements for the specified utility type.

Renewal: The decision by KYTC to approve a firm's request to renew prequalification status will be based on satisfactory performance on past and current projects. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

(ADDED 1/17)

Utility Design: Electric Level 1

The purpose of this prequalification is to determine if a firm has the capability to perform engineering design for the relocation of **electric** utilities to accommodate roadway construction. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. The firm shall submit two or three projects that they have led the design for each of the below design elements. There shall be a full description of the work and a listing of applicable active employees with their role in the project. Each project should note whether the firm was the prime consultant or a sub consultant.
    a. **Distribution facility: Single-phase, Three-phase**
    b. **Overhead distribution facility**
    c. **Underground distribution facility including direct bury, conduit and structure**
    d. **Overhead and underground property service line**

2. The firm shall provide a one-page biography of active staff that will be used for KYTC initiated-projects. It shall have at least one Professional Engineer licensed in Kentucky with qualifying experience. The biography should list relevant training and experience. Experience should include pertinent utility projects only, the years the work was completed, and the individual's role in each project (i.e. project manager, designer, etc.) Experience for staff may be include work with another firm or agency.

3. The firm shall demonstrate knowledge on use of utility company standards and requirements. It shall also demonstrate an understanding of easement width, description, and clearance requirements for the specified utility type.

Renewal: The decision by KYTC to approve a firm's request to renew prequalification status will be based on satisfactory performance on past and current projects. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

(ADDED 1/17)

Utility Design: Electric Level 2

The purpose of this prequalification is to determine if a firm has the capability to perform engineering design for the relocation of **electric** utilities to accommodate roadway construction. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. The firm must be prequalified under Utility Design: Electric Level 1.

2. The firm shall submit two or three projects that they have led the design for each of the below design elements. There shall be a full description of the work and a listing of applicable active employees with their role in the project. Each project should note whether the firm was the prime consultant or a sub consultant.
   a. **Overhead transmission facility (69kV and up)**
   b. **Underground transmission facility (69kV and up) including direct bury, conduit and structure**
   c. **Overhead engineered steel pole and tower**

3. The firm shall provide a one-page biography of active staff that will be used for KYTC initiated-projects. It shall have at least one Professional Engineer licensed in Kentucky with qualifying experience. The biography should list relevant training and experience. Experience should include pertinent utility projects only, the years the work was completed, and the individual's role in each project (i.e. project manager, designer, etc.) Experience for staff may be include work with another firm or agency.

4. The firm shall demonstrate knowledge on use of utility company standards and requirements. It shall also demonstrate an understanding of easement width, description, and clearance requirements for the specified utility type.

Renewal: The decision by KYTC to approve a firm's request to renew prequalification status will be based on satisfactory performance on past and current projects. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

(ADDED 1/17)

Utility Design: Gas Level 1

The purpose of this prequalification is to determine if a firm has the capability to perform engineering design for the relocation of **gas** utilities to accommodate roadway construction. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. The firm shall submit two or three projects that they have led the design for each of the below design elements. There shall be a full description of the work and a listing of applicable active employees with their role in the project. Each project should note whether the firm was the prime consultant or a sub consultant.
    a. **Distribution natural gas facility**
    b. **Natural gas property service line**
    c. **Distribution regulation valve, fitting, and connection**

2. The firm shall provide a one-page biography of active staff that will be used for KYTC initiated-projects. It shall have at least one Professional Engineer licensed in Kentucky with qualifying experience. The biography should list relevant training and experience. Experience should include pertinent utility projects only, the years the work was completed, and the individual's role in each project (i.e. project manager, designer, etc.) Experience for staff may be include work with another firm or agency.

3. The firm shall demonstrate knowledge on use of utility company standards and requirements. It shall also demonstrate an understanding of easement width, description, and clearance requirements for the specified utility type.

Renewal: The decision by KYTC to approve a firm's request to renew prequalification status will be based on satisfactory performance on past and current projects. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

(ADDED 1/17)

Utility Design: Gas Level 2

The purpose of this prequalification is to determine if a firm has the capability to perform engineering design for the relocation of **gas** utilities to accommodate roadway construction. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. The firm must be prequalified under Utility Design: Gas Level 1.

2. The firm shall submit two or three projects that they have led the design for each of the below design elements. There shall be a full description of the work and a listing of applicable active employees with their role in the project. Each project should note whether the firm was the prime consultant or a sub consultant.
   a. **Transmission natural gas facility**
   b. **Transmission regulation valve, fitting, and connection**

3. The firm shall provide a one-page biography of active staff that will used for KYTC initiated-projects. It shall have at least one Professional Engineer licensed in Kentucky with qualifying experience. The biography should list relevant training and experience. Experience should include pertinent utility projects only, the years the work was completed, and the individual's role in each project (i.e. project manager, designer, etc.) Experience for staff may be include work with another firm or agency.

4. The firm shall demonstrate knowledge on use of utility company standards and requirements. It shall also demonstrate an understanding of easement width, description, and clearance requirements for the specified utility type.

Renewal: The decision by KYTC to approve a firm's request to renew prequalification status will be based on satisfactory performance on past and current projects. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

(ADDED 1/17)

Utility Design: Petroleum

The purpose of this prequalification is to determine if a firm has the capability to perform engineering design for the relocation of **petroleum** utilities to accommodate roadway construction. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. The firm shall submit two or three projects that they have led the design for each of the below design elements. There shall be a full description of the work and a listing of applicable active employees with their role in the project. Each project should note whether the firm was the prime consultant or a sub consultant.
    a. **Petroleum facility**
    b. **Jet fuel facility**
    c. **Pump station**
    d. **Regulation valve, connection, and fitting**

2. The firm shall provide a one-page biography of active staff that will be used for KYTC initiated-projects. It shall have at least one Professional Engineer licensed in Kentucky with qualifying experience. The biography should list relevant training and experience. Experience should include pertinent utility projects only, the years the work was completed, and the individual's role in each project (i.e. project manager, designer, etc.) Experience for staff may be include work with another firm or agency.

3. The firm shall demonstrate knowledge on use of utility company standards and requirements. It shall also demonstrate an understanding of easement width, description, and clearance requirements for the specified utility type.

Renewal: The decision by KYTC to approve a firm's request to renew prequalification status will be based on satisfactory performance on past and current projects. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

(ADDED 1/17)

Utility Preconstruction Coordination Services

The purpose of this prequalification is to determine if a firm has the capability to be an agent of the Kentucky Transportation Cabinet coordinating utility relocations for the accommodation of roadway construction. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. The firm shall submit two or three projects that they have designed, coordinated, or managed the following utility company types.
    a. At least two municipally owned utilities
    b. At least two privately owned utility companies

2. The firm shall document understanding and acceptance of the following activities. There shall be a brief description of experience, a statement of capacity to fulfill the activities, and a listing of applicable active employees with their role in the project.

    a) Federal utility accommodation and relocation policies, rules, and regulations
    b) State statute on utility accommodation and relocation in public right of way
    c) Kentucky Transportation Cabinet accommodation and relocation policies
    d) Design management

3. The firm shall provide a one-page biography of active staff that will used for KYTC initiated-projects. The biography should list relevant training and experience. Experience should include utility relocation projects only, the years the work was completed, and the individual's role in each project (i.e. project manager, designer, etc.) Experience for staff may be include work with another firm or agency.

