

A REQUEST FOR PROPOSAL FOR PROFESSIONAL SERVICES CONTRACT

Department of Highways Professional Services Procurement Bulletin 2018-03 Statewide Underwater Inspection

This document constitutes a Request for Proposals for Professional Service Contract from qualified individuals and organizations to furnish engineering services as described herein for the Commonwealth of Kentucky, Department of Highways.

I. PROJECT DESCRIPTION

County – Statewide

Project Description – One consultant shall be selected to provide full in-depth underwater structural inspection services of the substructure elements of approximately 225 various statewide bridges over a five year period (2018 to 2022).

II. PROJECT INFORMATION

Project Manager – Mark Swieterman, P.E.

User Division – Bridge Maintenance

Approximate Fee – \$2,000,000 Underwater Bridge Inspection

Contracting Method – Cost Plus a Fixed Fee

Project Funding – Federal Funds

III. PURPOSE AND NEED

Perform underwater structural inspections of bridges to evaluate bridge scour, determine the underwater structural condition of bridge substructures, and channel cross sections. Provide bridge scour countermeasures design plans and specifications. Evaluation of observed scour and streambed stability within the limits of the bridge.

IV. SCOPE OF WORK

The selected Consultant will be required to perform underwater structural inspections of the bridges in accordance with current NBIS standards as specified by the Division of Maintenance and KYTC's Bridge Inspection Procedures Manual. The Consultant will perform emergency UW bridge inspection services as defined by KYTC. The inspection reports shall be in digital format consistent with recent reports and compatible with the Division of Maintenance's current software and documenting procedures. The bridge inspection reporting will include entering the completed underwater inspection reports, summary notes, pertinent underwater photographs, National Bridge Inspection (NBI) coding information (60, 61, 92B, 93B), determine observed scour, and element level condition ratings into BrM. In some cases, a bridge may require a full two year routine NBI and element level inspection in addition to the underwater inspection. The Consultant shall provide underwater acoustic images, GPS/Hydrographic surveys, and equivalent images of

the scour conditions as noted below in the hydrographic survey requirements. In addition, documentation will include chart-recorded channel cross section data, graphs, and digital photographs. The Consultant shall expedite notification to KYTC due to critical bridge inspection findings. The final underwater inspection report shall bear an engineer's seal that is licensed in the State of Kentucky. The Kentucky Transportation Cabinet's Central Office and each District Office where UW work is performed must be notified before each scheduled underwater dive(s). The lead UW diver must be a licensed professional engineer in the State of Kentucky. **All diving operations shall be conducted in accordance with 29 CFR Part 1910, Subpart T- OSHA Commercial Diving Operations (including Directive Number CPL 02-00-151), as well as the International Consensus Standards for Commercial Diving and Underwater Operations, 6.2 Edition, published by the Association Diving Contractors International (ADCI). Additionally, all diving personnel shall possess valid commercial diver certification cards issued by the ADCI.** All divers must be equipped to meet or exceed all KYTC, State, OSHA, and Federal underwater diver safety requirements. KYTC requests a copy of UW divers diving certificates. KYTC reserves the right to modify this UW contract to add or remove bridges.

Hydrographic Survey Requirements (Ohio, Tennessee, LBL, Cumberland, Big Sandy, Lake Cumberland, Harrington Lake and Kentucky River Bridges)

All surveys shall be done using a multi-beam echo sounder unless otherwise specified due to size or depth. The following requirements shall be considered:

- The surveys shall be performed under the direct supervision of a licensed engineer in the State of Kentucky who shall stamp and sign all deliverables.
- Surveys shall extend 50 feet upstream and downstream of the bridge fascia.
- Bathymetric data shall be collected at 400 kHz and using a typical swath of 120° unless otherwise specified.
- As determined by the State, bathymetric data in areas of interest shall be collected at 700 kHz for greater resolution.
- As determined by the State, bathymetric data on bridge substructures shall be collected within 3 feet of the water surface at the time of the survey.
- The survey shall use RTK (Real Time Kinematic) positioning in the field, and all positioning data shall be post processed.

Minimum Sonar Requirements

All sonars to be used on this project shall have the following:

- Sonar shall be a multi-beam echo sounder capable of 700 kHz with focused 0.6° x 0.6° resolution.
- Range resolution shall be 2cm or greater.
- Sonar shall be roll stabilized.
- Sonar shall have rotatable swath sector or a mount adaptor capable of coverage within 5° of the water surface.

