

# 2017 Prequalification Category Descriptions and Requirements

When providing your firm's project experience for each category, be sure to include specific details as to the scope, responsibilities, tasks, etc. which your firm performed (or is performing) in order to show your knowledge and expertise in that category. If a project is used in more than one category, the write up should be revised to focus on the requirements of each specific category and contain the details aforementioned. The general project description should be a brief paragraph, while the majority of the write up should be on the tasks your firm was (or is) responsible for.

## DESIGN CATEGORIES

### 1. Bridge and Structure Design

Design of highway, railroad and pedestrian bridges and structures (including associated studies such as hydraulic analysis, scour, etc.) sign supports; signal supports, towers, structural repairs, and special structures. Condition inspection, analyses (i.e. load rating), and evaluation of existing bridges or structures prior to performing the primary design task is included, as well as ancillary non-structure related items, cost estimating, and development of contract documents and specifications.

*License Requirement: Connecticut Professional Engineer*

### 2. Facility Design (All Modal Buildings/Vertical Structures)

Application of building code and compliance for design of all elements necessary for public transportation buildings, stations, maintenance facilities, storage facilities, parking structures, piers, wharves, docks, warehouses, ports, ferry facilities, renovations, and ADA compliance. Inspection and condition evaluation of existing infrastructure required to perform the primary design task is also included, as well as ancillary non-facility related items, cost estimating, and development of contract documents and specifications.

*License Requirement: Connecticut Professional Engineer and/or Connecticut Architect*

### 3. Highway Design

Design and engineering of all classes of roadways including associated drainage, hydraulics, geotechnical and subsurface investigations, pavement design, roadway safety, landscape architecture, illumination, incidental minor structures, property mapping, title searching, environmental permitting and stormwater certification, utility design, cost estimating, and development of contract documents and specifications.

*License Requirement: Connecticut Professional Engineer*

### 4. Rail Design

Design and engineering of railroad track, power, catenary, rolling stock, communications and signal infrastructure, system design reviews, including cost estimating, and development of contract documents and specifications.

*License Requirement: Connecticut Professional Engineer*

### 5. Traffic and Safety Engineering

Design and analysis of traffic signals and signal systems, signing, pavement markings, traffic data collection, traffic studies, Operational analysis railroad-highway grade crossings, maintenance and protection of traffic, crash analysis, economic analysis, safety project recommendations, project selection and prioritization, roadway safety audits, crash modification factors, strategic plans, implementation plans, studies, technical documentation and reports, including cost estimating, and development of contract documents and specifications.

*License Requirement: Connecticut Professional Engineer*

## BRIDGE INSPECTION CATEGORY

Firms applying for this category must have the appropriate staff and experience to complete a programmatic bridge inspection assignment. Bridge condition evaluations or inspections, prior to or in conjunction with, design services, is NOT considered qualifying experience for this category.

### 6. Bridge and Structure Inspection

Structural safety inspection (including routine, in-depth, and special inspections), load carrying capacity evaluation, and inspection findings documentation of highway and railroad bridges, overhead sign and signal supports, and other special structures in conformance with the standards established by the American Association of State Highway and Transportation Officials (AASHTO), the National Bridge Inspection Standards (NBIS), and the American Railway Engineering and Maintenance of Way Association (AREMA), .

*License Requirement: Connecticut Professional Engineer*

## **CONSTRUCTION INSPECTION CATEGORIES**

Services in these categories include resident engineers, assistant resident engineers, office engineers, chief and staff inspectors whose responsibilities are to confirm payments, quantities, testing, scheduling, etc. of a contractor. The following experience is **NOT** applicable for this category: Review of RFI's/RFC's, shop drawing review, field meetings with contractor, preparation of Change Orders, or other tasks which are performed as part of design services during construction. Other experience which is **NOT** applicable is: Construction Management services; Construction Administration; Owner's Representative; Design/Build; or Construction Manager/General Contractor.

### **7. Construction Engineering and Inspection (Facilities)**

Inspecting construction activities associated with building/facilities infrastructure (e.g. railroad stations, buildings, bus maintenance and storage facilities, parking structures, warehouses, ports, piers, wharves and ferry facilities). Verifying and monitoring a contractor's operations, performing quantity takeoffs, office engineering and other construction administrative tasks, constructability reviews, construction schedule reviews, cost estimating, quality assurance reviews, nuclear density testing, and construction survey for all types of facilities.

*License Requirement: Connecticut Professional Engineer*

### **8. Construction Engineering and Inspection (Rail)**

Inspecting construction activities associated with railroad infrastructure (railroad bridges, track, power, catenary, communications, signals, rolling stock). Verifying and monitoring a contractor's operations, performing quantity takeoffs, office engineering and other construction administrative tasks, constructability reviews, construction schedule reviews, systems analysis reviews, quality assurance reviews, cost estimating, and construction survey.

*License Requirement: Connecticut Professional Engineer*

### **9. Construction Engineering and Inspection (Roadway & Bridge)**

Inspecting construction activities associated with highway and bridge infrastructure. This includes items such as pavement, bridges, miscellaneous structures, culverts, drainage, roadway safety devices, traffic signals, and illumination. Verifying and monitoring a contractor's operations, performing quantity takeoffs, office engineering and other construction administrative tasks, constructability reviews, construction schedule reviews, systems analysis reviews, quality assurance reviews, cost estimating, nuclear density testing, and construction survey.

*License Requirement: Connecticut Professional Engineer*

## **PLANNING CATEGORIES**

### **10. Environmental Planning Studies and Regulatory Investigations**

State and Federal environmental documentation to comply with the National Environmental Policy Act (NEPA) and the Connecticut Environmental Policy Act (CEPA) for all modes of transportation including passenger and freight, wetland delineation and studies, stormwater management, water resources, land use, ecological, noise (impact and abatement analysis), air quality and historic/archaeological studies.

*License Requirement: Connecticut Professional Engineer*

### **11. Modal Transportation Planning Studies (Highway, Transit, Rail, Ferries/Ports/Waterways, and Bicycle/Pedestrian)**

Travel demand analysis, forecasting and modeling, commodity flow analysis, facilities needs and conceptual plan development, intermodal planning studies and connectivity evaluation, Complete Streets, strategic long range transportation plans, master plans, performance measurement strategy studies, needs and deficiency analysis, alternatives analysis, feasibility studies and plans, land use and development analysis, economic modeling and impact analysis, transportation sustainability planning, freight planning, climate change planning and modeling, public involvement process, grant writing, and resiliency planning.

*License Requirement: Connecticut Professional Engineer*