Renewal: The decision by KYTC to approve a firm's request to renew prequalification status will be based on satisfactory performance on past and current projects. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

(ADDED 1/17)

Utility Construction Inspection Services

The purpose of this prequalification is to determine if a firm has the capability to be an agent of the Kentucky Transportation Cabinet managing utility relocations for the accommodation of roadway construction. The firm shall submit a stand-alone prequalification document or a distinct, separate section of a prequalification document addressing the following requirements:

1. The firm shall submit two or three projects that they have designed, coordinated, or managed the following utility facility types. There shall be a full description of the experience, challenges encountered, and a listing of applicable active employees with their role in the project denoted. Each project should note whether the firm was the prime consultant or a sub consultant.

2. The firm shall document understanding and acceptance of the following activities. There shall be a brief description of experience, a statement of capacity to fulfill the activities, and a listing of applicable active employees with their role in the project.
   a) Utility construction management
   b) Utility construction inspection
   c) Utility company design and construction standards

3. The firm shall provide a one-page biography of active staff that will used for KYTC initiated-projects. The biography should list relevant training and experience. Experience should include utility relocation projects only, the years the work was completed, and the individual's role in each project (i.e. project manager, designer, etc.) Experience for staff may be include work with another firm or agency.

Renewal: The decision by KYTC to approve a firm's request to renew prequalification status will be based on satisfactory performance on past and current projects. In addition, an officer of the firm must affirm in writing that qualified personnel identified in previous submittals for prequalification still remain in that same capacity. All changes must be submitted as part of the annual request for renewal.

(ADDED 1/17)

Division of Maintenance - Bridge Maintenance Branch (502-564-4556)

IN-DEPTH STRUCTURE INSPECTION

To be pre-qualified for in-depth inspection, the consultant must meet the following requirements:

- Demonstrate experience with performing inspections for NBIS purposes, or demonstrate an understanding of NBIS requirements for such inspections by demonstrating knowledge of the current edition of FHWA Bridge Inspector's Reference Manual (BIRM), the current edition of the AASHTO Manual for Bridge Evaluation, the current edition of the AASHTO Manual for Bridge Element Inspection and the Recording and Coding guide for Structural Inventory and Appraisal of the Nations Bridges; and
- Demonstrate an understanding of the access and traffic control requirements of conducting such inspections by providing a narrative describing what types of access equipment might be required and how traffic control would be handled (which should identify whether these can be provided in house or obtained through other means)
- Have adequate staff, who meet minimum requirements for qualification for Team Leader or Program Manager as set forth in National Bridge Inspection Standards (23 CFR 650 C), to be present in each area of operation during all phases of inspection and condition reporting. (A copy of certificate of successful completion of National Highway Institute course 130055 "Safety Inspection of In-service Bridges" will be required for each Team Leader for inspection).
- Have all inspection staff trained for element level condition reporting in AASHTOWARE Bridge Management (BrM) software used by KYTC; and
- Have available computer hardware for installation of KYTC's BrM software.
- Have adequate staff, meeting team leader qualifications under NBIS, to perform inspections within prescribed frequencies described in scope of work.
- Have available trained staff for performing Non Destructive Testing (Dye Penetrate and Magnetic Particle)

UNDERWATER STRUCTURE INSPECTION

To be prequalified for underwater structure inspection, the consultant must meet the following requirements:

- Demonstrate experience with performing inspections for NBIS purposes or demonstrate an understanding of NBIS requirements for such inspections by demonstrating knowledge of the FHWA Bridge Inspectors Training Manual 70 (or later edition) and the Recording and Coding Guide for Structural Inventory and Appraisal of the Nations Bridges; and
- Have a staff member who is a Kentucky licensed professional engineer and also a certified diver because all underwater inspections are required to be performed by a professional engineer.

TUNNEL INSPECTION

To be pre-qualified tunnel inspection, the consultant must meet the following requirements:

- Demonstrate experience with performing inspections for NTIS purposes, or demonstrate an understanding of NTIS requirements for such inspections by demonstrating knowledge of current edition of the Specifications for the National Tunnel Inventory (S.N.T.I.) and the Tunnel Operations, Maintenance, Inspection, and Evaluation Manual (TOMIE) as set forth in 23 CFR 650.5.
- Have adequate staff who meet minimum requirements for qualification for Team Leader or Program Managers as set forth in the National Tunnel Inspection Standards (23 CFR 650.5), to be present in each area of operation during all phases of inspection and condition reporting. (A copy of certificate of successful completion of National Highway Institute course 130110 “Tunnel Safety Inspection” will be required for each Team Leader for inspection).
- Have all inspection staff trained for element level condition reporting.
- Have adequate staff, meeting Team Leader qualifications under NTIS, to perform inspections within prescribed frequencies described in scope of work.
- Have adequate staff to perform inspections of specialized complex tunnel systems, such as: ventilation, mechanical, electrical and fire protection systems.

(ADDED 1/17)

Division of Planning
(502-564-7183)

HIGHWAY PLANNING SERVICES - A firm shall provide all information for the individual areas for which pre-qualification is requested. An alphabetized listing of the firm's staff with appropriate professional status, areas in which each person works (i.e., highway, planning, environmental, etc.), and an identification of whether they are full-time or part-time employees shall be provided. A full-time employee is one who has eligibility to participate in the firm's benefits program. In addition, an officer of the firm must attest that the firm is financially solvent.

A firm shall provide evidence to the Kentucky Transportation Cabinet of:

(1) knowledge of acceptable practices; and

(2) prior experience in the last ten years in highway planning activities to include:

- collection or acquisition, processing, and presentation of transportation-related data;
- analysis of transportation-related data;
- traffic forecasting;
- identification of highway deficiencies and needs;
- development and evaluation of alternative solutions to meet those needs;
- preparation of cost estimates for proposed improvements;
- selection and scheduling of recommended improvements;
- public involvement; and
- financial analysis to identify and evaluation funding priorities and options for proposed improvements.

Information relating to past experience in those areas listed above shall be submitted for the firm's current staff. This information should include applicable education, training, and work experience. The employees in the firm primarily responsible for the project should be identified and their roles should be clearly explained.

Projects shown in a firm's experience that are not for the Kentucky Transportation Cabinet shall include the name of an individual directly responsible for the project, and any performance evaluations or other documentation received at the conclusion of the project.

In addition, a minimum of one (1) report by the firm shall be submitted showing evidence of the requirements in Item 2. The firm shall provide a listing of all equipment available for the development of product deliverables; including hardware and software, and demonstrate the firm's knowledge and previous use of data collection, mapping and/or other equipment and programs, as needed.

