Automated Pavement Distress Data Collection Services

Request for Proposal

Iowa Department of Transportation

Introduction

The Iowa Department of Transportation’s (DOT) Office of Materials is interested in a pavement data collection vendor or infrastructure management consultant to provide automated pavement distress collection and evaluation services for the Primary (State roads), and Secondary (city and county Federal Aid Eligible (FAE)) highway systems in Iowa. If your firm is interested in providing the described services, please submit a proposal stating your ability and availability to complete this work.

Project Background

Since 1997 the Iowa DOT Office of Materials has contracted with a vendor to provide automated collection of pavement distress data on the Primary and Secondary road systems on a two year cycle (roughly one half of the mileage being collected each year). Data is collected on roughly 10,000 miles of Primary and Secondary roadways each year. Roadway surfaces in Iowa include Portland Cement Concrete (PCC) and Hot Mix Asphalt (HMA), including asphalt surface treatments. The mileage is split approximately one half on the Primary system and one half on the Secondary system. The data that is collected is provided to the DOT where the data is summarized from the test sections to the DOT’s pavement management sections. The data collection supports the Iowa Pavement Management Program (IPMP) on FAE miles depending on participation. The state has approximately 25,000 miles of FAE roads.

Project Scope

The project will include collection of pavement distress data on a 2 year cycle. The contract period will be for four years (two collection cycles) plus an option for DOT to extend the contract for two more years (a third collection cycle). The number of miles to be tested is approximately between 9,500 and 12,500 miles each year with a 4 year average of 10,500 miles/year. Data is collected in one direction on 2-lane highways and in both directions on multi-lane divided highways. There are approximately 6,550 miles of 2-lane highways and 2,875 directional miles of 4-lane divided highways. See the attached map (Appendix A) showing the counties where pavement data is to be collected in the even and odd numbered years.

Data Collection Requirements

Automated collection will include the following data:

- Pavement roughness (IRI)
- Faulting (Jointed PCC pavements)
- Rutting (HMA surfaces)
- Cracking on HMA and PCC pavements
  - Alligator cracking (only HMA)
  - Transverse cracking
  - Longitudinal cracking
  - Longitudinal cracking in the wheel path
- PCC pavement joint distress (D-cracking, joint spalling)
Pavement distress type and severity for the above distresses will be as defined in the “Distress Identification Manual for the Long-Term Pavement Performance Project” (SHRP-P-338). All data will be reported in English units.

The project requires continuous testing that provides 100% coverage of the network and roadway surface (not a sample). Data will be collected and reported on bridges. The beginning and end of bridges need to be flagged in the database for easy identification.

Iowa has both transversely tined and longitudinally tined PCC pavements, therefore multiple lasers (for example RoLine Laser or equivalent) will be required for collection of IRI data.

The vendor will need to have the ability to summarize the data to agency defined fixed segment lengths approximately 50 feet in length.

The vendor will provide coordinates for segments using a differentially corrected GPS system, or by using the Iowa Real Time Network for post-processing.

**Required Minimum Accuracy**

- IRI (+/- 5% compared to Class 1 Profiler)
- Faulting (+/- 0.10 inches)
- Rutting (+/- 0.10 inches)
- Distress (+/-10% compared to DOT manual survey)

**Quality Control**

Prior to beginning project, the vendor’s vehicles will survey eight (8) control sites (4 asphalt and 4 concrete sites) of 1,500 feet each, to be selected by the DOT. Each control site will have three repeat runs collected. The DOT will provide coordination for control sites and will conduct manual surveys of control sites to provide a baseline. In addition, the control sites will be recollected by the vendor at least once per month, per testing vehicle throughout the course of the contract to verify accuracy, repeatability, and consistency of all deliverable data.

