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05/17/16

AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES

This Agreement is made and entered into this 17th day of May, 2016, by and between the WOODBURY COUNTY IOWA, hereinafter referred to as "County", and McClure Engineering Company, Sioux City, Iowa (Fed. I.D. #42-0982931), a professional corporation incorporated and licensed under the laws of the State of Iowa, party of the second part, hereinafter referred to as "Consultant" as follows:

THE COUNTY HEREBY AGREES TO RETAIN THE CONSULTANT FOR THE PROJECT AS DESCRIBED IN THIS AGREEMENT AND CONSULTANT AGREES TO PERFORM THE PROFESSIONAL SERVICES AND FURNISH THE NECESSARY DOCUMENTATION FOR THE PROJECT AS GENERALLY DESCRIBED IN THIS AGREEMENT.

1. SCOPE OF SERVICES

   Services provided under this Agreement shall be as further described in Attachment 1, Scope of Services, and Attachment 2, Area of Study.

2. SCHEDULE

   The schedule of the professional services to be performed shall conform to the Schedule set forth in Attachment 3. Any deviations from the Schedule shall be approved by the authorized County representative. The County agrees that the Consultant is not responsible for delays arising from a change in the scope of services, a change in the scale of the Project or delays resulting from causes not directly or indirectly related to the actions of the Consultant.

3. COMPENSATION

   A. In consideration of the professional services provided herein, the County agrees to pay the Consultant the following sum NOT-TO-EXCEED, including any authorized reimbursable expenses, pursuant to the Schedule of Fees set forth in Attachment 4.

I.	Phases A, B, C, and E	$ 416,799
II.	Phase D	$ 231,610
	Total Fees	$ 648,409

   Approval of this agreement authorizes Consultant to proceed with Phases A, B, C, and E as outlined in Schedule of Fees set forth in Attachment 4. Before proceeding with Phase D, Environmental Documentation, Consultant will further refine the proposed fees based on information assembled in other phases. County will then provide authorization before Consultant proceeds with Phase D.

   B. The Consultant shall invoice the County monthly for services, any reimbursable expenses and any approved amendments to this Agreement, based upon services actually completed at the time of the invoice. Final payment shall be due and payable within 30 days of the County's acceptance of Consultant's submission of final deliverables in accordance with the Scope of Services.

   C. In consideration of the compensation paid to the Consultant, the Consultant agrees to perform all professional services to the satisfaction of the County by performing the professional services in a manner consistent with that degree of care and skill ordinarily exercised by members of Consultant's profession currently practicing under similar circumstances. If the performance of this Agreement involves the services of others or the furnishing of equipment, supplies, or materials, the Consultant agrees to pay for the same in full.

4. INSURANCE

A. Consultant understands and agrees that Consultant shall have no right of coverage under any and all existing or future County comprehensive, self or personal injury policies. Consultant shall provide insurance coverage for and on behalf of Consultant that will sufficiently protect Consultant or Consultant' representative(s) in connection with the professional services which are to be provided by Consultant pursuant to this Agreement, including protection from claims for bodily injury, death, property damage, and lost income. Consultant shall provide worker's compensation insurance coverage for Consultant and all Consultant's personnel. Consultant shall file applicable insurance certificates with the County, and shall also provide evidence of the following additional coverage.

B. The Consultant shall provide evidence of comprehensive general liability coverage and contractual liability insurance by an insurance company licensed to do business in the State of Iowa in the limits of at least $1,000,000 each personal injury accident and/or death; $1,000,000 general aggregate personal injury and/or death; and $1,000,000 for each property damage accident. The evidence shall designate the County as an additional insured, and that it cannot be canceled or materially altered without giving the County at least thirty (30) days written notice by registered mail, return receipt requested.

C. The Consultant shall also provide evidence of automobile liability coverage in the limits of at least $1,000,000 bodily injury and property damage combined. The evidence shall designate the County as an additional insured, and that it cannot be cancelled or materially altered without giving the County at least thirty (30) days written notice by registered mail, return receipt requested.

D. The Consultant shall provide evidence of professional liability insurance, by an insurance company licensed to do business in the State of Iowa, in the limit of $1,000,000 for claims arising out of the professional liability of the Consultant. Consultant shall provide County written notice within five (5) days by registered mail, return receipt requested of the cancellation or material alteration of the professional liability policy.

E. Failure of Consultant to maintain any of the insurance coverages set forth above shall constitute a material breach of this Agreement.

5. NOTICE

Any notice to the parties required under this agreement shall be in writing, delivered to the person designated below, by United States mail or in hand delivery, at the indicated address unless otherwise designated in writing.

FOR THE COUNTY:

Name: Woodbury County, Iowa
Attn: Mark Nahra, County Engineer
Address: 759 East Frontage Road
City, State: Moville, IA 51556

FOR THE CONSULTANT:

Name: McClure Engineering Company
Attn: Jeff Schug, Dir. Transportation
Address: 617 Pierce St., Suite 201
City, State: Sioux City, IA 51101

6. GENERAL COMPLIANCE

In the conduct of the professional services contemplated hereunder, the Consultant shall comply with applicable state, federal, and local law, rules, and regulations, technical standards, or specifications issued by the County. Consultant must qualify for and obtain any required licenses prior to commencement of work, including any professional licenses necessary to perform work within the State of Iowa.

7. STANDARD OF CARE

Services provided by the Consultant under this Agreement shall be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

8. INDEPENDENT CONTRACTOR

Consultant understands and agrees that the Consultant and Consultant's employees and representatives are not County employees. Consultant shall be solely responsible for payment of salaries, wages, payroll taxes, unemployment benefits, or any other form of compensation or benefit to Consultant or Consultant's employees, representatives or other personnel performing the professional services specified herein, whether it be of a direct or indirect nature. Further, it is expressly understood and agreed that for such purposes neither Consultant nor Consultant's employees, representatives or other personnel shall be entitled to any County payroll, insurance, unemployment, worker's compensation, retirement, or any other benefits whatsoever.

9. NON-DISCRIMINATION

Consultant will not discriminate against any employee of applicant for employment because of race, color, sex, national origin, religion, age, handicap, or veteran status. Consultant will, where appropriate or required, take affirmative action to ensure that applicants are employed, and that employees are treated, during employment, without regard to their race, color, sex, or national origin, religion, age, handicap, or veteran status. Consultant will cooperate with the County in using Consultant's best efforts to ensure that Disadvantaged Business Enterprises are afforded the maximum opportunity to compete for subcontracts of work under this Agreement.

10. HOLD HARMLESS

Consultant agrees to indemnify and hold harmless the County, its officers, agents, and employees from any and all claims, settlements and judgments, to include all reasonable investigative fees, attorney's fees, and court costs for any damage or loss which is due to or arises from a breach of this Agreement, or from negligent acts, errors or omissions in the performance of professional services under this Agreement and those of its sub consultants or anyone for whom Consultant is legally liable.

11. ASSIGNMENT

Consultant shall not assign or otherwise transfer this Agreement or any right or obligations therein without first receiving prior written consent of the County.

12. APPROPRIATION OF FUNDS

The funds appropriated for this Agreement are equal to or exceed the compensation to be paid to Consultant. The County's continuing obligations under this Agreement may be subject to appropriation of funding by the County Board of Supervisorsl. In the event that sufficient funding is not appropriated in whole or in part for continued performance of the County's obligations under this Agreement, or if appropriated funding is not expended due to County spending limitations, the County may terminate this Agreement without further compensation to the Consultant. To the greatest extent allowed by law, the County shall compensate Consultant as provided in Section 18(B) of this Agreement.

13. AUTHORIZED AMENDMENTS TO AGREEMENT

A. The Consultant and the County acknowledge and agree that no amendment to this Agreement or other form, order or directive may be issued by the County which requires additional compensable work to be performed if such work causes the aggregate amount payable under the amendment, order or directive to exceed the amount appropriated for this Agreement as listed in Section 3, above, unless the Consultant has been given a written assurance by the County that lawful appropriation to cover the costs of the additional work has been made.

B. The Consultant and the County further acknowledge and agree that no amendment to this Agreement or other form, order or directive which requires additional compensable work to be performed under this Agreement shall be issued by the County unless funds are available to pay such additional costs, and the Consultant shall not be entitled to any additional compensation for any additional compensable work performed under this Agreement. The Consultant expressly waives any right to additional compensation, whether in law or equity, unless prior to commencing the additional work the Consultant was given a written amendment, order or directive describing the additional compensable work to be performed and setting forth the amount of compensation to be paid, such amendment, order or directive to be signed by the authorized County representative. It is the Consultant's sole responsibility to know, determine, and ascertain the authority of the County representative signing any amendment, directive or order.

14. OWNERSHIP OF CONSULTING DOCUMENTS

All sketches, tracings, plans, specifications, reports, and other data prepared under this Agreement shall become the property of the County; a reproducible set shall be delivered to the County at no additional cost to the County upon completion of the plans or termination of the services of the Consultant. All drawings and data shall be transmitted in a durable material, with electronic files provided when feasible to do so. The Consultant's liability for use of the sketches, tracings, plans, specifications, reports, and other data prepared under this Agreement shall be limited to the Project.

15. INTERPRETATION

No amendment or modification of this Agreement shall be valid unless expressed in writing and executed by the parties hereto in the same manner as the execution of the Agreement. This is a completely integrated Agreement and contains the entire agreement of the parties; any prior written or oral agreements shall be of no force or effect and shall not be binding upon either party. The laws of the State of Iowa shall govern and any judicial action under the terms of this Agreement shall be exclusively within the jurisdiction of the district court for Woodbury County, Iowa.