TRANSPORTATION CORRIDOR & SYSTEMS PLANNING – A firm shall provide all information for the individual areas for which pre-qualification is requested. An alphabetized listing of the firm's staff with appropriate professional status, areas in which each person works (i.e., highway, planning, environmental, etc.), and an identification of whether they are full-time or part-time employees shall be provided. A full-time employee is one who has eligibility to participate in the firm's benefits program. In addition, an officer of the firm must attest that the firm is financially solvent.

A firm shall provide evidence to the Kentucky Transportation Cabinet of:

(1) knowledge of acceptable practices; and

(2) prior experience in the last ten years in the following:

(a) multimodal transportation planning at the project and systems level, with particular emphasis on the highway mode, to include:

- collection or acquisition, processing, and presentation of transportation-related data;
- analysis of transportation-related data;
- identification of deficiencies and needs;
- forecasts of traffic and/or other transportation-related data;
- development and evaluation of alternative solutions to meet those needs;
- preparation of cost estimates for improvements;
- selection and scheduling of recommended improvements; and
- public involvement;

(b) economic analysis to evaluate the economic justification of proposed improvements, with emphasis on identifying and comparing all costs and benefits, including:

- facility management and maintenance costs and benefits;
- user costs and benefits;
- social and environmental costs and benefits due to business transfers and the generation of new business;
- as well as subsequent impacts developed through econometric modeling or other economic tools, as appropriate; and

(c) financial analysis to identify and evaluate all possible funding options to determine the financial feasibility of proposed improvements.

Information relating to past experience in those areas listed above shall be submitted for the firm's current staff. This information should include applicable education, training, and work experience. The employees in the firm primarily responsible for the project should be identified and their roles should be clearly explained.

Projects shown in a firm's experience that are not for the Kentucky Transportation Cabinet shall include the name of an individual directly responsible for the project, and any performance evaluations or other documentation received at the conclusion of the project.

In addition, a minimum of one (1) report prepared by the firm shall be submitted showing evidence of the requirements listed in Item A. If a firm does not have the required experience in economic analysis, they may acquire it through an outside source. In this case, the experience of the outside source must be documented, along with a sample report showing evidence of the required experience. A brief explanation of the anticipated contractual arrangements between the firm and the source of the econometric analysis experience should be documented.

The firm shall provide a listing of all equipment available for the development of product deliverables, including hardware and software, and document or demonstrate the firm's knowledge and previous use of data collection, mapping, and/or other equipment and programs, as needed.

ROAD CENTERLINE DATA COLLECTION - A firm shall provide all information for the individual areas for which pre-qualification is requested. An alphabetized listing of the firm's staff with appropriate professional status, areas in which each person works (i.e., highway, planning, environmental, etc.), and an identification of whether they are full-time or part-time employees shall be provided. A full-time employee is one who has eligibility to participate in the firm's benefits program. In addition, an officer of the firm must attest that the firm is financially solvent.

A firm shall provide evidence to the Kentucky Transportation Cabinet of:

(1) knowledge of acceptable practices; and

(2) prior experience in the following:

- Road Centerline data collection collected in accordance with the Standards for Road Data Collection Using Global Positioning System Techniques located at the following web site:

http://www.kytc.state.ky.us/planning/hisourky/Documents/Standardsall.pdf

- Mobile data collection using GPS spatial technologies.

Precision estimates should be used as a gauge of quality and repeatability and not to be misconstrued as a measurement to or from true feature location. The GPS coverage shall establish a current, accurate digital transportation data set. The centerline data will be exported into ARC/INFO or its equivalent and converted into an arc coverage, edited, attributed, and projected.

Information relating to past experience in those areas listed above shall be submitted for the firm's current staff. This information should include applicable education, training, and work experience. The employees in the firm primarily responsible for the project should be identified and their roles should be clearly explained.

Projects shown in a firm's experience that are not for the Kentucky Transportation Cabinet shall include the name of an individual directly responsible for the project, and any performance evaluations or other documentation received at the conclusion of the project.

The firm shall provide a listing of all equipment available for the development of product deliverables, including hardware and software, and document or demonstrate the firm's knowledge and previous use of data collection, mapping, and/or other equipment and programs, as needed. The road centerline data is to be collected using equipment compatible with, or equal to, a twelve channel integrated GPS/SBAS (Satellite Based Augmentation System) Trimble ProXH receiver with TerraSync data collection software. Centerlines are to be captured as line features with a collection interval of one position per second. Road intersections and NGS control points shall use a field devices and field software that is compatible with the GPS receiver. All rover files shall be differentially

corrected with Horizontal Root Mean Squared (HRMS) accuracy. Consultant shall use software compatible with or equal to Trimble's pathfinder office software to predict the precision of both individual observations and entire features. These estimates should be HRMS based. The average horizontal 2dHRMS values for road centerline data and point features shall be less than or equal to 2 meters.

TRAFFIC DATA COLLECTION - A firm shall provide all information for the individual areas for which pre-qualification is requested. An alphabetized listing of the firm's staff with appropriate professional status, areas in which each person works (i.e., highway, planning, environmental, etc.), and an identification of whether they are full-time or part-time employees shall be provided. A full-time employee is one who has eligibility to participate in the firm's benefits program. In addition, an officer of the firm must attest that the firm is financially solvent.

A firm shall provide evidence of:

1. the firm's knowledge of acceptable traffic data collection practices.
2. a listing of the firm's current staff members and their prior experience collecting traffic data.
3. a listing of the firm's previous completed projects in which they collected traffic data.
4. a listing of all equipment used for traffic data collection owned by the firm.

Information relating to past experience in those areas listed above shall be submitted for the firm's current staff. This information should include applicable education, training, and work experience. The employees in the firm primarily responsible for the traffic data collection should be identified and their roles should be clearly explained.

Projects shown in a firm's experience that are not for the Kentucky Transportation Cabinet shall include the name of an individual directly responsible for the project, and any performance evaluations or other documentation received at the conclusion of the project. The firm shall provide a listing of all equipment available for the development of product deliverables; including hardware and software, and demonstrate the firm's knowledge and previous use of data collection, mapping, and/or other equipment and programs, as needed.

Traffic data includes Volume, Axle Classification, Speed and Length Data. It is to be collected according to the guidelines set forth in the current edition of the Federal Highway Administration's (FHWA) Traffic Monitoring Guide (TMG). Equipment used by the Kentucky Transportation Cabinet (KYTC), Division of Planning, is the Peek ADR Traffic Data Recorders.