**Data Acceptance Criteria**

1. Data Completeness

   a. Of the total network miles contracted, a minimum of 98% of the collectable miles will be delivered to the DOT. Areas closed off for construction are not considered collectable miles.

   b. Of the delivered data, 100% of the description items will be populated and accurate. Description items include: system, route, direction, and location (begin and end latitude/longitude).

   c. Of the delivered data, 98% of the sections will be completely populated with data values, not including any expected limitations. For example, IRI in low speed areas.
2. Data Accuracy

a. Of the delivered miles there should not be more than 10 consecutive fixed segments missing (500 feet total). Re-collection will be required if more than 10 consecutive fixed segments are missing.
   i. Of the remaining 2% of sections, a section will be recollected if it is missing more than 2% of the length of the section.

b. Of the delivered data, 95% of the values will be within the required minimum accuracy.
   • IRI – must not deviate more than +/- 5% from DOT measured values.
   • Pavement Distresses – must not deviate more than +/- 10 % from the DOT manual survey.

Pavement Images for Quality Control

The DOT will require delivery of pavement images for its quality control process. Images representing 5% of the annual mileage collected on the Primary system (approximately 250 miles) will be delivered when the data is delivered to the DOT. It will consist of 1 mile segments that are randomly selected within the collected area as determined by DOT. The vendor will also provide the DOT with analysis software to allow DOT staff to manually identify and automatically quantify distress type and severity in the images.

Field Evaluation of Vendor’s Systems

As part of the selection process the DOT will conduct an evaluation of the proposing vendor’s data collection, data reduction, and reporting systems. Each vendor will collect data on a maximum of 50 miles of pavements representing a cross section of Iowa pavement types. The test sections will be manually rated according to the new SHRP manual to provide a baseline with which to compare the automated results.

Each test section will be collected 3 times by the vendor following the “Data Collection Requirements” above.

Vendors will have between June 23 and July 23 in which to arrive in Iowa and collect data on the test sections. During the time they are in Iowa they will also give a brief presentation of their system to DOT staff. Once the data is collected, the vendors will have 15 business days to process the data and provide it to the DOT. The vendors will provide a 2 week license for use of the analysis software. After the processed data is received, the DOT will evaluate the results based on completeness of data, consistency of data, and accuracy of distress data.

Contract Information

Vendors should provide a plan for the number of miles that can be collected in calendar year 2010. This should be based on a length of the data collection season the vendor believes is reasonable. The notice to proceed for the initial year’s work is anticipated to be in September 2010.

Contracts will be unit price contracts negotiated each year and subject to available funding.
Data Delivery

Data delivery will occur in batches at regular intervals throughout the collection season. Typical season is from May through November. All Primary system data (approx. 5,000 miles) will be delivered by October 31. The final data delivery schedule will be negotiated as part of the contract.

Liquidated Damages

There will be Liquidated Damages based on the delivery schedule. Liquidated Damages will be negotiated as part of the contract.

General Requirements

The consultant and their subconsultants are required to be prequalified as defined in the Iowa DOT’s Policy and Procedure Manual, Policy No. 300.04, for the duration of the contract. Work under this contract will require prequalification in work category 316 Remote Sensing. Failure to remain prequalified during the contract will result in cancellation of any remaining portion of the contract. Details regarding prequalification are available at the Consultant Utilization webpage, http://www.prof-tech-consultant.dot.state.ia.us/.

It is the policy of the Iowa DOT that Disadvantaged Business Enterprises (DBEs) and Targeted Small Businesses (TSBs) shall have the maximum practicable opportunity to participate in the performance of Iowa DOT contracts. Funding of the work under this contract is expected to involve federal-aid highway funds. There is no DBE goal for this contract. When a DBE goal is not established, the Iowa DOT still encourages the spirit of the program to be incorporated in the proposed contract whenever possible. A list of certified DBE firms may be found at http://www.dot.state.ia.us/contracts/contracts_eeoaa.htm. A list of TSB firms may be found at https://dia.iowa.gov/tsb/.

Selection Information

Emphasis should be placed upon providing information concerning your proposed project approach, similar projects your firm has recently performed for State DOTs including the number of miles collected, and the availability and qualifications of your key staff. Also included should be a list of clients (references). The proposal may include additional information, as deemed appropriate, subject to the overall length restriction established in Proposal Requirements.

