CORRIDOR STUDIES

A. OVERVIEW OF THE WORK

This work is defined as professional and technical efforts required to provide engineering location studies of alternate corridors which may include feasibility studies, corridor alternatives analysis, preparation of design assumptions, corridor study report and participation in public information meetings and location public hearings.

The primary objective of the corridor study is to determine the preferred concept and location for a new highway alignment.

The scope of work for this project includes the determination and evaluation of alternative alignment concepts, determination of estimated construction costs for each alternative, environmental documentation (separate scope and contract), and public involvement. More specifically;

1. Collect and review information provided by the State.
2. Make field trips to the corridor to review the project location and site specific conditions, and collect information.
3. Based on information obtained from an environmental field investigation completed by others, investigate impacts to environmentally sensitive sites or areas that may be affected by the various alignments being considered, determine additional alignment alternatives that avoid or minimize environmental impacts and satisfy applicable design standards.
4. Meet with city and county officials and with other agencies deemed necessary to gather initial input. Consultant shall prepare and distribute minutes of the meetings
5. Perform vertical and horizontal analysis of existing alignment in accordance with the current version of the Roadway Design Manual.
6. Develop preliminary typical sections and alignment alternatives based on information gathered from the State or others, data collected in the field, engineering analysis, and from public input. The Consultant shall use LiDAR, USGS maps, as-built plans, aerial photos, field observations, or any other available information to perform the preliminary concept development. Field survey work is not a part of this study.
7. Evaluate existing intersections and prepare proposed intersection layouts to develop a preliminary access management plan.
8. Determine preliminary bridge concepts including length and width for any structures deemed necessary. The bridge features will be shown on the roadway profile sheet. The type, size, and location drawing will be prepared in a subsequent design phase.
9. Participate in all public meetings by preparing and setting up displays, making presentations, if necessary, and answering questions. Displays may include a project location map, aerial plan views of the alternative routes, typical sections,

wetlands, floodplains, archeological and historical features, any other environmentally sensitive areas or sites, and other displays, as appropriate.

10. Prepare a statement justifying each wetland impact for all final alignments. Discuss efforts to avoid and minimize impacts to both wetlands and stream channels. The consultant will provide the existing wetland determination along the final alternative alignments and potential mitigation sites.

11. Determine approximate construction item quantities for all major items on all alternatives carried forward in the NEPA process. In addition, estimate the cost of all ROW takings and major utility impacts.

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

   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

3. The Consultant staff shall have knowledge of the NEPA process, and experience in providing information necessary for completing NEPA documents for a highway improvement project.

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://roads.nebraska.gov/business-center/design-consultant/.

2. The Consultant's design must be accomplished using OpenRoads Designer software that is current to what is 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 design or CAD software may be approved for specific activities with written permission by NDOT and at NDOT's sole discretion.

3. In many cases, projects will require that a 3D model be generated using OpenRoads technology.

4. Reports and documents must be submitted in a form compatible with Microsoft Office products unless otherwise directed.

5. The Consultant will provide all software and computer equipment required to complete the work.

D. EXPECTATIONS FOR THE DELIVERABLES

1. The consultant shall provide to NDOT acceptable final plans, specifications and estimates (PS&E) for use in a bid letting and construction of the project. The Consultant shall seal and sign the final plans and 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. Consultant shall prepare and submit a draft and final corridor report describing the study findings including;

    a. Description of all final alternative alignments

    b. Engineering analysis and comparison of alternatives costs

c. Recommendations or reasons for choosing the preferred alternative

d. Plan and profile sheets

e. Preliminary access management plan.

f. A brief description of each of the preliminary alignments that were considered and reasons why each was eliminated will also be included in the report.

6. This report shall also include information regarding

a. traffic volumes

b. existing alignment conditions

c. design standards

d. typical sections

e. property takings

f. brief general discussion of major environmental impacts

g. other information relevant to this project.

7. Upon completion of NDOR review comments, if any, the consultant will provide final submission of the Corridor Study Report.

8. Meeting agenda and minutes