16. COMPLIANCE WITH FEDERAL LAW

To the extent any federal appropriation has or will be provided for the Project, or any federal requirement is imposed on the Project, Consultant agrees that Consultant will comply with all relevant laws, rules and regulations imposed on County and/or Consultant necessary for receipt of the federal appropriation. Consultant shall provide appropriate certification regarding Consultant's compliance.

17. SOLICITATION AND PERFORMANCE

A. The Consultant warrants that it has not employed or retained any company or person, other than a bona fide employee working for the Consultant, to solicit or secure this Agreement, and that the Consultant has not paid or agreed to pay any company or person other than a bona fide employee, any fee, commission, percentage, brokerage fee, gift or contingent fee.

B. The Consultant shall not engage the services of any person or persons in the employ of the County at the time of commencing such services without the written consent of the County.

18. SUSPENSION AND TERMINATION OF AGREEMENT

A. The right is reserved by the County to suspend this Agreement at any time. Such suspension may be effected by the County giving written notice to the Consultant, and shall be effective as of the date established in the suspension notice. Payment for Consultant's services shall be made by the County for services performed to the date established in the suspension notice. Should the County reinstate the work after notice of suspension, such reinstatement may be accomplished by thirty (30) days written notice within a period of six (6) months after such suspension, unless this period is extended by written consent of the Consultant.

B. Upon ten (10) days written notice to the Consultant, the County may terminate the Agreement at any time if it is found that reasons beyond the control of either the County or Consultant make it impossible or against the County's interest to complete the Agreement. In such case, the Consultant shall have no claims against the County except for the value of the work performed up to the date the Agreement is terminated.

C. The County may also terminate this Agreement at any time if it is found that the Consultant has violated any material term or condition of this Agreement or that Consultant has failed to maintain workers' compensation insurance or other insurance provided for in this Agreement. In the event of such default by the Consultant, the County may give ten (10) days written notice to the Consultant of the County's intent to terminate the Agreement. Consultant shall have ten (10) days from notification to remedy the conditions constituting the default.

D. In the event that this Agreement is terminated in accordance with paragraph C of this section, the County may take possession of any work and may complete any work by whatever means the County may select. The cost of completing said work shall be deducted from the balance which would have been due to the Consultant had the Agreement not been terminated and work completed in accordance with contract documents.

E. The Consultant may terminate this Agreement if it is found that the County has violated any material term or condition of this Agreement. In the event of such default by the County, the Consultant shall give ten (10) days written notice to the County of the Consultant's intent to terminate the Agreement. County shall have ten (10) days from notification to remedy the conditions constituting the default.

19. TAXES

The Consultant shall pay all sales and use taxes required to be paid to the State of Iowa on the work covered by this Agreement. The Consultant shall execute and deliver and shall cause any sub-consultant or subcontractor to execute and deliver to the County certificates as required to permit the County to make application for refunds of said sales and use taxes as applicable. The County is a municipal corporation and not subject to state and local tax, use tax, or federal excise taxes.

20. SEVERABILITY

If any portion of this Agreement is held invalid or unenforceable by a court of competent jurisdiction, the remaining portions of this Agreement shall continue in full force and effect.

21. MISCELLANEOUS HEADINGS

Title to articles, paragraphs, and subparagraphs are for information purposes only and shall not be considered a substantive part of this Agreement.

22. FURTHER ASSURANCES

Each party hereby agrees to execute and deliver such additional instruments and documents and to take all such other action as the other party may reasonably request from time to time in order to effect the provisions and purposes of this Agreement.

23. COUNTERPARTS

This Agreement may be executed in any number of counterparts, each of which shall constitute an original document, no other counterpart needing to be produced, and all of which when taken together shall constitute the same instrument.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized officers or agents on the day and year first above written.

CONSULTANT

BY:_____
Jeff Schug Dir. Transportation Services

WOODBURY COUNTY, IOWA

BY:_____
Jeremy Taylor, Chair, Board of Supervisors

ATTACHMENT 1
Woodbury County Interchange Justification Report
Scope of Services

PROPOSAL STATEMENT AND OBJECTIVE

This Proposal by McClure Engineering Company (MEC) and HDR Engineering, Inc. (HDR) to Woodbury County (the County) includes effort to review options for the construction of a new interchange on Interstate 29 (I-29) between the existing Salix Interchange and the existing Sergeant Bluff Interchange. An Interchange Justification Report (IJR) and National Environmental Policy Act (NEPA) documentation will be prepared to move the project forward for future final design and construction.

BACKGROUND AND BASIS OF PROPOSAL

The scope of this proposal is based upon the planning documentation, field studies, and data collection required to prepare an IJR for FHWA Iowa Division approval of development of an interstate interchange and a streamlined Environmental Assessment (EA) for NEPA compliance. It is assumed that FHWA Iowa Division has determined that the project would be adequately supported with an EA.

A past study for the City of Sioux for an interchange between the existing Salix and Sergeant Bluff interchanges was conducted in 2005, and involved planning, field studies, and preparation of reports and documents. To the extent that the information generated is useful, the consultants will incorporate information from the past study in the new study. The study area proposed for this project is larger than the past study because the updated study area includes additional roadway connections and extends further south (in part, to account for a potential railroad crossing). The previous reports include;

1. Intensive Phase I Cultural Resources Survey for the Proposed I-29/235th Street Intersection, Liberty Township, Woodbury County, Iowa, December 2005.
2. Architectural Evaluation of Farmsteads and Supplemental Archeological Survey for the Proposed I-29/235th Street Interchange, Liberty Township, Woodbury County, Iowa, March 2007.
3. Southbridge Master Plan, City of Sioux City, Iowa, October 2009.

The Study Area boundaries for this proposal include the conceptual interchange location shown in Woodbury County Envision 2050 Plan and SIMPCO Long Range Transportation Plan, an estimated buffer area to the north and south, an area sufficient to include required access roads, and the current rest area that would likely need to be demolished to accommodate a new interchange and maintain an adequate spacing between interstate access points. The Study Area boundaries were based on the consideration of a corridor for a potential railroad crossing for another project being considered as part of planned location near the interchange proposed by Woodbury County. The Study Area (see attached figure) includes approximately 1,230 acres, but approximately 74 acres are estimated to be within interstate ROW.

NEPA products produced under this scope will be consistent with: 1.) 23 CFR Part 771 and 40 CFR Parts 1500-1508; 2.) Applicable FHWA guidance/regulations; 3.) Iowa Division Office procedures for environmental document preparation; and 4.) Iowa DOT policy/procedures for environmental documents.

The study will apply urban design standards and interchange spacing consistent with the expected growth within the 2020 – 2040 planning window.

Key understandings and assumptions used to develop the proposal are documented in the Key Understandings/Assumptions section near the end of the proposal.

SCOPE OF SERVICES

MEC and HDR propose to provide the professional Services outlined in the following phases and tasks.

I. Description of Work Phases (A through H) and Tasks

A. Project Management

1. Develop Project Instructions, Schedule, and Work Plan

   Prepare written instruction for project staff, providing background, names of contacts, communications procedures, responsibilities, schedule and budget information, and other important elements for the project. Establish a graphic project schedule indicating critical dates, milestones, and deliverables. Prepare a detailed work plan with specific staff assignments, by task, corresponding to the schedule.

2. Stakeholder Coordination and Meetings

   Collaborate with affected local municipalities (Sioux City, Sergeant Bluff, Salix), Woodbury County, SIMPCO, and Iowa DOT with up to 8 in-person meetings. HDR would attend up to 4 in-person meetings with 2 HDR staff.

   MEC will form a steering committee that will meet monthly for the duration of the project. 2 HDR staff will participate in up to 4 in-person stakeholder meetings and up to 20 conference calls.

3. Subconsultant Management

4. Project Monitoring and Progress Reports

   Maintain the system for monitoring progress and expenditures to allow monthly tracking by task. Prepare and submit monthly invoicing and progress reports outlining the following:
   - Activities during the reporting period and activities planned for the following month.
   - Problems encountered and recommended solutions; and
   - Overall status

5. Quality Control Plan

   Establish review and checking procedures for design process and project deliverables. Designate responsibility for implementation of the Plan.

B. Topographic Data Acquisition

1. Obtain As-builts of Candidate Arterial Roadways

   a. Gather as-built data, files, and other data from the County and Iowa DOT on the Interstate and arterial roadways within the defined study area.

2. Obtain LIDAR and Aerial Imagery

   a. Light detection and radar (LIDAR) mapping shall be collected in the vicinity of the proposed location using a mobile platform. This results in a high accuracy with a high point density over a large coverage area. Available aerial imagery shall be used to supplement the LIDAR data when information is needed away from the immediate interchange area.

3. Geotechnical Evaluation

   a. The Consultant anticipates that a geotechnical evaluation would not normally be needed at this stage of an IJR. In any event, this task would include minimal investigation of soil conditions and adequacy of the site for construction purposes.

4. Existing Data Set Information from 2005 study

   a. The existing information from the 2005 study will be provided to the consultant by the City of Sioux City, and/or Iowa Department of Transportation

C. Interchange Justification Report

C1 Letter of Request (LOR)

C1.1 Development and Letter

a. Prepare Letter of Request following the guidelines in the Iowa DOT Process for New or Revised Interchange Access Handbook.

b. Establish or develop the following: Location; Purpose and Need; Project Development and Construction Schedule; Funding Plan; Logical Termini of the Project; Compatibility with the Existing and Future Road Network; Coordination with and Support from the Local Governments and/or the Respective MPO and RPA.

c. Anticipate no more than one meeting with City/County and DOT Advisory Committee.

d. Submit IJR Letter of Request for concurrence to proceed to preparation of the IJR and NEPA documents.

C2 Methodology Letter of Understanding (MLOU)

C2.1 Prepare MLOU

a. HDR will prepare a MLOU document as outlined in the Process for New or Revised Interchange Access User Guide 2.2. The MLOU document will identify the parameters and primary areas of focus for preparing the IJR, including how each of the eight FHWA policy points will be addressed.