Data is to be provided to KYTC in the following formats:

- ADR binary files (if Peek ADR Traffic Data Recorders are used);
- Peek's Daily; and

Classification Data

Axle classification data is to be collected using FHWA Scheme "F" 13 plus 2 bins. are as follows:

- Motorcycles
- Passenger Cars - All sedans, coupes and station wagons

- Other 2-Axle, 4-Tire Single Unit Vehicles excluding passenger cars.
- Buses - buses with two axles and 6 tires or 3 or more axles
- Two-Axle, Six-Tire Single Unit Trucks
- Three-Axle Single Unit Trucks
- Four or More Axle Single Unit Trucks
- Four or Less Axle Single Trailer Trucks
- Five-Axle Single Trailer Trucks
- Six or More Axle Single Trailer Trucks
- Five or Less Multi-Trailer Trucks
- Six-Axle Multi Trailer Trucks
- Seven or More Axle Multi-Trailer Trucks
- (reserved for future)
- Unknown vehicles

Speed Data

Speed data is to be collected in 13 bins. Bins are as follows:

- <25 MPH
- 25 - 29 MPH
- 30 - 34 MPH
- 35 - 39 MPH
- 40 - 44 MPH
- 45 -49 MPH
- 50 -54 MPH
- 55 - 59 MPH
- 60 - 64 MPH
- 65 - 69 MPH
- 70 - 74 MPH
- 75 - 79 MPH
- >80 MPH

Speed data can be collected at any classification site.

Length Data

Length data is to be collected in 4 bins. Bins are as follows:

- <25 Feet
- 25 to 49.9 Feet
- 50 to 54.9 Feet
- >54.9 Feet

Length data can be collected at any classification site.

TRAFFIC FORECASTING - A firm shall provide all information for this individual area for which pre-qualification is requested. An alphabetized listing of the firm's staff with appropriate professional status, areas in which each person works (i.e., highway, planning, environmental, etc.), and an identification of whether they are full-time or part-time employees shall be provided. A full-time employee is one who has eligibility to participate in the firm's benefits program.

A firm shall provide evidence to the Kentucky Transportation Cabinet of:

1. Knowledge and experience in the development of KY ESAL methods, forecasting needs for various project phases, and generally accepted traffic forecasting parameters.
2. Knowledge and experience with generating DHV, PHF, K-factors, D-factors, truck percentages as well as turn movement development from manual and automatic counts.
3. Knowledge and experience in the use of traffic demand models for appropriate forecasting studies.
4. Availability of and experience with state-of-the-art traffic modeling software such as our preferred software, TransCAD (a Caliper product).
5. Availability of and experience with state-of-the-art simulation modeling software such as our preferred software, TransModeler (a Caliper product).
6. A professional engineer licensed in Kentucky with experience in traffic forecasting as defined herein who will be directly involved the proposed work.
7. Availability of and experience to collect traffic data that may be necessary for the purpose of completing a forecast. Data shall be in a format that is compatible with the Cabinet's existing database.
8. Traffic forecasting experience shall include pavement design forecasts, estimation of residual traffic, forecasts for turn lane geometries, bypass studies, interchange justification studies, road user cost analysis for detours, environmental analysis forecasts, and interchange studies.
9. Sub-consultants shall be pre-qualified in their proposed work.

Information relating to past experience in those areas listed above shall be submitted for the firm's current staff. This information should include applicable education, training, and work experience. The employees in the firm primarily responsible for the project should be identified and their roles should be clearly explained.

Signal timing studies, traffic impact studies, project scoping studies, micro-simulation studies, level of service (LOS) analysis, as well as environmental and design work will not be considered as experience for traffic forecasting studies. Any qualifying experience contained in these types of work shall be specifically identified in the request for prequalification.

Qualifying experience should be within the last five (5) years and the work should have been performed for the Kentucky Transportation Cabinet, another state

highway agency, the Federal Highway Administration, a metropolitan planning organization, or major local public works agency. KYTC's assessment of staff capabilities and overall performance on previous work known to Cabinet staff, including quality of work and timely completion, will also be considered.

Projects shown in a firm's experience that are not for the Kentucky Transportation Cabinet shall include the name of an individual directly responsible for the project, and any performance evaluations or other documentation received at the conclusion of the project.

In addition, a minimum of one (1) report by the firm shall be submitted showing evidence of the above requirements. The firm shall provide a listing of all equipment available for the development of product deliverables; including hardware and software, and demonstrate the firm's knowledge and previous use of data collection, mapping, and/or other equipment and programs, as needed.

TRAVEL DEMAND AND SIMULATION MODELING - A firm shall provide all information for this individual area for which pre-qualification is requested. An alphabetized listing of the firm's staff with appropriate professional status, areas in which each person works (i.e., highway, planning, environmental, etc.), and an identification of whether they are full-time or part-time employees shall be provided. A full-time employee is one who has eligibility to participate in the firm's benefits program.

A firm shall provide evidence to the Kentucky Transportation Cabinet of:

1. Knowledge and experience in the development of comprehensive regional, county, and community travel demand models.
2. Knowledge and experience in the development and analysis of existing and future networks.
3. Knowledge and experience in the development and analysis of simulation models for traffic operational studies.
4. Availability of and experience with state-of-the-art traffic modeling software such as our preferred software, TransCAD (a Caliper product).
5. Availability of and experience with state-of-the-art simulation modeling software such as our preferred software, TransModeler (a Caliper product).
6. Experience in the development and calibration/validation of traffic demand or simulation models.
7. Availability of GIS software and experience with mapping and transportation related applications.
8. Ability to collect/acquisition, process, analyze, and present population and socio-economic travel demand model related data.
9. Ability to collect traffic data that may be necessary for the purpose of model calibration. Data shall be in a format that is compatible with the Cabinet's existing database.
10. Experience in the use of traffic demand models
    a) For analysis of existing and future networks;
    b) For development of traffic operational plans
    c) For creation of long-range transportation plans
11. Sub-consultants shall be pre-qualified in their proposed work.

Information relating to past experience in those areas listed above shall be submitted for the firm's current staff. This information should include applicable education, training, and work experience. The employees in the firm primarily responsible for the project should be identified and their roles should be clearly explained.

Qualifying experience should be within the last five (5) years and the work should have been performed for the Kentucky Transportation Cabinet, another state highway agency, the Federal Highway Administration, a metropolitan planning organization, or major local public works agency. KYTC's assessment of staff

capabilities and overall performance on previous work known to Cabinet staff, including quality of work and timely completion, will also be considered.

Projects shown in a firm's experience that are not for the Kentucky Transportation Cabinet shall include the name of an individual directly responsible for the project, and any performance evaluations or other documentation received at the conclusion of the project.

In addition, a minimum of one (1) report by the firm shall be submitted showing evidence of the above requirements. The firm shall provide a listing of all equipment available for the development of product deliverables; including hardware and software, and demonstrate the firm's knowledge and previous use of data collection, mapping, and/or other equipment and programs, as needed.

PEDESTRIAN & BICYCLE FACILITY PLANNING & DESIGN

The following must be demonstrated in a separate section of the requalification application to be considered.