The selection committee will review and evaluate the proposals submitted based on the following criteria and the weighted value assigned to each. The weighted value of each criterion is indicated.

50% - Results of data collection field evaluations
15% - Project approach and data reduction methods
20% - Recent experience with similar projects for DOTs
15% - Project schedule and availability to meet schedule

The selection committee does not anticipate the need for oral interviews.
The Selection Committee will recommend the top three vendors to the Office of Materials. The Office of Materials will make the final selection and will negotiate the fees with the selected vendor.

Contacting any selection team member other than the RFP contact person is inappropriate.

**Proposal Requirements**

Please provide the following information in the order listed:

1. Include your firm’s approach to addressing the identified tasks, your understanding of the project’s scope, key issues and relevancy to Iowa’s transportation system. Briefly discuss similar projects the members on your team have completed in the past five years.
2. Include the name, qualifications, experience, office address and availability of the contract manager as well as the manager in charge of each major work task. This information should include the identification of similar projects managed or participated in by this individual. The selection of a contract manager and work task managers by a firm will constitute a commitment by that firm and NO substitute managers will be allowed without prior written approval by the Iowa DOT.
3. Include experience and qualifications for any sub-consultants to be used and work they will perform.
4. Include a detailed resume, summary of current workload and a time commitment for each professional or technical person to be assigned to the project. Identify the principal or manager who will serve as the project manager.
5. A project schedule outlining the timeline and estimated completion date of each major task identified in your scope of work. This should include a schedule with a description of all deliverable products throughout the period. A graphical representation of the proposed schedule should be included.
6. The location of the office where the majority of work will be performed.
7. A disclosure of all work for other clients that may be affected by work on the proposed contract to avoid a potential conflict of interest.

The proposal may include additional information, as deemed appropriate, subject to the overall length restriction established in Proposal Requirements.

Cost information should not be submitted as part of the proposal.

The proposal must be submitted as a single electronic PDF and be formatted to print on 8.5” x 11” pages. The proposal must be limited to 30 single-sided pages. All pages will be counted including: proposal covers, cover letter, dividers, etc. The maximum size limit of a proposal is 7 megabytes.

On the cover page of the proposal, please include title of the RFP for which the proposal is submitted and the email address of the person who should receive the results of the selection. Inclusion of promotional literature of a general nature will not be considered in the selection process.

The electronic proposal must be submitted via email to chris.brakke@dot.iowa.gov. An email will be sent confirming receipt of the proposal within 30 minutes or by 1:00 p.m. on the submittal deadline date, whichever is later.
For a firm to be considered, their proposal must be received by 3:00 pm on June 22, 2010.

Any technical questions or questions regarding this RFP shall be submitted via email to chris.brakke@dot.iowa.gov. Any questions about this RFP must be received by noon on June 15, 2010. Questions and answers regarding this RFP will be posted with the RFP on the Consultant Utilization website, http://www.prof-tech-consultant.dot.state.ia.us.

Public Records Law

The Iowa DOT will treat all information submitted by a consultant as open records following the conclusion of the selection process. Open records are public records that are open for public examination and copying. The Iowa DOT's release of records is governed by Iowa Code Chapter 22 and 761 IAC Chapter 4. Consultants are encouraged to familiarize themselves with these laws before submitting a proposal.

Statement of Non-Discrimination

The selection and contract are subject to the provisions of Executive Order 11246 (Affirmative Action to Insure Equal Employment Opportunity). Federal and state laws prohibit employment and/or public accommodation discrimination on the basis of age, color, creed, disability, gender identity, national origin, pregnancy, race, religion, sex, sexual orientation or veteran’s status. If you believe you have been discriminated against, please contact the Iowa Civil Rights Commission at 800-457-4416 or Iowa Department of Transportation's affirmative action officer at 515-239-1414. If you need accommodations because of a disability to access the Iowa Department of Transportation’s services, contact the agency's affirmative action officer at 800-262-0003.