C2.2 Traffic Projections

a. Coordination on SIMPCO Travel Demand Model
HDR will coordinate with Iowa DOT on the 2040 SIMPCO Travel Demand Model. The coordination will include review of the socio-economic data for the travel analysis zones in the study area. The Iowa DOT will conduct the travel demand modeling and will provide the consultant existing year, future year/no-build and future year/build average daily traffic projections for the study area. It is assumed up to four (4) conference calls/online meetings including two (2) consultant personnel.

b. Develop Peak Hour Volumes
HDR will develop AM and PM peak hour volumes for the study area mainline segments, ramps and intersections for existing year, future year no-build, opening year build (one alternative) and future year-build (one alternative) scenarios.

C2.3 Traffic Operations Analysis

a. HCM Analysis

HDR will use Highway Capacity Software (HCS) 2010, which incorporates 2010 HCM methodologies, to perform level of service analysis for the AM and PM peak hours for the following scenarios.

- Existing year conditions
- Year 2040 no-build conditions
- Year 2020 and Year 2040 proposed build conditions (one alternative)

This task includes analysis of basic freeway segments, weaving areas, ramp junctions and intersections at the ramp terminals. Existing HCS analysis will be reviewed to determine if calibration adjustments are needed based on existing over-capacity conditions. If needed, HCS calibration will be conducted based on the details in the MLOU.

C2.4 Crash Analysis

a. Existing Crash Data Analysis

HDR will obtain and analyze the latest five years of available crash data for a crash analysis area including mainline and ramp segments within the study area. Crash analysis will consist of comparing the calculated crash rates within the crash analysis area to the statewide crash rate averages and identifying crash history patterns. Individual crash records for all fatalities over the last five years in the crash analysis area will also be reviewed.

b. Crash Prediction Analysis

HDR will use FHWA's Enhanced Interchange Safety Analysis Tool (ISATe) Build 6.09 to evaluate crash prediction for mainline segments and ramps within the study area. Crash prediction will be completed for 2040 no-build and 2040 proposed build conditions (one alternative) using ISATe default values for crash trends based on geometry and traffic demand. Predicted crashes for the 2040 no-build condition will be completed with and without the influence of existing crash data. The 2040 no-build crash prediction without the influence of existing crash data will allow for an unbiased comparison between the no-build and build conditions. Crash prediction will be reported in total number of predicted segment crashes and predicted crash rate in 100 million vehicle miles of travel (crashes/HMVMT).

C3 Develop IJR

C3.1 Develop Interchange Design Criteria

a. Develop Design Criteria

The Consultant will develop and submit design criteria to Woodbury County and the Iowa DOT. Criteria will conform to Iowa DOT and AASHTO.

b. Existing Conditions Evaluation – No Build Option

The Consultant will work with the Iowa DOT, Woodbury County, City of Sioux City, City of Sergeant Bluff, City of Salix, and SIMPCO as needed in gathering additional information including traffic data, previous studies, as-builts, percent trucks, roadway and intersection geometrics, and relevant historical data. The Consultant will evaluate existing geometry and characteristics for the road segments within the study area. Horizontal and vertical alignment, stopping and decision sight distance, and cross-section will be reviewed and compared to current design standards. This task will also include a review of pavement and bridge sufficiency ratings provided by the Iowa DOT. The existing operation traffic analysis will be evaluated and addressed in the Transportation and Traffic Analysis section of the work tasks.

C3.2 Develop Concept Plans

a. Develop Initial Alternatives

It is assumed that no more than two interchange configurations will be developed and evaluated. One interchange configuration will be a standard diamond. The alternative configuration would be a folded diamond with a rail crossing on the side opposite of the ramps. Only one interchange configuration, the preferred configuration will be carried through the complete process of evaluation, analysis, cost opinions and report documentation. Detailed traffic modeling will not be performed, but traffic numbers may be used to help guide the selection of geometries in generating the two alternatives.

Mainline improvements will be incorporated into the study if required as part of the folded diamond configuration.

Schematic level graphics over an aerial photo will be produced to depict the geometric alternatives. A "Functional" schematic with no level of detail may be produced in order to facilitate discussions. A "Conceptual" schematic showing minor details will be produced and included in the report documentation. This will include number of lanes and basic geometry.

b. Staging Review

Review construction staging scenarios to determine geometric design parameters that allows for the construction of the proposed interchange while maintaining traffic.

Detailed structural analysis is not a part of this scope of work. Traffic level of service on possible detour routes is not included in this scope of work but can be provided as an additional service.

c. Determine Approximate Bridge Parameters

Develop bridges at a conceptual level (approximate location, overall length and number of spans) for determining approximate cost and qualitatively reviewing constructability. Aerial based concepts will be the primary source of information.

d. Develop Initial Cost Opinions

Develop order of magnitude cost opinions for the initial concept(s). Cost opinions will include estimated design, construction and right-of-way. Construction costs will be based on major construction items such as paving and major structures. Other construction items such as earthwork, maintenance of traffic, lighting, etc. will be based on historical percentages of similar projects. Right-of-way impacts will be estimated by using assessed property values from the county assessor.

e. Evaluate Initial Alternatives (assumes more than one conceptual design)

The Consultant will complete a comparative screening evaluation of the initial concepts. The criteria at this level will be broad in nature and "order of magnitude". The focus will primarily be on the operational aspects of the concepts. The criteria that will be considered includes traffic operations/level of service, lane balance, route continuity, design uniformity, driver expectancy, ramp sequencing, perceived constructability, order of magnitude cost and potential environmental impacts (provided by the Iowa DOT).

f. Initial Alternatives Summary and Meeting (assumes more than one conceptual design)

The Consultant will prepare alternative graphics and a summary of the evaluation factors for presentation to Iowa DOT, County, Cities, and other stakeholders. Presentation of the information at a single meeting is anticipated with distribution of graphics and summaries ahead of the meeting. Review and determination of a preferred alternative is expected to occur at the initial alternatives review meeting. The review of the information and selection of a preferred alternative will be documented in the meeting minutes. Preparation of a formal technical memorandum is not anticipated.

C3.3 Alternate Configuration (with Rail Crossing) – Analysis

a. Capacity and Operational Analysis of the Alternate Configuration (Partial Cloverleaf / folded diamond with Rail Crossing)

The Consultant will evaluate the alternate configuration (Parclo in two quadrants on both sides of the Interstate) utilizing 2010 Highway Capacity Manual methodologies. If needed, SimTraffic will be used where necessary to determine the effects of queuing. This analysis shall be compared and contrasted to the standard diamond interchange operations before moving forward with detailed costs, staging review, and other refined work.

b. Analysis of the Effects of Rail on transportation systems in Sargent Bluff and Sioux City

Meet with Rail Providers to gain an understanding of the volumes and timeframes associated with the delivery and or pickup of rail transported materials to and from the industrial sites located south of the airport and west of Interstate I-29.

Analyze the effects of the rail movements on traffic within the Cities of Sergeant Bluff and Sioux City.

Quantify the cost of the associated rail activity within the cities of Sergeant Bluff and Sioux City.

Exploration of alternative connections of rail to industrial sites located south of the airport and west of Interstate I-29

Meet with the Rail Providers to explore alternate connections to the industrial customers south of the existing rail crossing under I-29 just north of Exit 141.

Prepare options and opinions of cost associated with additional rail crossing including possible standalone location and incorporation into interchange geometry for potential new interchange.

If preferred option is to incorporate rail crossing of I-29 into the interchange geometry expansion of the NEPA requirements may be necessary as part of finalizing the IJR documents for approval

c. Traffic Operations Graphics

Graphics will be prepared to display traffic volumes and the results of the traffic operations analysis. Some of these graphics may be developed during the MLOU; others will need to be prepared for the final report. The following graphics will be prepared:

1. Existing, 2020 and 2040 ADT map
2. Existing, 2020 and 2040 AM/PM peak hour traffic volumes
3. Initial Alternatives single line schematics showing number of lanes and HCS based travel performance indicator (LOS)
4. Existing year HCS travel performance output (ramp spacing and LOS) for both I-29 and 235th Street within the study limits.
5. 2040 No-Build HCS travel performance output (ramp spacing and LOS) for both I-29 and 235th Street within the study limits.
6. 2020 Preferred Alternative HCS travel performance output (ramp spacing and LOS) for both I-29 and 235th Street within the study limits.
7. 2040 Preferred Alternative HCS travel performance output (ramp spacing and LOS) for both I-29 and 235th Street within the study limits.

The graphics will be utilized for presentation purposes and within the Interchange Justification Report.

C3.4 Develop Alternative Matrix and Cost Opinions

a. Develop Matrix

The Consultant will develop a matrix portraying a qualitative evaluation of the concepts. Evaluation categories will include environmental effects, impacts on adjacent properties, relocations, cost, operations/level of service, local road impact, conformity to community planning and ability to stage construction.

b. Cost Opinions

Using broad unit costs, cost opinions will be prepared to assist in evaluating the two alternatives.

C3.5 Alternative Evaluation/Recommendation and Refined Geometry

a. Evaluation/Recommendation

The Consultant will recommend the preferred interchange form for further development and geometric refinement.

b. Refined Geometry

Perform additional concept development to refine the footprint and cost opinion of the preferred alternative. Additional conceptual development includes refinement of horizontal alignments, concept level vertical alignment, concept level templating and a more detailed constructability evaluation. It is assumed that the design level of detail will be minimal. All deliverable files will be in digital format, hard copies will be provided at the cost of printing if requested. It is assumed that detailed drainage design (ditch grades, culvert location and sizing, etc.) will not be evaluated at this stage of the project.

c. Bridge Concepts

Bridge concepts will not be evaluated in detail but will be looked at on a conceptual level (approximate location, overall length, and number of spans) for evaluating cost and constructability.

d. Updated Cost Opinion

Develop refined opinion of cost based on estimated quantities for major construction items (e.g. pavement, bridges, earthwork, walls, etc.) that are readily determined. Other items such as drainage, signing, lighting, etc. will be estimated based on historical percentages of total construction costs.