1. Firm Experience: The level of knowledge and experience shall be demonstrated by providing information about projects in all of the categories listed below. It is helpful to include the role of the firm and some detail about pedestrian and bicycle facility planning or design aspect of the project. Also, include experience current staff has had on projects with another firm or agency. For work performed for clients other than the Kentucky Transportation Cabinet, include the contact information of the individual directly responsible for managing the project.

a. Master Planning: Creation of a city, county, or regional master plan for bicycle or pedestrian facilities.
b. Roadway Project Scoping: Involvement in the process of examining the pedestrian and bicycle needs as part of corridor study screening and final determination on the appropriate pedestrian and bicycle facilities.
c. Roadway Project Design: Design of bicycle lanes, shared-use paths, sidewalks and other pedestrian and bicyclist amenities as part of a roadway or highway design project.
d. Streetscape Project Planning and Design: Pedestrian design that fits the urban context and includes pedestrian amenities in addition to sidewalks.
e. Off-road Project Planning and Design: Planning and design of standalone shared-use paths and other amenities, not included in a roadway project.
f. Other Experience: specialized pedestrian and bicycle design such as that in private development or local planning and zoning standards that demonstrates the firm's understanding of pedestrian and bicycle facility planning and design. Performance evaluations from previous work are helpful.

2. Staffing: The number of professionals, their direct experience, and their knowledge should be demonstrated as part of the application. The following information is required:

a. List all planners, engineers, landscape architects, and other professionals involved in pedestrian and bicycle facility planning and design. Indicate whether full or part time. For each staff member, include the following:
    i. Name
    ii. List educational, professional and relevant training credentials.
    iii. List applicable projects and the staff member's direct role on each project. Projects from a previous company or agency may be applicable.
    iv. List years of experience in pedestrian and bicycle planning and/or design.
    v. Other information that demonstrates their proficiency in pedestrian and bicycle facilities.
    vi. The firm shall have at least one Professional Engineer licensed in KY and that has worked on or supervised a bikeway project.

3. Equipment & Software: List any specialized equipment or software owned by the firm that has been used as part of applicable projects and the staff that has expertise for each.

(REVISED 7/10)

Division of Right of Way & Utilities
(502-564-3210)

Right of Way Acquisition Services and Relocation Services

The Division Right of Way and Utilities has established the following consultant prequalification criteria for Right of Way Acquisition Services and Relocation Services. In order to respond to advertised projects, a firm must submit their request to Professional Services and become pre-qualified by the Division Of Right of Way prior to the response due date.

Right of Way Acquisition Consultants - Criteria for being placed on the Cabinets pre-qualified list of Right of Way Acquisition consultants are as follows:

- **Firm:** A firm shall have a Project Manager who is either on staff or committed to working exclusively for that firm. To qualify as Project Manager, the individual must have a minimum of six years of experience in Right of Way acquisition, relocation, and appraising under the laws of eminent domain, with demonstrated management skills.
- **Acquisition Buying Agents:** A firm shall have at least two buyers who are on staff or committed to working exclusively for the firm. One of these must meet the minimum requirements of a Level III Agent. The second buyer may be a Level I, or Trainee.
- **Level III Acquisition Agent:** is an individual with a minimum of three years of recent experience in buying under the laws of eminent domain and capable of handling multiple complex acquisition issues.
- **Level II Acquisition Agent:** is an individual with a minimum of two years of recent experience in buying under the laws of eminent domain and capable of handling complex acquisition issues.
- **Level I Acquisition Agent:** is an individual with a minimum of one year of experience in buying under the laws of eminent domain and capable of handling minor acquisitions and non-complex issues.
- **Acquisition Trainee:** is an individual who meets the minimum qualifications but has no experience in acquiring right of way under the laws of eminent domain. To be considered as a trainee, an individual must be a graduate of a college or university with a bachelor's degree. Experience in writing real estate appraisals, Right of Way negotiations, or relocation assistance, all of which must have been under the laws of eminent domain, and work directly under a Project Manager and/ or a Level III Buyer for a period of three years, will substitute for the required education on year-for-year basis.

Right of Way Relocation Consultants – Any firm wishing to perform relocation assistance work, in addition to acquisition activities, must also meet the following criteria:

- **Relocation Assistance Agent:** A firm shall have a Level II Relocation Agent on staff.
- **Level II Relocation Assistance Agent:** is an individual with a minimum of two years of recent experience in Relocation Assistance under the Uniform Relocation Assistance and Real Property Acquisitions Act of 1970, as amended, and capable of handling complex relocation issues.
- **Level I Agent:** is an individual with a minimum of one year of experience as a Relocation Agent Trainee under the laws of eminent domain and capable of handling minor relocation files and noncomplex issues.
- **Relocation Assistance Trainee:** is an individual who has no experience in relocation under the laws of eminent domain. To be considered as a trainee, an individual must be a graduate of a college or university with a bachelor's degree. Experience in Right of Way acquisitions, all of which must have been under the laws of eminent domain and work directly under a Project Manager and/ or a Level II Relocation Agent for a period of three years will substitute for the required education on year for year basis.

When submitting prequalification applications or renewals, provide a detailed resume that satisfies the requirements needed for the position being applied for (Education, years of experience, number of parcels acquired/relocated, type/complexity of parcels relocated, name and item number of project along with time frame).

Example:

John/Jane Doe
1-1234.00 - approximate start and end date of project
225 total project parcels
John/Jane Doe acquired 87 parcels
John/Jane Doe relocated 23 parcels including 15 commercial, 5 residential, 3 misc. move

All Independent Fee Acquisition Buyers or Relocation Assistance Persons must be associated with a qualified firm in order to be considered for prequalification.

INSURANCE: Vendors must have Workers' Compensation and Liability Insurance as required by the Division of Professional Services. (For more information, see the *Prequalification Actions* on page 5 above).

<u>Prequalification Renewal</u>

A firm's renewal of prequalification status will be based on satisfactory performance on past and current projects and an affirmation by an officer of the firm that the qualified personnel identified in previous submittals for prequalification

remain in that function. Any changes must be submitted as part of the annual request for renewal.

Reasons for Removal of Prequalification

A firm's performance and retention of qualifying personnel will be the basis for continued prequalification. Removal of prequalification can be based on a firm's failure to perform in a professional and capable manner. If a firm loses its prequalification status, removal of prequalification will generally be for one year from the date of notification from the Cabinet. In addition to the criteria listed above, the deliberate misrepresentation of the firm's qualification and/or the failure to notify the cabinet of changes in the qualified staffing of a firm may result in the loss of the prequalification status for a period of at least one year.

Division of Structural Design
(502-564-4560)

Spans Less than 500 feet (Including Culvert Design)

A firm will have a minimum of two (2) full-time (as defined by eligibility to participate in the firm's benefits programs) employees that are directly involved in structure design. Part-time employees may not be used to address the basic requirements for full-time staff. Part-time employees may be shown as a part of the total staff size. An explanation of the availability of part-time employees, including hours available throughout the year and hours available for projects, may be used to enhance the firm's experience history.

One (1) of the full-time employees must be a professional engineer licensed in Kentucky. The professional engineers submitted for prequalification will be directly involved in structural design. The licensed professional engineer will also have experience in structure design as demonstrated by the successful completion of at least five (5) projects.

Firms that have not previously performed structure design for the Department may be required to submit sample plans for structures designed by the firm or by structural engineers employed by the firm.

