

**A. OVERVIEW**

1. The Consultant will perform services on various Roadway Design projects including those related to Maintenance, Resurfacing, Restoration and Rehabilitation (3R), and New and Reconstruction projects. Services may include, but are not limited to, the following:
  - a. Design Policies and Procedures
    - 1) Design Manual reviews, documentation and training (e.g., Roadway Design Manual, Drainage, Utilities and others)
    - 2) Policy research and development
    - 3) Standard plan research and review, documentation and training
    - 4) Value Engineering services
    - 5) Practical Design services
  - b. Planning and Pre-project Activities including, but not limited to, the following tasks;
    - 1) Grant Application Preparation
    - 2) Corridor Analysis
    - 3) Safety Studies for intersections and corridors
    - 4) Cost benefit studies to determine operational, capacity, geometric or safety needs
  - c. Roadway Design activities including, but not limited to, the following tasks:
    - 1) Additional surveys
    - 2) Scoping documents
    - 3) Preliminary & final design
    - 4) Emergency design (e.g., Flood repair)
    - 5) Alternatives Analysis as required for 404 permits and flood plain permits
    - 6) Constructability Analysis
    - 7) Erosion Control
    - 8) Lighting Design
    - 9) ADA design and compliance
    - 10) Railroad coordination
    - 11) Utility rehabilitation and coordination
    - 12) Project renderings and visualizations
    - 13) Presentation development (e.g., Design Relaxations)

- 14) Plan development/drafting services
  - 15) Project cost and Estimate support
  - 16) Field inspections (Plan-in-Hand's, field review of existing conditions, etc.)
  - d. Application Support Services, development and training
    - 1) AASHTOWare Estimation
    - 2) MicroStation
    - 3) GeoPAK
    - 4) ProjectWise
    - 5) OnBase
    - 6) Various Engineering software including but not limited to AutoTurn, FlowMaster, HY8, etc.
    - 7) Software integration development and training
  - e. Hydraulic and Hydrological Studies
  - f. Survey Services
  - g. Public Involvement Services
  - h. Right of Way Design Services
2. Project management services include managing the communications between the consultants performing work on the project. The Roadway Design On-Call Consultant will be responsible for facilitating the coordination of the project development process and the project deliverables completed by the other consultants. Work performed by other consultants may include but is not limited to: Environmental Services, Wetland Delineations and Mitigations, Bridge Design, Hydraulic Studies, Right of Way Design, appraisal and negotiation and Titles and Ownership research. Project communication and deliverables will be managed by the On-Call Roadway Consultant in such a manner that each consultant providing support services has access to other project related information necessary to efficiently provide their services. This includes such information as surveys, roadway and bridge design plans and details, right of way design, and hydraulic studies. The NDOT will be the Coordinating Professional, as defined in Neb. Rev. Stat. § 81-3437.

**B. QUALIFICATIONS, KNOWLEDGE AND EXPERIENCE**

1. All work shall be completed by or under the direct supervision of a Nebraska licensed professional civil engineer. The consultant firm shall use engineers experienced with all aspects of roadway design related to the services to be provided.
2. The Consultant shall have a working knowledge of and use, when applicable, the following non-exclusive list of references:
  - a. A Policy on Geometric Design of Highways and Streets 2011 (AASHTO)
  - b. Access Control Policy to the State Highway System, 2006 (or latest) (NDOT)
  - c. Americans with Disabilities Act Accessibility Guidelines

- d. Design Process Outline (NDOT)
  - e. Drainage Design & Erosion Control Manual, 2006 (or latest) (NDOT)
  - f. Highway Capacity Manual 2010 (HCM2010), Transportation Research Board
  - g. Local, State and federal laws and regulations that pertain to roadway design
  - h. Manual on Uniform Traffic Control Devices (FHWA), 2009 Edition
  - i. MUTCD - Nebraska 2011 Supplement to the MUTCD
  - j. Nebraska Minimum Design Standards – Counties, Municipalities, State - 2010 (or most current) (Nebraska Administrative Code Title 428; Rules and Regulations of the Board of Public Roads Classifications and Standards
  - k. National Environmental Protection Act (NEPA) process
  - l. Preliminary Survey Manual (NDOT)
  - m. Roadside Design Guide, 2011 (AASHTO)
  - n. Roadway Design Manual, 2010 (or latest) (NDOT)
  - o. Standard and Special Plans Manual (NDOT)
  - p. Standard Specifications for Highway Construction 2007 (or latest edition) (NDOT)
  - q. Traffic Control Devices Handbook, 2001 (or latest) (ITE)
  - r. United States Access Board Guidelines, Standards, and Publications
  - s. Policy for Accommodating Utilities on State Highway Right-of-Way (NDOT)
3. Certification as a NEPA consultant is not required for these services; however, the consultant needs to demonstrate an understanding of the importance of coordinated project development with the NEPA process is an important aspect of their qualifications to perform this work.

**C. SOFTWARE AND EQUIPMENT REQUIREMENTS**

1. The Consultant's design and drafting software and design files must be compatible with NDOT's design and drafting software. Information on NDOT's design protocol can be found on NDOT's website on the Roadway Design page; <http://dot.nebraska.gov/business-center/design-consultant/>.
2. The Consultant's design must be accomplished using the design software GEOPAK version SS4 or later but no later than that in use by NDOT. The consultant's design must follow NDOT's drafting procedures, guidelines, and file naming convention using the appropriate version of MicroStation CAD software. Consultant's use of an earlier version of GEOPAK OpenRoads may be approved for specific activities with written permission of NDOT and at NDOT's sole discretion.
3. In many cases, projects will require that a 3D model be generated using GEOPAK OpenRoads technology.
4. Consultant will be provided access to other software such as ProjectWise, OnBase, etc as needed depending on the scope of the project.
5. Reports and documents must be submitted in a form compatible with Microsoft Office products unless otherwise directed.

6. The Consultant will provide all software and computer equipment required to complete the work including any analysis software required to perform the bridge design work.

**D. EXPECTATIONS FOR THE DELIVERABLES**

1. The consultant shall provide to NDOT acceptable deliverables based on the scope of services. The deliverables may include but not limited to plans, specifications, documentation, training courses. The Consultant shall seal and sign applicable deliverables in accordance with the Nebraska Engineers and Architects Regulation Act. Consultant shall also provide to NDOT all applicable supporting documentation and reports as described in the Task Order.
2. Plans and special provisions shall be developed in compliance with the manuals, guidelines and specifications as listed in the Qualifications, Knowledge and Experience section, paragraph B.
3. Consultant shall submit to the NDOT roadway design plans at the following stages, when applicable: before the plan-in-hand field inspection, before public meetings, at 90% completion stage, and final PS&E package. Deliverables must be completed and submitted in accordance with the schedule set out in the Task Order.
4. Deliverables must be submitted in hard copy and electronic form as outlined in the Task Order.
5. Submittals will be reviewed and approved by NDOT. Consultant shall address all issues raised by NDOT's review and make all necessary changes to the work.