C3.6 Develop IJR Document

Interchange Justification Report

FHWA needs to approve all new or revised access points to the Interstate System prior to the development of a project. This project will follow the method established by the Federal Highway Administration's August 27th, 2009 Policy Statement as published in the Federal Register. The Consultant will also follow the guidelines established in the Iowa DOT document Process for New or Revised Interstate Access In Iowa dated May 2013. The Iowa DOT defines four steps to follow in the IJR process: DOT district discussions; concept statement; letter of request; preparing and submitting the IJR.

This report will focus on meeting the eight FHWA IJR criteria and identifying any potential environmental issues serious enough to modify or stop the project. The study document will be developed in accordance with the most recent Iowa DOT format and will be divided into the following sections unless otherwise directed by Iowa DOT:

a. *Executive Summary*

An executive summary will be prepared and inserted in the final version of the document.

b. *Introduction*

- Introduce the project
- Provide background information about the study
- Define the study area
- Define the planning process and FHWA justification criteria
- State the Purpose and Need

c. *FHWA Policy Statement # 1 – Access and Traffic Demand*

- Existing and Forecasted Traffic
- Level of Service – Existing, Existing with Design Traffic
- Systems Analysis, including identifying operational, safety or access problems (Note: For purposes of the scope of services, the systems analysis is assumed to be confined within the limits of this project. Analysis beyond the project limits would be provided by the Iowa DOT)
- Highway Capacity, including discussion of alternate transportation facilities

d. *FHWA Policy Statement # 2 – Alternative Transportation Improvements*

- Alternative development and alternatives
- Multi-Modal accommodations
- Recommended alternative

e. *FHWA Policy Statement # 3 – Safety and Operations*

- Crash History
- Crash Rates
- Safety Issues
- Opening year and design year traffic operations – Level of Service
- Recommended geometric configurations

f. *FHWA Policy Statement # 4 – Full Interchange Turning Movements*

- Review movements provided
- Accommodation for special purpose access (HOV, Bus, etc.)

g. *FHWA Policy Statement # 5 – Consistency with Regional Planning*
   - Compatible with LRTP
   - Land Use
   - Demographics (population, employment & development trends)
   - Consideration of adjacent transportation improvements

h. *FHWA Policy Statement # 6 – Future Transportation Network*
   - Review future transportation network based on SIMPCO and Iowa DOT provided data.
   - Modifications supported by comprehensive system study (Note: For purposes of the scope of services, the systems analysis is assumed to be confined within the limits of this project. Analysis beyond the project limits would be provided by the Iowa DOT)

i. *FHWA Policy Statement # 7 – Coordination with Development*
   - Relationship to existing and proposed street system
   - Coordination with related non-interstate development
   - Local circulation vs through traffic
   - Fiscal ability to complete related transportation projects, based on input from Iowa DOT and local agencies

j. *FHWA Policy Statement # 8 – Environmental Process*
   - Status of NEPA process
   - Overview of current environmental studies on file
   - Anticipated schedule
   - Nature of public support
   - Recent or future activities

k. *Conclusions and Recommendations*
   - Summarize the recommended alternative and identify specific issues of concern.
   - Address the need for modification of the Interstate Network.
   - Consider the project's consistency with local and regional land use and transportation plans.

l. *Appendices*
   - Traffic Projections
   - Highway Capacity/Level of Service Analysis Documentation
   - Engineering Design Details of Proposed Change
   - Local Government Comprehensive Plan/Comments

C3.7 Quality Review of IJR

a. Draft IJR Document

- HDR will conduct a quality review of the draft IJR prior to agency submittal. The review will provide comments on the draft IJR and coordination on addressing the comments.

b. Final IJR Document

- HDR will conduct a quality review of the final IJR prior to agency submittal. The review will provide comments on the final IJR and coordination on addressing the comments.

D. Environmental Documentation

MEC and HDR propose to prepare a streamlined EA, using the Iowa DOT template available for streamlining the NEPA process. As part of the streamlined NEPA process, HDR will complete the resource checklist and streamlined resource summary. If warranted by the findings of the streamlined EA, HDR will prepare a Finding of No Significant Impact (FONSI), with amendment to scope.

The following tasks are proposed for gathering background information and establishing a Geographic Information System (GIS) for use in description of the affected environment and prediction of environmental impacts. Existing data sources provided to the consultant will be incorporated as warranted, and supplemented as needed with additional information gathered.

1. Environmental Data Acquisition and Review

a. Develop Land Use Inventory
Gather geographic information system (GIS) and other data from Woodbury County, Sioux City, Sergeant Bluff, and Salix on current land use and proposed future land use, and incorporate in project GIS.

b. Review Recent Local and Regional Reports, Plans, and Documents
Acquire and review recent reports, plans, and documents from the County, Sergeant Bluff, and other relevant municipalities.

c. Public/Special Use Lands
Review databases to identify and delineate public and special use lands, and incorporate in project GIS.

d. Wetland Inventory
Acquire USFWS National Wetlands Inventory shapefiles to identify potential wetlands in the Study Area, and include in project GIS.

e. Historic and Archeological Resources
Access State of Iowa databases of historic and archaeological resources, including locations of any sites listed or eligible for listing on the National Register of Historic Places, and include database points and areas in project GIS.

f. Hazardous Waste/Contaminated Sites
Review state, county, and local databases of sites within the Study Area, and acquire site locations for inclusion in a project GIS.

g. Cemeteries
Review databases and aerial images of the Study Area for the location of public and private cemeteries, and input locations in project GIS.

h. Update Property Owner Information
Acquire county parcel database from the County to identify parcel boundaries and ownership for properties within the project Study Area, and include in project GIS.

i. Environmental Screening
Using GIS and other baseline information, perform environmental screening of preliminary concepts to identify potential fatal flaws based on environmental constraints. Screening will be conducted in a qualitative and semi-quantitative fashion because concepts will be preliminary in nature and screening would be done prior to field studies and detailed documentation and review of environmental resources.
Deliverables: A draft and final environmental screening technical memorandum will be prepared (PDF electronic format). GIS database.

2. Environmental Impact Analysis

Based on a review of the Iowa DOT streamlined EA template and a preliminary review of the Study Area, the resources identified below will be evaluated during the NEPA process. The following resource is not located in the Study Area and can be quickly addressed in the resource checklist: wild and scenic rivers. Consequently, this resource is not further discussed in the scope. Indirect impacts will be addressed under each relevant resource, as appropriate. Figures identifying environmental constraints in the Study Area will be prepared to show areas that would be impacted by the project.

The Iowa DOT streamlined EA template does not include a separate section for Section 4(f) or Section 6(f) resources. However, Section 4(f) and Section 6(f) resources will be addressed, as appropriate, in the Parklands and Recreational Areas, Bicycle and Pedestrian Facilities, and Wildlife and Habitat sections. Section 4(f) will also be addressed, as appropriate, in the sections for Historical Sites or Districts, and Archaeological Sites.

a. Land Use

Characterize current and future land use in the Study Area. Determine whether the project is consistent with future land use plans, and the potential impact of the project on land use.

b. Community Cohesion

Identify and describe how communities and/or specific neighborhoods could be impacted by the project.

c. Churches and Schools

Identify churches and schools in the Study Area, and address potential impacts of the project.

d. Environmental Justice

Characterize the project and nearby area based on low income and minority statistics to determine if an Environmental Justice (EJ) population is present using Census data. If present, determine potential impacts of the project on EJ populations.

e. Economic

Characterize the current economic environment in the Sioux City, Sergeant Bluff, Salix, and Woodbury County areas, and determine potential impacts of the project on the economy.

f. Joint Development

Describe current and future facilities, such as trails and parks, which can be developed or planned in conjunction with the project.

g. Parklands and Recreational Areas

Determine if any current or planned parks or recreation resources are present in the Study Area and assess potential impacts by the project. Determine if any Land and Water Conservation (LAWCON) funds were used for the establishment or construction of those resources. Development of Section 4(f) and Section 6(f) impact and mitigation documentation is not assumed to be necessary but could be added as a contract amendment to the proposed effort.

h. Bicycle and Pedestrian Facilities

Identify current or planned bicycle and pedestrian facilities in the Study Area, and address potential impacts by the project.

i. Right-of-Way (ROW)

HDR will document estimated ROW needed in acres (based on a comparison of existing ROW boundaries, parcel boundaries, and a preliminary impact line), and describe the process that would be followed for partial or full acquisition of property. HDR will note any permanent/temporary easements or impacts during the construction phase(s).

j. Relocation Potential

Document any displacements, providing the number of residences and/or businesses displaced, and showing the locations on a map. Note the process that would be followed to address displacements.

k. Construction and Emergency Routes

Document potential adverse impacts to air, noise, water quality, detours, congestion, etc. associated with construction. Document any potential adverse or beneficial impacts on emergency routes.

l. Transportation

Identify transportation modes in or near the Study Area and describe potential impacts that would be caused by the project.

m. Historical Sites or Districts

An Intensive Level Architectural Survey to identify architectural properties that may be present within the proposed Study Area will be conducted. The work for this effort is based on a review of an approximately 1,230-acre Study Area that surrounds I-29 between Port Neal Road and Old Highway 75, and approximately between 230th and 245th Streets, Sioux City, Iowa. An existing report prepared for a prior study has been provided to the consultant by the City of Sioux City, Iowa Department of Transportation, and Woodbury County. This report will be reviewed and incorporated into the study first and supplemented by additional studies only as needed. Coordination with the State Historic Preservation Office (SHPO) confirmed that although the results of the 2007 report were valid, SHPO standards dictate that because the report is more than 5 years old, all previously reviewed structures (and any structures approaching 45 years of age) would need to be surveyed and evaluated, and a new report prepared.