Spans Greater than 500 Feet

A firm will have a minimum of four (4) full-time (as defined by eligibility to participate in the firm's benefits programs) employees that are directly involved in structure design. Part-time employees may not be used to address those basic requirements for full-time staff. Part-time employees may be shown as a part of the total staff size. An explanation of the availability of part-time employees, including hours available throughout the year and hours available for projects, may be used to enhance the firm's experience history.

Two (2) of the full-time employees must be professional engineers licensed in Kentucky. The professional engineers submitted for prequalification will be directly involved in structure design of spans greater than 500 feet. The licensed professional engineers will also have experience in structure design as demonstrated by the successful completion of at least two (2) projects with spans greater than 500 feet.

A firm must demonstrate experience in designing bridges with span lengths greater than 500 feet by the submission of sample plans designed by the firm, or by structural engineers employed by the firm.

Division of Structural Design - Geotechnical Branch
(502-564-2374)

Complete up to date criteria for Geotechnical Services can be found in the Geotechnical Guidance Manual - Section GT 902

GEOTECHNICAL DRILLING SERVICES

EXPERIENCE: The vendor must provide evidence of experience in the last five (5) years performing drilling services for highway projects (roadways and bridges). The evidence shall include projects illustrating this type of experience, with references (agency, project engineer, or consultant) with addresses and phone numbers.

EQUIPMENT: The vendor must provide a list of available equipment (drill rigs and accessories) for soil sampling and rock coring. The vendor must have at least one (1) drill rig equipped with an automatic hammer in order to be prequalified.

PERSONNEL: Drill crew supervisors must be experienced in the obtaining rock cores for rock cut slope and bridge foundation design, performing rock line soundings, performing standard penetration tests, obtaining thin-walled tube samples, obtaining disturbed soil samples, and installing cased observation wells. Evidence must be provided that the drill crew supervisors have a minimum of (3) three years' experience in the above-mentioned operations for highway projects (roadways and bridges). A drill crew supervisor is defined as the person on the drill crew field party who is responsible for the drilling operations mentioned above.

INSURANCE: Worker's Compensation and Liability Insurance as required by the Division of Professional Services.

APPLICATION REQUIREMENTS:

1. Complete Pages 2 – 4 of TC 66-209 form. Pages 3 and 4 should reflect equipment and personnel that will be used on Kentucky highway projects. Provide personal history statements for drill crew supervisors included on Page 4.
2. Attach proof of above-referenced insurances.

(REVISED 1/17)

GEOTECHNICAL ENGINEERING SERVICES

FIRM REQUIREMENTS:

- A firm permit issued by the Kentucky Board of Licensure for Professional Engineers and Land Surveyors.
- Sufficient geotechnical engineering experience by the firm, as demonstrated by having performed geotechnical engineering on a minimum of three (3) transportation projects (or other projects where related engineering tasks were performed) in the last five (5) years.
- MicroStation CADD software.

PERSONNEL REQUIREMENTS:

- At least one Professional Engineer licensed in Kentucky who is an in-house employee of the firm with a minimum of (3) three years of geotechnical engineering experience applicable to the design and/or construction of highway facilities (demonstrated by performing tasks included on Page 3 of the TC 66-210 form). The firm will be required to assign at least one full-time in-house employee meeting these requirements to actively participate in KYTC geotechnical projects in the capacity of Project Manager, Project Engineer, etc.
- At least one Professional Geologist licensed in Kentucky who is an in-house employee of the firm with a minimum of (3) three years' of engineering geology experience applicable to the design and/or construction of highway facilities (demonstrated by performing tasks included on Page 3 of the TC 66-210 form).
- Staff with sufficient experience to perform geotechnical engineering tasks for KYTC, as demonstrated by experience in a minimum of 9 of the 12 areas of "conventional" experience included on Page 3 of the TC 66-210 form. (Seismic experience is not required.)
- A minimum of one (1) CADD technician proficient with MicroStation. Professional Geologists may not be used to satisfy this requirement.

APPLICATION REQUIREMENTS:

1. Complete Page 2 of the TC 66-210 form and provide supplemental detailed project descriptions for a minimum of three (3) of the projects completed by the firm included in the summary.
2. Complete Page 3 of the TC 66-210 form and provide resumes of personnel needed to meet the minimum requirements above. All personnel experience need not be with the current employer.
3. A firm may subcontract laboratory testing and/or field drilling operations to firms prequalified in the applicable area(s). A firm may also subcontract specialty work in areas not covered by prequalification. All subcontracting is subject to the prior approval of the Division of Professional Services and the Geotechnical Branch.

4. For details regarding Licensure and Firm Permits, refer to:
   - Kentucky Board of Licensure for Professional Engineers and Land Surveyors, which can be found at the following website: http://kyboels.ky.gov
   - Kentucky Board of Registration for Professional Geologists, which can be found at the following website: http://bpg.ky.gov/Pages/default.aspx

(REVISED 1/17)

GEOTECHNICAL LABORATORY TESTING SERVICES

LABORATORY REQUIREMENTS: Accreditation by the AASHTO Materials Reference Laboratory (AMRL) for the following AASHTO test Methods: R58, T88, T89, T90, T99, T100, T193, T208, and T265. The Geotechnical Branch will verify accreditation on the AMRL website during the prequalification review.

Management and staff meeting the requirements for AASHTO R18 accreditation and with experience performing all the above-referenced tests.

A loading device with a movable head or base such that it is capable of applying a compressive load up to 60,000 lb. (267 kN), as required for the compaction portion of KM 64-501 (the Kentucky Method for performing the California Bearing Ratio Test).

APPLICATION REQUIREMENTS:

1. Complete page 2 of the TC 66-211 form and provide resumes of key personnel identified in the laboratory's Quality Manual (e.g. Technical Manager, Supervising Laboratory Technician, and Quality Manager).
2. Identify the location(s) of lab(s) to be used on KYTC Projects.
3. Provide a description and laboratory location of the above-referenced loading device. Include the make, model, load capacity, etc., and a statement that it meets the requirements above. This device must be located at a laboratory that is accredited for AASHTO T193.
4. In addition to the above-referenced test methods, the Geotechnical Branch considers AMRL accreditation for T216, T296, and T297, and the capacity to perform the Unconfined Compressive Strength of Rock, Slake Durability, and Jar Slake tests to be highly desirable. Although these tests are not required for prequalification, the Geotechnical Branch strongly recommends that labs be accredited for and/or have the ability to perform these tests.
5. Although not generally required to be submitted for prequalification, the Geotechnical Branch may request accreditation documents such as Quality Manual, On-Site Assessment Reports, Proficiency Sample Test Results, etc. Please be prepared to provide such documents upon request.
6. For detail regarding laboratory accreditation, refer to:
   - AASHTO Materials Reference Laboratory, which can be found at the following website: http://aashtoresource.org

Division of Traffic Operations
(502-564-3020)

TRAFFIC ENGINEERING SERVICES - A firm must have a minimum of one (1) licensed professional engineer on staff who can demonstrate experience in the field of traffic engineering. The following is a list of subjects in which a qualified traffic engineer would be knowledgeable:

- Traffic Flow Theory
- Urban Operations
- Geometric Design
- Accident Analysis
- Transportation Site Impact Analysis
- Isolated Traffic Signal and System Operation
- Highway Capacity
- Parking Studies and Characteristics
- Intersection Control (Non-Signalized and Signalized)

Prospective firms shall provide proof of past experience in the subjects identified in the above list. Firms are encouraged to list training that individuals identified as Traffic Engineers have taken that is relevant to the field of Traffic Engineering.