Minimum Positioning Requirements

All positioning systems and collected data on this project shall adhere to the following requirements:

- All bathymetric survey points shall be positioned utilizing IAPPK (Inertially Aided Post Processed Kinematic) positioning.
- SBET (Smoothed Best Estimate of Trajectory) files shall be produced through network GPS solutions.

Deliverables

The following deliverables will be required for each hydrographic survey.

- An ASCII file for each survey which shall be formatted as Easting, Northing, and Height, tab or space delineated, U.S. Survey Feet, gridded 1 foot by 1 foot, in the appropriate horizontal state plane and vertical datum determined by site.
- The deliverables for each survey shall be determined by the State, but will include electronic copies in portable document format (PDF) including contoured plan views of the survey area in 1 foot, 2 foot or 5 foot intervals as specified, channel cross-sections at specified intervals, and isometric views of areas of interest.
- All surveys shall be placed in a digital format which can be viewed using software at no cost to the State. The software shall allow the State to take cross sections and export the data into an ASCII file.
- RMS Reports of SBET file shall be delivered with all bathymetric submittals.
- SBET files shall be included with final deliverables.

Other project deliverables will be covered and discussed in more detail during the scoping meeting, which should include representation from Central Office as well as District personnel.

V. DBE REQUIREMENT

None

VI. STRUCTURES TO BE INSPECTED

[Statewide Underwater Bridge Inspections – 2018 - 2022](#)

The list of KYTC structures for underwater inspection are preliminary and may be added or removed as needed. KYTC reserves the option to modify the Consultant agreement to include additional underwater inspections and scour assessments to the package listed above. The Consultant shall separate the costs of each underwater bridge inspection and include the bridge identification number for all bridges for each fiscal year.

VII. SPECIAL INSTRUCTIONS

One Consultant shall be selected to provide engineering inspection services. The contract duration is five (5) years with a total maximum upset funding limit of \$2,000,000.

Instructions for Response to Announcement can be found at:

<http://transportation.ky.gov/Professional-Services/Pages/Respond-to-an-Announcement.aspx>

VIII. PREQUALIFICATION REQUIREMENTS

To respond to this project, the Consultant project team must be prequalified in the following areas by the response due date of this advertisement.

[Maintenance/Bridge Maintenance Services](#)

- Underwater Structure Inspection

IX. PROCUREMENT SCHEDULE

Dates other than Response Date are tentative and provided for information only.

- Bulletin Posted – September 12, 2017
- Response Date – October 4, 2017 by 4:30 PM ET (Frankfort Time)
- First Selection – October 9, 2017
- Final Selection – October 25, 2017
- Pre-Design Conference – November 1, 2017
- Fee Proposal – November 10, 2017
- Contract Negotiations – November 22, 2017
- Notice to Proceed – December 21, 2017

X. PROJECT SCHEDULE

Draft Report of Inspection Services • Within 30 calendar days after inspection (BrM Inspection entry within 7 days after initial field inspection)

Final Inspection Report • The District Office has 14 calendar days after the draft report is submitted to review, submit report changes, and notify Central Office and the Consultant by email

Upload Inspection Report • The Consultant has 10 calendar days to make all report changes from Central Office and the District Office, to finalize the report and upload into BrM

Completion of All Underwater Engineering Services • 54 calendar days

XI. EVALUATION FACTORS

Consultants will be evaluated by the selection committee based on the following, weighted evaluation factors:

1. In-house capacity to perform the required UW inspection services. (20 Points)
2. Performance on past or similar type projects. (20 Points)
3. Demonstrate familiarity with regulatory requirements and KYTC procedures for underwater inspection of bridges (Certified Diver and KY Licensed Professional Engineer) with experience in underwater bridge inspections and scour evaluations. (20 Points)
4. Project approach to completing the assigned task. (10 Points)
5. Capacity to comply with schedules. (10 Points)
6. Computer development skills with emphasis on new and innovative technology. (5 points)

7. Consultant's offices where work is to be performed. (5 points)

75% - 100% of work accomplished in Kentucky offices (5 points)

26% - 74% of work accomplished in Kentucky offices (2 points)

0% - 25% of work accomplished in Kentucky offices (0 points)

XII. SELECTION COMMITTEE MEMBERS

1. Mark Swieterman, P.E., User Division
2. Erin Van Zee, P.E., User Division
3. Mikael Pelfrey, P.E., Secretary's Pool
4. Rachel Catchings, P.E., Secretary's Pool
5. Mark Day, P.E., Governor's Pool