Prior to a field survey, a literature search will be completed to determine the location of previously recorded architectural properties and cultural resources surveys located within the Study Area plus a one-mile buffer. The literature search will consist of: a search of the online database of the National Register of Historic Places (NRHP); a review of historical atlases including the General Land Office maps, historical plat maps and aerial photographs; a review of relevant county and local histories; and, if applicable, reports of previous cultural resources investigations completed in the Study Area Research will be obtained via a trip to the State Historic Preservation Office (SHPO), as well as relevant local repositories. The information gathered as a part of this effort will be compiled and detailed in the survey report.

The intensive-level architectural field survey will focus on identifying previously unrecorded architectural properties and assessing the current conditions of previously recorded properties within the Study Area. The architectural survey will focus on identifying standing buildings and structures, 45 years of age or older (a 5 year buffer is incorporated to the typical 50-year eligibility timeframe to account for construction time). The architectural survey effort will be performed with parcel access and use a digital camera to document standing structures. The architectural survey will provide NRHP eligibility recommendations for any new or revisited site investigated as a part of this effort.

Iowa State architectural site forms will be completed and submitted to SHPO for each new and revisited architectural property reviewed during survey. An intensive-level architectural survey report will include the results of the literature search, survey methods, results of the survey, and will provide recommendations for additional data collection or site evaluation studies, if necessary. The report will include recommendations regarding the NRHP eligibility status of identified and/or revisited properties. The report will also include architectural site forms. Electronic and hard copies of the report will be provided to Iowa DOT. Hard copies of the reports will be prepared for submittal to the SHPO.

Deliverables: Intensive-level architectural survey report with GIS data to be provided to Iowa DOT. The architectural survey report will be combined into a single report along with the archaeological survey results, discussed in section n., below.

n. Archaeological Sites

A Phase I Archaeological Survey to identify archaeological sites that may be present within the proposed Study Area will be conducted. The work for this Phase I effort is based on a review of an approximately 1,230-acre Study Area (minus an approximately 74-acre corridor of I-29 and its ROW, and other roadways and associated ROW) that surrounds I-29 between Port Neal Road and Old Highway 75, and approximately between 230th and 245th Streets, Sioux City, Iowa. Existing reports prepared for a prior study were provided to the consultant by the City of Sioux City, Iowa Department of Transportation, and Woodbury County. These previous reports will be reviewed and incorporated into the study as warranted, and supplemented by additional studies only as needed. Coordination with SHPO confirmed that the results of the 2005 report were valid, and that only the remaining portion of the Study Area outside the previously surveyed area would need to be surveyed and evaluated.

Prior to a field survey, a literature search will be completed to determine the location of previously recorded archaeological sites and cultural resources surveys located within the Study Area plus a one-mile buffer. The literature search effort will be combined with that described above for the architectural background where information overlaps. This initial data will be used to help assess the potential for the Study Area to contain unrecorded archaeological resources. The literature search will consist of: an archaeological records search using the I-Sites online GIS database; a search of the online database of the NRHP; a review of historical atlases including the General Land Office maps along with historical plat maps and aerial photographs (may require visit to the State Historic Preservation Office (SHPO) or county historical society); a review of relevant county and local histories (may require visit to SHPO or county historical society); and, if needed, reports of previous cultural resources investigations completed in the Study Area will be obtained via a trip to SHPO. The information gathered as a part of this effort will be compiled and detailed in the final survey report.

Due to the project's location near a former channel of the Missouri River, intact deep deposits are possible. Therefore, prior to a field survey, a desktop geomorphological analysis will be completed to determine the potential for encountering deeply buried archaeological resources within the Study Area. This analysis will help guide the Phase I archaeological investigation efforts.

It is anticipated that the desktop geomorphological analysis will reveal the need for a geomorphological field investigation prior to the archaeological survey to verify and refine the location of the deeply buried soils with archaeological potential within the Study Area. Based on the 2005 archaeological report relying on geomorphological coring, an estimated minimum of 10 additional cores were assumed to be required for the Study Area outside the 2005 study area. The geomorphological investigation will also be used in conjunction with a pedestrian survey to refine areas with near surface (less than 1 meter deep) archaeological potential. If buried soils with archaeological potential are found within the Study Area in a location where they will be impacted by Project construction, subsurface testing will be required. Areas identified as having near surface archaeological potential will be investigated with shovel tests.

Based on previous geomorphological work in the study area, it is anticipated that approximately 30 to 50 percent of the 1,230 acres will have very low or no potential to contain archaeological deposits. Combined with the archaeological survey of the previous study area, archaeological survey will only need to be conducted on approximately 500 acres of the study area.

The Phase I archaeological survey will focus on identifying new archaeological sites within the Study Area. The archaeological field survey will consist of pedestrian survey at no wider than 10-m intervals, and subsurface investigations as needed (usually needed in intact areas where vegetation limits surface visibility to less than 25 percent and the slope is not excessive).

Further investigations may be completed on known archaeological sites during the survey to better define the vertical and horizontal extents of the site, and provide additional information concerning the site's integrity. If new sites are discovered, data will be gathered to record the sites' vertical and horizontal boundaries, as well as integrity. Recommendations regarding the NRHP eligibility status of each site will be provided.

Areas of previous disturbance will be described and documented with digital photographs and may be shovel tested where appropriate to demonstrate disturbance, but will not systematically surveyed. A GPS loaded with the project information will be used to guide the survey crew and will be used to catalog any newly discovered sites. Recommendations for further investigations at identified sites will be provided. Iowa State archaeological site forms and/or architectural site forms will be completed and submitted to OSA and/or SHPO as appropriate for each new and revisited archaeological site and/or architectural property reviewed during survey.

A Phase I archaeological survey report will include the results of the literature search, survey methods, results of the survey, and will provide recommendations for additional data collection or site evaluation studies, if necessary. This report will be combined with the architectural survey results, as described above, resulting in a single cultural resources report. The report will include recommendations regarding the NRHP eligibility status of identified and/or revisited sites. The report will also include archaeological site forms.
Deliverables: Electronic and hard copies of the report will be provided to Iowa DOT. Hard copies of the reports will be prepared for submittal to the SHPO. GIS data, based on collected archival material or field surveys, will be provided to Iowa DOT.

o. Cemeteries

Identify and public or private cemeteries in the Study Area, and note any impacts of the project.

p. Wetlands

Perform a wetland delineation and identify other waters of the U.S. that exist in the Study Area. The wetland delineation will include agricultural wetland determinations.

- The wetland delineation will be performed in accordance with the *1987 Corps of Engineers Wetland Delineation Manual* and the 2010 Midwest Regional Supplement. Documentation of wetlands and other waters of the U.S. will be provided and documented on Water of the U.S. Determination Data Forms. Photographs will be taken at all wetlands, sample locations, and identified waters of the U.S.
- HDR will review the Study Area using the five most recent years of available aerial photography that received normal precipitation values as defined by the NRCS WETS table. Wetland signatures will be identified via aerial photography analysis and field verified, including the presence/absence of hydric soils.
- Wetland boundaries will be mapped using mapping grade (sub-meter) GPS technology.

Deliverables: A Draft and Final Wetland Delineation Report will be prepared (PDF electronic format). GIS shapefiles of delineated wetlands and waters of the U.S. will also be provided. Any additional photographs taken during field work activities will be made available to Iowa DOT upon request.

q. Surface Water and Water Quality

Identify surface water in Study Area and describe groundwater environment. Briefly describe potential water-quality impacts along with all applicable mitigation measures. Identify potential groundwater well impacts and proper well abandonment, and note mitigation for Project.

r. Floodplains

Using Flood Insurance Rate Maps or digital data from the Federal Emergency Management Agency, identify any floodways or 100-year floodplains and incorporate their boundaries in the GIS within the area potentially affected by the project. Address project's compliance with Executive Order 11988. Calculate the linear feet of stream crossings and the acreage of project construction within floodplains using digital data, assuming that no digitization of floodplain boundaries is required. The need for a floodplain permit will be identified if required.

s. Wildlife and Habitat

Describe typical wildlife and their habitat in the Study Area, and address potential impacts of the project.

t. Threatened and Endangered Species

HDR will review the Study Area for potential woodland and other natural habitat that might support Federal and state threatened and endangered species listed for Woodbury County. Gather information on natural areas and potential wildlife habitat. Data gathering will be completed in conjunction with the field survey for wetlands. Federally and State-listed threatened and endangered species information will be obtained from the USFWS (IPaC) and Iowa Natural Heritage Database. HDR will contact Iowa DOT prior to initiating efforts relating to the Indiana bat and northern long-eared bat to determine if any new guidance is available.

A desk-top analysis of aerial photography will be conducted to guide the field reconnaissance study for habitat; no species-specific surveys are included in this scope. Conduct a field review of potential habitat for listed federal and state species. Determine whether potential summer roost trees for Indiana bat and northern long-eared bat are present in the Study Area. Provide photographs of potential roost trees, record their location with GPS and document the tree species, estimated height, diameter breast height, and percent of peeling bark. Complete the Indiana Bat Summer Habitat Documentation form. Field-verified boundaries of any potential habitat locations (plants and animals) will be recorded using GPS equipment or aerial photography and entered into the GIS.