In an effort to ensure better quality and consistency in traffic impact studies, firms seeking prequalification in Traffic Engineering Services shall be required to enroll and complete a **mandatory** course offered by the Kentucky Transportation Center (KTC). Consultants wishing to be prequalified in Traffic Engineering Services will have to submit proof that at least one (1) licensed professional engineer, identified by the firm as a Traffic Engineer, has completed the Traffic Impact Study course conducted by KTC. Information regarding scheduling for this training course can be obtained from KTC by calling 859-257-7310.

Prequalification Renewal

A firm's renewal of prequalification status will be based on satisfactory performance on past and current projects and an affirmation by an officer of the firm that the qualified personnel identified in previous submittals for prequalification remain in that function. Any changes must be submitted as part of the annual request for renewal.

Reasons for Removal of Prequalification

A firm's performance and retention of qualifying personnel will be the basis for continued prequalification. Removal of prequalification can be based on a firm's failure to perform in a professional and capable manner. If a firm loses its prequalification status, removal of prequalification will generally be for one year from the date of notification from the Cabinet. In addition to the criteria listed above, the deliberate misrepresentation of the firm's qualification and/or the failure to notify the Cabinet of changes in the qualified staffing of a firm may result in the loss of the prequalification status for a period of at least one year. (REVISED 1/17)

ELECTRICAL ENGINEERING TRAFFIC SIGNAL SERVICES

Initial Prequalification

The firm shall be currently registered with Kentucky as a consulting firm. The firm must have a minimum of one professional engineer registered in Kentucky who can demonstrate experience in the design of traffic signals (span wire and mast-arm). Qualifying experience must be within the last five years. Projects included in the firm's list of experience that were not completed for the Kentucky Transportation Cabinet shall include contact information for an individual from the organization for whom the plans were prepared. Any performance evaluations/documentation received at the conclusion of the project shall also be included.

Firms shall be required to submit traffic signal plans previously designed by the professional engineer registered in Kentucky. Submitted plans and supporting documentation shall include one span wire design and one mast-arm design (in PDF format). Each one of the plans shall be stamped by the professional engineer on record.

The firm is required to have a conference call or a meeting with the Division of Traffic Operations to discuss current requirements for traffic signals in construction and permit projects. This requirement should be completed before the initial paperwork is submitted to Professional Services.

If the firm does not have experience in either span wire and/or mast-arm design, the firm may submit sample projects to show that they have the ability to perform satisfactory traffic signal design. The firm can contact the Division of Traffic Operations to discuss details of the sample projects before (re)submission to Professional Services. This option may also be utilized if the Division of Traffic Operations deems that the span-wire and/or mast-arm plans initially submitted by the firm are not adequate. The sample designs and documentation shall be turned in with the (re)submittal to Professional Services.

Prequalification Renewal

A firm's renewal of prequalification status will be based on satisfactory performance on past and current projects and an affirmation by an officer of the firm that the qualified personnel identified in previous submittals for prequalification remain in that function. Performance evaluations/documentation shall also be included for all project designs (up to three) in the past year. This submittal shall include contacts for each project and shall identify if any were mast-arm designs. Each one of the plans shall be stamped by the professional engineer on record. The professional engineer and firm shall have current status as a registered professional engineer/firm in Kentucky. The firm is required to have a conference call or a meeting with the Division of Traffic Operations to discuss current requirements for traffic signals in construction and permit projects. This requirement should be completed before renewal paperwork is submitted to

Professional Services. Any changes must be submitted as part of the annual request for renewal.

Reasons for Removal of Prequalification

A firm's design performance and retention of qualifying personnel will be the basis for continued prequalification. Removal of prequalification may also be based on the firm's failure to:

- Perform in a professional and capable manner.
- Address corrective work pursuant to review by the Kentucky Transportation Cabinet.
- Conduct a meeting/conference call with the Division of Traffic Operations before the renewal date.
- Submit performance evaluations/documentation for projects in the past year.
- Maintain professional engineer/firm license.

In addition to the criteria listed above, the deliberate misrepresentation of the firm's qualification and/or the failure to notify the cabinet of changes in the qualified staffing of a firm shall result in the loss of the prequalification status for a period of at least one year.

(REVISED 1/17)

ELECTRICAL ENGINEERING ROADWAY LIGHTING SERVICES

Initial Prequalification

The firm shall be currently registered with Kentucky as a consulting firm. A firm must have a minimum of one professional engineer registered in Kentucky who can demonstrate experience in the design of roadway lighting (conventional and high-mast) including, but not limited to: lighting layout, photometric analysis, and voltage drop calculations. Qualifying experience must be within the last five years.

Projects included in the firm's list of experience that were not completed for the Kentucky Transportation Cabinet shall include contact information for an individual from the organization for whom the plans were prepared. Any performance evaluations or other documentation received at the conclusion of the project shall also be included.

Firms shall be required to submit roadway lighting plans previously designed by the professional engineer registered in Kentucky. Submitted plans shall include one conventional lighting design and one high-mast lighting design (in PDF format). Each one of the plans shall be stamped by the professional engineer on record.

The firm is required to have a conference call or a meeting with the Division of Traffic Operations to discuss current requirements for roadway lighting in construction and permit projects. This requirement should be completed before the initial paperwork is submitted to Professional Services.

If the firm does not have experience in either conventional and/or high-mast lighting design, the firm may submit sample projects to show that they have the ability to perform satisfactory lighting design. The firm can contact the Division of Traffic Operations to discuss details of the sample projects before (re)submission to Professional Services. This option may also be utilized if the Division of Traffic Operations deems that the lighting plans initially submitted by the firm are not adequate. The sample designs and documentation shall be turned in with the (re)submittal to Professional Services.

Firms shall verify ownership of the latest available version of AGI32 software by Lighting Analysts Incorporated.

Prequalification Renewal

A firm's renewal of prequalification status will be based on satisfactory performance on past and current projects and an affirmation by an officer of the firm that the qualified personnel identified in previous submittals for prequalification remain in that function. Performance evaluations/documentation shall also be included for all project designs (up to three) in the past year. This submittal shall include contacts for each project and shall identify if any were high-mast designs. Each one of the plans shall be stamped by the professional

engineer on record. The professional engineer and firm shall have current status as a registered professional engineer/firm in Kentucky. The firm is required to have a conference call or a meeting with the Division of Traffic Operations to discuss current requirements for roadway lighting in construction and permit projects. This requirement should be completed before renewal paperwork is submitted to Professional Services. Any changes must be submitted as part of the annual request for renewal.