Provide photographs, a table, and discussion in a technical memorandum to help support the presence or absence of suitable habitat for each listed species. HDR will complete Iowa DOT Determination of Effect forms summarizing the results of the habitat survey. Based on the findings of the survey and agency review of the Determination of Effect forms, Iowa DOT will coordinate with the resource agencies to determine if additional fieldwork is required. If additional fieldwork or species-specific surveys are required, the effort could be added as an amendment to the contract. It is assumed that the scoped effort would be performed under informal consultation guidelines.
Deliverables: Determination of Effect forms, draft and final technical memorandum to summarize results of the review for threatened and endangered species habitat, and GIS shapefiles of any identified habitat.

u. Woodlands

Gather information on potential woodlands in the Study Area. Guidance for defining and recording woodland areas will be based on the OLE Manual (2009) and updated guidance of July 18, 2014. HDR will contact Iowa DOT prior to initiating field investigations to determine if any new guidance is available. Woodland areas within the Study Area will be confirmed during field studies and mapped on aerial imagery using a GPS unit with submeter accuracy.
Deliverables: Draft and Final Woodland Memorandum, and GIS shapefiles of woodlands.

v. Farmland

If the project requires five acres or less of new ROW per mile or per site, preparation or submittal of Form AD-1006 is not required. If required, complete Form AD-1006 to determine potential for farmland impacts. If the compiled score of Part VI of Form AD-1006 is 60 points or more, the form and project information will be submitted to the to the Woodbury County representative of the Natural Resources Conservation Service (NRCS) for their completion of the remainder of the form. HDR will coordinate with NRCS to receive the updated form, and with Iowa DOT to address potential mitigation if the total score is 160 points or more.
In accordance with the requirements of Iowa Code 6B, HDR will identify and provide notification to owners of agricultural land of 10 acres or more, who would be impacted by the proposed action. Notification would occur as part of distribution of the EA.
Deliverable: Form AD-1006.

w. Noise

HDR will contact the Iowa DOT prior to initiating this task to determine if a noise model is needed; if a model is needed, HDR will: develop a noise model for the project per Iowa DOT, Policy 500.07, "Highway Traffic Noise Analysis and Abatement," revised 7/29/11 (predicted impacts will be based in part on traffic modeling data provided by Iowa DOT); identify the location of potential sensitive receivers in the Study Area; and perform noise monitoring at selected locations to help characterize background noise in the Study Area. Using traffic and roadway data from Iowa DOT, conduct a noise analysis using the most current approved version (currently 2.5) of the Traffic Noise Model (TNM) for determining the potential impacts to commercial and residential areas and potential sensitive receivers. If any predicted noise levels are above FHWA and Iowa DOT noise abatement criteria, determine if abatement measures would be feasible and reasonable. Prepare a Noise Report to document the study and findings. *Deliverables*: Draft and Final Noise Report (PDF electronic format). TNM noise modeling files will be made available upon request.

x. Air Quality

HDR will use standard language from Iowa DOT, and add project-specific language as needed.

y. Mobile Source Air Toxics (MSATs)

HDR will use standard language from Iowa DOT, and add project-specific language as needed.

z. Energy

Energy consumption (including fossil fuels, labor, and materials), both in project construction and as a result of the project, will be discussed in the EA. Note if the project would reduce congestion, and improve travel times and level of service, which would result in a reduction of energy consumption.

aa. Contaminated and Regulated Material Sites

An Initial Regulated Materials Review will be performed. A database search using the Iowa Department of Natural Resources Facility Explorer and other federal and state databases will be performed. A windshield tour of the corridor will be performed to verify the location of facilities and sites within the corridor, and photos will be taken of areas of concern and to document the status of facilities within the Study Area. Listed and unlisted sites will be evaluated generally following the most current version of ASTM E 1527-13 and ranked according to risk per the OLE Manual (2009).
Deliverable: A draft and final Regulated Materials Memorandum (PDF electronic format).

bb. Visual

Describe viewshed(s) in Study Area, and qualitatively assess visual impact in view from the new interchange and view of new interchange. Discuss any aesthetic enhancements being considered for design.

cc. Utilities

The County will provide information on current utilities and their location (via digital data if available). HDR and MEC will discuss utility conflicts and proposed corrections with the County, and note if any service disruptions would be more than temporary in nature. HDR will summarize the information in the EA.

dd. Cumulative Impacts

Identify other current and reasonably foreseeable projects in the area of the project (such as the ongoing I-29 project in Sioux City, and projects identified in the Woodbury County Envision 2050 document). Determine and describe the potential for any adverse or beneficial cumulative impacts from the proposed project in consideration of past, current, and future impacts to the surrounding environment.

ee. Impact Summary

Develop a table to summarize impacts of the preferred alternative, as documented for each resource analyzed.

3. Prepare NEPA Document

HDR will prepare a streamlined EA, according to the Iowa DOT streamlined EA template. The Resource Checklist will be included on the back of the front cover, with the checklist and rationale for eliminating resources from detailed discussion included in an appendix. Chapters/Sections of the EA will include: Description of the Proposed Action, Project History, Purpose of and Need for the Proposed Action, Alternatives, Impacts, Disposition, Comments and Coordination, and Appendices. HDR will prepare all figures for the EA.

a. Prepare Preliminary EA

HDR will write the EA using resource analysis described in Phase D Task 2. The document will be provided for review in Microsoft Word, with Adobe Acrobat PDFs of figures and appendices. The County and Iowa DOT may provide comments via hard copy, e-mail, Microsoft Word, or scanned mark-up. The document will be revised in response to comments, with comment responses prepared as warranted.

b. Prepare EA

Prepare EA for FHWA review, and revise EA based on FHWA comments. Upon FHWA approval and signature, an electronic version of the EA (containing all text, figure, and appendix files) will be prepared and provided to Iowa DOT in Adobe Acrobat PDF format on a CD, accompanied by the final Microsoft Word files. HDR will reproduce and mail the Signature EA for agency and public distribution. Before printing the EA for distribution, HDR Will estimate the number of hard copies required and confirm the number of copies to be printed with Iowa DOT's NEPA section.

c. Prepare Finding of No Significant Impact

Following public review of the Signature EA, a preliminary draft Finding of No Significant Impact (FONSI) or a Notice of Intent to prepare an Environmental Impact Statement (EIS) will be prepared. HDR will prepare responses to comments received during the public and agency review of the EA. A FONSI would address agency and public comments, and document the public hearing (should Iowa DOT determine that a hearing is necessary). The decision document would also include: a cover page for FHWA signature, new information since publication of the EA, the basis for the FONSI, special conditions for location approval, and reproduction of agency letters; the FONSI will meet requirements in the latest version of Iowa DOT guidance.

The decision document would be revised in response to comments, with comment responses prepared as warranted. Upon FHWA approval and signature, an electronic version of the FONSI would be prepared and provided to Iowa DOT on a CD. HDR would reproduce and mail the FONSI, with the Signature EA attached, for agency and public distribution.

4. NEPA Public and Agency Involvement

a. Public Involvement Plan

Consultants will work with the County to develop a Public Involvement Plan to detail the effort involved with engaging the community of Woodbury County through outreach, one (1) public information meeting, and development and maintenance of a stakeholder database. The County will provide the data of stakeholders and consultants will be responsible for creating a database to track and manage all communications with stakeholders. Maintain/Update Mailing List Consultants will maintain and update the mailing list on a regular basis, specifically before distribution of materials. The County will be responsible for inviting property owners and other stakeholders. The consultants will provide a public mailer invitation.

b. Prepare Meeting Notifications

Consultants will prepare a meeting notice for the County to notify the public of the PIM. The County is responsible for advertising in the paper of record.

c. Prepare for and Conduct Public Information Meeting (PIM)

One public information meeting (PIM) will be held. If possible, this meeting will be held in conjunction with a meeting on preliminary concept design to avoid duplication of effort. Consultants will prepare materials for the PIM consisting of (1) two copies of aerial scroll with proposed alternatives and potential impacts (30"x40" color); (2) display boards (up to 6 boards (30"x40" color; mounted on form core)), (3) Fact Sheet suitable for a mailer or handout at the PIM (8.5"x11" color – assume 75 copies, double-sided); and (4) name tags, sign in sheet, and comment form. All materials will be provided in English only. If an EJ analysis identifies a Hispanic speaking population with limited English proficiency requiring Spanish versions of materials, preparation of those materials could be added as a contract amendment. The Fact Sheet will include the project purpose and need, summary of the project design, features and relevant facts, as well as a project map. The County will be responsible for identifying and securing a suitable location for the PIM.
Six consultant (2 MEC, 4 HDR) representatives would attend the PIM, and be available to address questions on environmental and engineering issues.

d. Prepare Comment Log and Responses for PIM

Consultants would compile a log of verbal comments heard and written comments received, and propose responses for County to provide to commenters. Consultants will use a database to manage all communications with agencies and stakeholders. A contact and comment management protocol will be established and included in the Public Involvement Plan.

e. Public Hearing

Optional task if required by Iowa DOT that can be addressed in a contract amendment.

f. Summary and Disposition of Hearing Testimony

Optional task if required by Iowa DOT that can be addressed in a contract amendment.

g. Briefings to Local Interested Groups and Organizations

Two MEC representatives would provide project briefings to local interested groups and organizations. Eight briefings are assumed to be provided. A standard project PowerPoint presentation will be created for all briefings.

5. Governmental Agency Involvement

a. Iowa Intergovernmental Review (IIR)

HDR will prepare an early coordination letter and map of the Study Area and a brief write up of the project for Iowa DOT to submit to appropriate agencies (based on Iowa DOT guidance). Iowa DOT will provide a current, standard coordination contact list which will be supplemented by the Consultants to include local contacts. Feedback from the agencies will be used to address and identify significant environmental factors, obtain comments regarding potential impacts of the proposed action, and obtain information on permits and approvals that may be required.

b. Periodic Meetings with Local Elected Officials

MEC will have 8 periodic meetings with local elected officials to update the project status, and provide and receive feedback.

c. Coordination with State and Federal Review Agencies

In addition to the IIR coordination noted above, coordination with review agencies would be conducted via email and teleconference to acquire information and ask questions on agency requirements.

d. Local Government/Utilities Coordination

HDR and MEC will coordinate with the County and utilities via email and teleconference to determine what utilities are located in the Study Area.

e. Tribal Coordination

Iowa DOT will use coordination information prepared for government agencies, and coordinate with relevant tribes through approval by FHWA as the lead federal agency. HDR will coordinate with Iowa DOT to provide materials, and on feedback provided from tribes.

6. IJR Environmental Support

   a. Environmental Data Review Forms
      Prepare Iowa DOT environmental data forms for project initiation.

   b. Environmental Process
      Draft text in support of FHWA Policy Statement #8 of the IJR.

7. QC Review of Environmental Documents

   Perform quality control review of each environmental deliverable (see Section G for compiled list of deliverables) and review proposed changes for update of the deliverables.

8. Administrative Record/Electronic Records Management System

   During the Project, HDR will compile electronic formats of documents used in the NEPA decision making process. At the completion of the project, HDR will submit an Administrative Record/Electronic Records Management System CD of the files to support the NEPA process.

9. Field Survey Coordination

   MEC will work with the County to acquire property access for HDR scientists and cultural specialists.

E. Traffic Data Collection

The Consultant will work with the Iowa DOT, Cities, and the local MPO as needed in gathering additional traffic data and information for the adjacent interchanges and roadways within the study area necessary for the traffic analysis. The Consultant also anticipates assistance from local authorities in obtaining other studies or community plans that would have an impact or relevance to the analysis.

1. ADT Counts

   The Consultant will obtain average daily traffic (ADT) counts on Port Neal Road near 235th Street and also on 235th Street on both sides of I-29.

2. Turning Movement Counts

   It is anticipated that 2015 turning movement counts will be available at the adjacent interchange ramp terminal intersection and on mainline I-29 from the Iowa DOT. The Consultant will collect turning movement counts at the Port Neal Road/235th Street intersection and at the 235th Street/Old Hwy 75 intersection.

3. Travel Time Runs (as needed or required)

   It is anticipated that travel time runs will not be required for this project. In the event that travel times are necessary, the Consultant will collect the data as directed by the Iowa DOT.

4. Signal Timings and Corridor/Intersection Data

   It is anticipated that no existing signal timing will be needed as the adjacent interchange intersections are currently stop controlled. The Consultant will collect roadway and intersection geometrics primarily from google earth pro. The Consultant will make up to two on-site inspections of conditions in the study area. Observations will be to familiarize staff with existing conditions, verify traffic operating conditions and to review proposed geometry and impacts in the field.

F. **Key Understandings/Assumptions:**

Estimated acreage of the Study Area (approximately 1,230 acres is within the delineated Study Area, but approximately 74 acres are estimated to be within interstate ROW and don't require archaeological review) was based on an assumed Study Area to include the conceptual interchange location shown in Woodbury County Envison 2050, an estimated buffer area to the north and south, an area sufficient to include required access roads, and the current rest area that would likely need to be demolished to accommodate a new interchange and maintain an adequate spacing between interstate access points.

MEC will develop a landowner letter and associated graphics for the County's distribution to landowners within the study area that initiates the right of entry process. The County will supply MEC with landowner contact information, including phone numbers. The County will coordinate right of entry for landowners that did not provide a response or responded "No" to the initial attempt for access permissions. MEC will attempt to contact landowners by phone prior to entering into property. If access is denied or the owners can't be reached, MEC will coordinate with the County for their resolution of the access issue prior to HDR performing any field studies. It is assumed that this coordination can be completed prior to the September/October schedule for field work initiation.

Past studies done for a City of Sioux City interchange feasibility project will be made available to the consultants for our determination on their usefulness. The studies were conducted approximately a decade ago, and have acceptable shelf lives depending on the resource. For example, wetland delineations have a 5-year shelf life, and regulated material reports typically need to be updated on an annual basis. The archaeological survey provided to date covers only approximately 25 percent of the Study Area proposed for this study, and access was not provided for a portion of the Study Area. Architectural surveys and reports need to be redone after several years because integrity could degrade or be improved, and properties that weren't previously reviewed based on their age less than 50 years, could qualify for review. The consultants will consider use of past reports after acquisition and review.

The estimate for the archaeological Phase I evaluation was based on a review of aerial photography, which includes current roads and mostly plowed fields within the Study Area, and a predicted 30 acres/person day survey coverage.

The following are detailed assumptions/understandings used for developing the methodology and cost for the archaeological and historical sites and districts evaluations:

- This project is a federal undertaking subject to Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800).
- Iowa DOT will assume federal agency responsibilities for the purposes of the Section 106 process.
- At the County's request, HDR will consult directly with the Cultural Resources Section of the Iowa DOT.
- HDR will propose the Area of Potential Effect (APE) for the project study.
- All investigations will adhere to The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation [48 FR 44716 44740] (National Park Service 1983) and the State of Iowa's Guidelines for Archaeological Investigations in Iowa (Kaufmann 1999).

- A geomorphological investigation will be conducted to inform archaeological survey strategy; archaeological survey will only occur in the areas of low to high probability for intact deposits as identified by the geomorphological investigation, which are assumed to not exceed 500 acres of the 1,230-acre study area. Additional acreage requiring archaeological survey will require additional scope and fee.
- Areas identified as having deeply buried archaeological potential would require additional survey utilizing deep testing methodology (hand-excavated bucket augurs, backhoe trenching, etc.). This geomorphological field investigation would require additional scope and fee. However, based on the previous report, this is unlikely to be needed.
- Iowa SHPO will approve of the survey strategy informed by geomorphological investigations, as described above.
- If more than six months lapse between the literature search and field survey, an updated records search using the I-Sites online GIS database as well as the online database of the NRHP will be conducted to update the background research for the APE plus a one-mile buffer.
- All architectural property investigations will be conducted with parcel access using a digital camera with a minimum 12-megapixel resolution.
- No environmental or physical barriers will hinder the survey.
- Changes to the APE after survey has begun could require a contract amendment and extend the schedule.
- GIS digital data on previous surveys and findings is available and accessible for the APE via the Iowa State Archaeologist I-sites database.
- MEC, working with the County, will acquire landowner permission where needed prior to HDR beginning the survey. All investigations will adhere to The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation [48 FR 44716 44740] (National Park Service 1983) and the State of Iowa's Guidelines for Archaeological Investigations in Iowa (Kaufmann 1999).
- All archaeological investigations will be conducted using pedestrian survey with transects spaced at 10 meter intervals as appropriate to the ground visibility, slope, previous disturbance, and land use.
- Subsurface testing via shovel testing or bucket augering will be completed in intact areas where vegetation limits surface visibility to less than 25 percent and the slope is not excessive. The subsurface investigation will occur on a 15 meter grid. Subsurface testing will also be used to demonstrate previous disturbance as needed.
- A GPS system with minimum 1-meter accuracy will be used to document the locations of subsurface tests as well as archaeological site locations.
- No human remains will be encountered.
- Phase II evaluations or Phase III data recovery for any newly identified sites are not included in this effort but could be covered under a contract amendment to this scope or a separate scope and budget.
- Artifacts identified during the Phase I survey will be collected and retained for analysis until after the Section 106 process is complete.
- After the Section 106 process is complete, HDR will send letters to landowners to inquire as to their wishes regarding the artifacts recovered from their property.
- If a landowner requests return of the artifacts, HDR will return the artifacts to the landowner.

- If the landowner does not want the artifacts returned, HDR will arrange for the artifacts to be curated at a federally approved curation facility in accordance with 36 CFR 79 (Curation of Federally-Owned and Administered Archeological Collections).
- Curation costs for artifacts will require a contract amendment.
- The archaeological and architectural (with an additional archaeological area) reports will be used to the extent applicable to reduce field effort and report preparation.

It is assumed that a maximum of three (3) 20 minute recording periods would be performed during noise monitoring. Observed traffic counts and characterization would be conducted during the noise monitoring. The noise study is assumed to analyze one build alternative and the No-Build Alternative.

The regulatory materials reconnaissance review will involve no sampling or analysis of potential contamination. If the regulatory materials review results in a recommendation of sampling, analysis, and reporting, the task could be added as a contract amendment.

The scope includes effort for identifying if permits are needed, but not for preparing any permit applications.

Iowa DOT does not require local projects to use the NEPA/Section 404 Concurrence Point process, but it can be used by locally led projects. Based on a preliminary review of the Study Area, it doesn't appear that there would be future issues with the U.S. Army Corps of Engineers on Section 404 permitting, so the Concurrence Point process is not proposed for this project.

Iowa DOT would use the Early Coordination letter for agencies to conduct their coordination effort, in conjunction with FHWA, with relevant tribes.

Part VI of the NRCS AD-1006 form is assumed to be completed and require submittal to NRCS.

No individual species surveys, including mist net surveys, are included in this effort but could be added as a contract amendment.

While this proposal includes identification of 4(f) resources and NEPA analysis relevant to potential effects to those resources, this Scope of Work does not include a detailed 4(f) evaluation and accompanying 4(f) statement. Should a 4(f) evaluation and statement be required, an addendum to this Scope of Work will be submitted upon request from Iowa DOT.

This proposal does not include a Section 6(f) determination and evaluation. Should a Section 6(f) evaluation be required, an addendum to this Scope of Work will be submitted upon request from the Iowa DOT.

To portray the extensive size of the Study Area color 11x17 figures will be prepared; for Chapter 5 of the EA, there will be an estimated two figures with at 500 feet/inch. For the EA, it is assumed that a total of 4 8x11 and 4 11x17 color figures would be prepared.