Firms shall verify ownership of the latest available version of AGI32 software by Lighting Analysts Incorporated. Firms will be required to submit documentation for AGI32 software training that either of the following is satisfied:

- The professional engineer registered in Kentucky with demonstrated experience in roadway lighting design has attended a minimum of seven hours of training in AGI32 software within the last two years of the renewal date, or
- The professional engineer registered in Kentucky with demonstrated experience in roadway lighting design has attended a minimum of seven hours of training in AGI32 software within the last five years of the renewal date and another member of the firm's technical staff has attended the required AGI32 software training hours (minimum of 7 hours) within two years of the renewal date.

<u>Reasons for Removal of Prequalification</u>

A firm's design performance and retention of qualifying personnel will be the basis for continued prequalification. Removal of prequalification may also be based on the firm's failure to:

- Perform in a professional and capable manner.
- Address corrective work pursuant to review by the Kentucky Transportation Cabinet.
- Verification of ownership of the latest available version of AGI32 software by Lighting Analysts Incorporated.
- Submit documentation of training in AGI 32 software by Lighting Analysts Incorporated.
- Conduct a meeting/conference call with the Division of Traffic Operations before the renewal date.
- Submit performance evaluations/documentation for projects in the past year.
- Maintain professional engineer/firm license.

In addition to the criteria listed above, the deliberate misrepresentation of the firm's qualification and/or the failure to notify the cabinet of changes in the qualified staffing of a firm shall result in the loss of the prequalification status for a period of at least one year.

(REVISED 1/17)

Division of Traffic Operations
Intelligent Transportation Systems (ITS) Branch
(502-564-3020)

ITS: Architecture Development

Concept – Niche service consultant who can take a vision of concept and develop an ITS architecture.

This category of work is defined as the research, planning, design and development of ITS Architectures for multi-state, statewide, regional, corridor, or project planning. A firm petitioning to become prequalified in this area shall demonstrate competence in and be capable of providing the following:

- Identification of key stakeholders and their interrelationships including data collection and analysis;
- Description of the required activities or functions;
- Description of the interconnections and interdependencies between functions;
- Definition of a blueprint for the integration of all systems; and
- Completion of proposed architecture.

The firm shall employ:

- A minimum of one (1) professional engineer with a background in transportation and traffic engineering and experienced in the activities associated with the researching, planning, designing, and development of ITS Architectures who maintains the appropriate technology awareness and proficiency;
- Additional professionals with backgrounds in electrical and systems engineering, human factors, public relations, group facilitation, computer science, and systems integration sufficient to perform the contracted services who maintain the appropriate technology awareness and proficiency;
- Additionally, the firm shall have a member of the project team who has completed the four USDOT ITS Architecture Use & Maintenance training courses or updated equivalents. The firm should own and have used the Turbo Architecture.

(REVISED 1/17)

ITS: System Design, Deployment and Integration

Concept - Full service consultant who can take a study, concept or design and develop/build an application/project to maturity and continue to operate the system.

A firm petitioning to become prequalified in this area shall demonstrate competence in, and be capable of providing the following technical capacity, necessary engineering and related services in each of the following areas:

- Emergency Technologies
- Project Design
- Systems Engineering Analysis
- Project Management
- Systems Integration and Communications
- Project Installation
- Project Management
- Project Equipment Procurement
- Software/Development/Modification
- Operations
- Training

The firm shall employ:

- A minimum of one (1) professional engineer with a background in transportation/traffic engineering and experienced in the activities associated with the development, management and operations of related advanced transportation technologies, and who maintains the appropriate technology awareness and proficiency.
- Additional professionals with backgrounds in electrical and/or systems engineering, human factors, computer science, system communications and systems integration sufficient to perform the contracted services, and who maintain the appropriate technology awareness and proficiency.

The firm must show a capability/understanding of the:

- Problem areas and risk factors and their interrelationships
- Required activities or functions to complete a design
- National and KYTC design and ITS Standards
- Integration and development of the system
- Deployment of the technology system
- Additionally, the firm shall have a member of the project team who has completed the four USDOT ITS Architecture Use & Maintenance training courses or updated equivalents.

(REVISED 1/17)

ITS: System Maintenance, Management and Operations

Concepts – Full Service consultant who can Maintain, Manage, and Operate Existing Systems.

This category of work is defined as the management and operation of advanced transportation/technology systems.

A firm petitioning to become prequalified in this area shall demonstrate competence in and be capable of providing the following:

- Actions necessary for the proper functioning of the system and integration new assets as needed (Operations);
- Actions performed on an as-needed basis (Response Maintenance);
- Actions performed on a regularly scheduled basis (Preventative Maintenance);
- Actions invoked to correct a recurring problem (Design and System Modification); and
- Resources allocated for the proper functioning of the system (Management).

The firm shall employ:

- A minimum of one (1) Professional Engineer licensed in Kentucky with a background in transportation and traffic engineering, is experienced in the activities associated with the management and operation of transportation technology/systems, and who maintains the appropriate technology awareness and proficiency;
- Additional professionals with backgrounds in electrical and system engineering, transportation and traffic engineering, human factors, system communications, computer science, and systems integration sufficient to perform the contracted services, and who maintain the appropriate technology awareness and proficiency;
- Additionally, the firm shall have a member of the project team who has completed the four USDOT ITS Architecture Use & Maintenance training courses or updated equivalents.

(REVISED 1/17)

ITS: Technology/System Evaluation

Concept - Niche service Consultant who can research and evaluate advanced technology/systems.

This category of work is defined as the independent research and evaluation of advanced transportation technology/systems in accordance with applicable project evaluation guidelines.

A firm petitioning to become prequalified for ITS Technology/System Evaluation shall employ:

- A minimum of one (1) Professional Engineer with a background in transportation and traffic engineering, is experienced in the activities associated with the researching, planning, designing and development of ITS projects and new technologies, and who maintains the appropriate technology awareness and proficiency;
- Additional Professionals with backgrounds in electrical and systems engineering, human factors, transportation planning, group facilitation, system communications, computer science and systems integration sufficient to perform the contracted services, and who maintain appropriate technology awareness and proficiency;
- The firm must have access to and the ability to use tools such as the ITS Deployment Analysis System (IDAS) model. Additionally, the firm shall have a member of the project team who has completed the four USDOT ITS Architecture Use & Maintenance training courses or updated equivalents.

(REVISED 1/17)

Office of Transportation Delivery
(502-564-7433)

Transit Technical Studies, Management, and Marketing/Advertising

A firm must reflect experience and/or knowledge (listing current or past projects) in the area of public transportation and/or mass transit operations such as fixed/deviated fixed or demand route systems (rural and urban populations) general public and specialized; technical transit planning, transit advertising/marketing, transit management, planning onboard and intercept surveys, scheduling/modeling; area wide and route planning, transit environmental assessments, transit studies. The firm must demonstrate financial capacity and identify key staff who will work on transit projects.

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