It is assumed that four versions of the EA will be prepared to facilitate County review, Iowa DOT environmental lead review (preliminary EA), Iowa DOT review (EA), and Iowa FHWA review (Signature EA). Unless otherwise requested, an electronic copy of the preliminary EA document will be provided to the County and Iowa DOT for review and approval. Once Iowa DOT comments are resolved, they will be addressed in a timely fashion in the "draft" final EA document. A revised electronic version of this document will be submitted to the Iowa DOT to forward to the FHWA for review. Once FHWA comments are received, they will be addressed in a timely fashion in the EA document. A revised electronic version of this document will be approved by the County and submitted to the Iowa DOT for Iowa DOT and FHWA signatures. A Final version of the document will be compiled in a PDF and provided to Iowa DOT, including the County, Iowa DOT, and FHWA signatures of the EA.

For the purposes of the scope, 50 total copies of the Signature EA are proposed for distribution, Iowa DOT use, and HDR and MEC use.

It is assumed that a total of 10 agency comments and 10 public comments (including those received at the hearing) would be received on the EA and addressed.

For the purposes of this scope, the effort of preparing a FONSI is assumed, but does not preclude the preparation of a Notice of Intent to Prepare an EIS as warranted. If the EA determines that a FONSI is warranted, it is assumed that a total of 2 11x17 color figures would be prepared for the FONSI; coordination with Iowa DOT's NEPA manager will be conducted for approval prior to preparing figures. It is assumed that four versions of a FONSI would be prepared to facilitate County review, Iowa DOT environmental lead review (preliminary decision document), Iowa DOT review (decision document), and Iowa FHWA review (final decision document). For the purposes of the scope, 25 total copies of the Signature EA and FONSI are proposed for production and distribution.

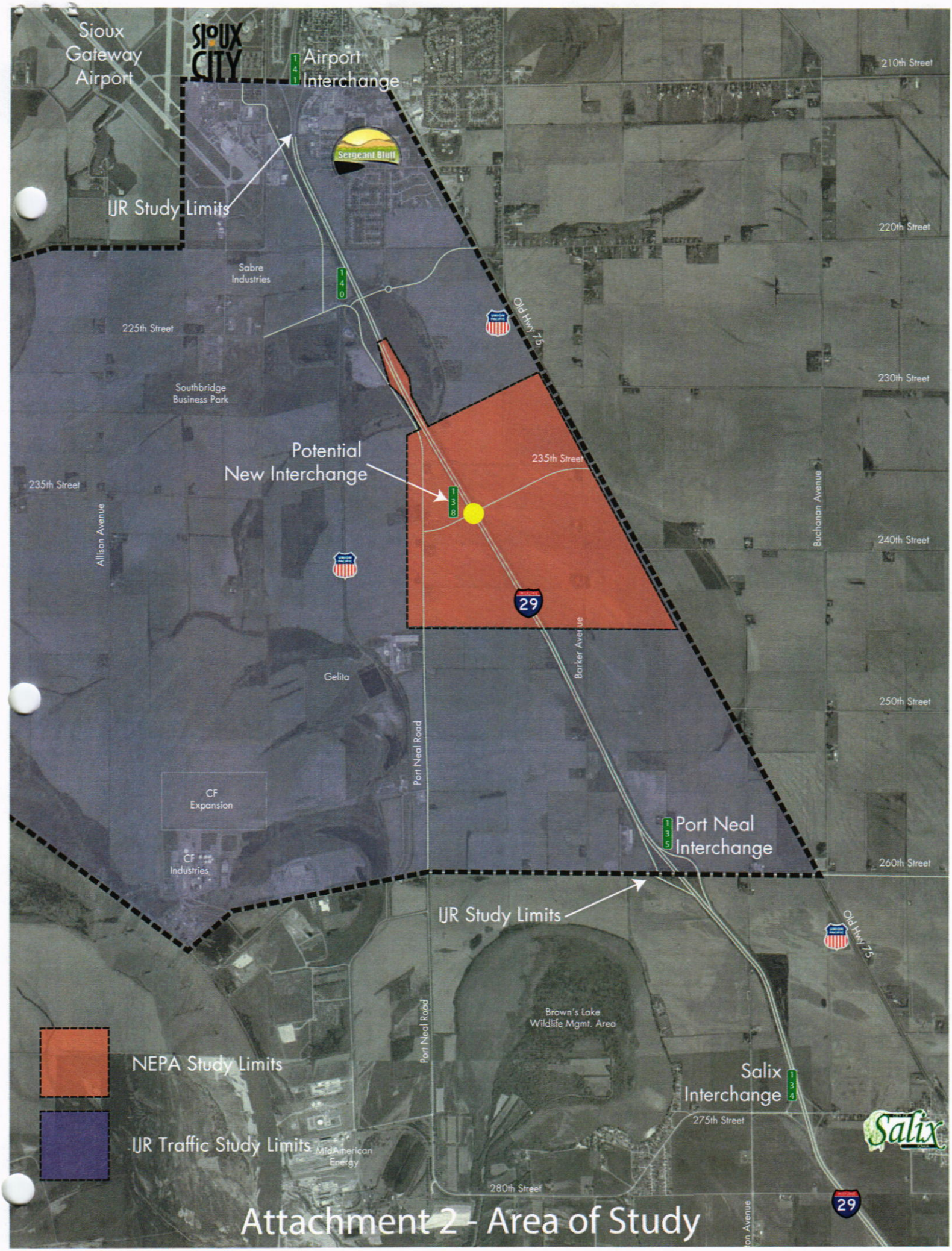
The PIM is assumed to be an open-house format, with no formal presentation.

HDR and MEC will communicate with Iowa DOT staff throughout the process for clarification of various issues. If significant concerns are identified during the assessment process, representatives of the Iowa DOT will be notified immediately and probable actions required to resolve these issues will be recommended.

G. Deliverables

Submittals will be in electronic format, with hard copies provided of the Signature EA and FONSI (if warranted by findings of the EA). The following is a list of deliverables for the Project:

1. Draft IJR Document
2. Final IJR Document
3. Draft and Final Environmental Screening Technical Memorandum
4. AD-Form 1006
5. Draft and Final Noise Report
6. Draft and Final Wetland Delineation Report and associated GIS data
7. Draft and Final Threatened and Endangered Species Technical Memorandum
8. Determination of Effects Forms and associated GIS data
9. Draft and Final Woodlands Technical Memorandum and associated GIS data
10. Phase I Archaeological Survey and Intensive Level Architectural Survey Report including updated State of Iowa archaeological and architectural site forms and associated GIS data
11. Draft and Final Regulated Materials Memorandum and associated GIS data
12. Agency coordination letters
13. Preliminary EA, Draft EA, Signature EA, Preliminary FONSI, Draft FONSI, and Signature FONSI documents
14. Administrative Record/Electronic Records Management System CD
15. GIS database.


Sioux Gateway Airport
SIOUX CITY
141
Airport Interchange
210th Street
Sergeant Bluff
IJR Study Limits
220th Street
Sabre Industries
140
225th Street
Old Hwy 75
230th Street
Southbridge Business Park
Potential New Interchange
235th Street
235th Street
138
Allison Avenue
Buchanan Avenue
240th Street
29
Barker Avenue
Gelita
250th Street
Port Neal Road
CF Expansion
135
Port Neal Interchange
CF Industries
260th Street
IJR Study Limits
Old Hwy 75
Brown's Lake Wildlife Mgmt. Area
Port Neal Road
NEPA Study Limits
Salix Interchange
134
275th Street
Salix
IJR Traffic Study Limits
MidAmerican Energy
280th Street
29
Attachment 2 - Area of Study

ATTACHMENT 3
Woodbury County Interchange Justification Report
Schedule

Schedule

NEPA/EA

- April/May 2016 – Agency coordination letters
- Summer 2016 - Field work completed for wetlands, woodlands, threatened and endangered species, regulated materials, and cultural resources
- Fall 2016 – Draft Resources Reports - Wetland Delineation Report, Threatened and Endangered Species Technical Memorandum and Determination of Effects Forms, Phase I Archaeological Survey and Intensive Level Architectural Survey Report, Regulated Materials Memorandum
- Winter 2016 – Preliminary Draft EA to County and Iowa DOT for review
- Summer 2017 – Draft EA to Iowa DOT and FHWA for review
- Fall 2017 – Signature EA issued to Public and Agencies
- Winter 2017 – FONSI (if warranted by EA findings)

IJR

- April/May 2016 – Agency coordination letters, Concept Statement, and Letter of Request Submittals
- August 2016 – Methodology Letter of Understanding
- February 2017 – Draft IJR Document to County for review
- Spring 2017 – Draft IJR Document to Iowa DOT and FHWA for review
- Fall/Winter 2017 – Final IJR Document to Iowa DOT and FHWA for review

The Consultant shall complete the work within an approximate 24 month time-frame.

The nature of IJR and NEPA documents inherently have fluctuations in the schedule due to review cycles, input from outside agencies and the public, and resolution of complex planning and design issues. Completion of the various tasks is also dependent on timely review and approval by the County, Iowa DOT and other public authorities. The schedule is subject to change.

Project No.: WBY 2614027
Project Name: Woodbury County Interchange Justification Report
Project Manager: Jeff Schug

ATTACHMENT 4
Woodbury County Interchange Justification Report
Fees

Payment to the **Engineer** shall be made on a monthly basis, within 30 days of invoice for work completed to date:

	Time and Materials
Phase A Project Management	$ 117,289
Phase B Topographic Data Acquisition	$ 58,236
Phase C Interchange Justification Report	$ 203,120
Phase D Environmental Documentation	$ 231,610
Phase E Traffic Data Collection	$ 38,154
TOTAL CONTRACT	$ 648,409

Phase totals estimated, total contract amount will be the basis of compensation.