



Request for Qualifications (RFQ) Hydrologic and Hydraulic Analysis for Floodplain Mapping

The Kansas Department of Agriculture, Division of Water Resources (KDA-DWR) has been a Cooperating Technical Partner (CTP) with FEMA since 1999. Work identified in this RFQ may include hydrologic and hydraulic analysis modeling, floodplain mapping, map production and technical assistance. KDA-DWR has undertaken a nearly statewide 2D modeling initiative to produce initial Base Level Engineering (BLE) data. This data is being enhanced within the Data Development phase to produce new regulatory floodplains in areas with outdated mapping as identified by the CTP or through the Discovery process. This work will be used to generate regulatory Flood Insurance Study (FIS) data and Digital Flood Insurance Rate Maps (DFIRMs) for designated areas within the State of Kansas.

KDA-DWR seeks to obtain two main contractors that can perform all tasks described in this RFQ but is also seeking a firm that has expertise in levee projects, and multiple technical assistance contractors to perform smaller scale engineering work for watersheds or communities. These categories are not mutually exclusive, and applicants are encouraged to apply for all types of projects if appropriate. Master contracts are awarded for 5 years, and then are eligible for renewal at the end of the period of performance if satisfactory work is completed.

Specifications:

The following tasks are associated with FEMA's Risk Mapping, Assessment and Planning (MAP) program and applicants applying for the main contracting position will be scored upon their knowledge and experience with the below tasks. All main contractors must be familiar with and abide by FEMA Guidance and Standards at <https://www.fema.gov/flood-maps/guidance-reports/guidelines-standards>.

- Project Risk Identification and Mitigation
- Perform Discovery
- Perform Community Engagement and Project Outreach
- Perform Field Survey
- Develop Topographic Data
- Prepare Base Map
- Develop Hydrologic Data
- Perform Independent QA/QC Hydrologic Data
- Develop Hydraulic Data
- Perform Independent QA/QC Hydraulic Data
- Perform Floodplain Mapping

Perform Independent QA/QC Floodplain Mapping
 Develop FIRM Database
 Produce Preliminary Map Products
 Develop Flood Risk Products
 Distribute Preliminary Map Products
 Post-Preliminary Map Production

Relevant guidance and standards for each stage of the mapping process is summarized within the table below:

Applicable Guidance	Perform Discovery	Risk Communication and Outreach	Acquire Base Map	Perform Field Survey	Perform Independent QA/QC: Basemap Data	Develop Topographic Data	Perform Independent QA/QC: Topographic Data	Develop Hydrologic Data	Perform Independent QA/QC: Hydrologic Data	Develop Hydraulic Data	Perform Independent QA/QC: Hydraulic Data	Perform Floodplain Mapping (Including Redelineation)	Perform Independent QA/QC: Floodplain Mapping	Develop FIRM Database	Develop Flood Risk Datasets	Produce/Distribute Preliminary Map Products	Post-Preliminary Map Production
Guidance for Flood Risk Analysis and Mapping and Associated Technical References	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Guidance Documents for Stakeholder Engagement	X	X												X	X	X	X
FEMA Policy Standards for Flood Risk Analysis and Mapping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geospatial Data Coordination Guidance	X		X			X											
Automated Map Production (AMP) Best Practices														X	X	X	X
FEMA NFIP Metadata Profile Specifications	X		X	X	X	X	X	X		X		X	X	X	X	X	X
Procedure Memorandums	X	X													X	X	X
44 Code of Federal Regulations Parts 65, 66 and 67	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

MIP Accounts and FEMA Quality Reviews (QR):

Main contractors must have or acquire Mapping Information Platform (MIP) accounts for project data submittals into the FEMA database for various stages of the mapping process. Strong preference is given to firms with existing MIP accounts and/or experience. Monthly calls and progress reports are held with KDA-DWR to discuss project status and a report is provided monthly to indicate percent of project completion. Below is a summary of the FEMA Quality Review (QR) MIP workflow. The contractor is responsible for all relevant QR data uploads to the MIP and for ensuring the data passes these reviews. Details on these reviews can be found within the FEMA Quality Management Guidance at: https://www.fema.gov/sites/default/files/documents/fema_quality-management-guidance.pdf

QR1 (Validate Draft FIRM Database)

The execution of the QR1 review includes the upload of the draft FIRM database and metadata to the MIP and evaluated using DFIRM Validation Tools (DVT) and Metadata Manager (Metaman) to ensure an error-free submission.

QR2 (Validate Preliminary FIRM)

The execution of the QR2 review includes the upload of the Preliminary FIRM database and metadata, FIRM image files, FIS report, draft Summary Of Map Actions (SOMA), and all Letters of Map Revisions (LOMRs). The FIRM database and metadata are evaluated using DVT and Metaman to ensure an error-free submission.

QR3 (Validate Preliminary FIRM)

The execution of QR3 review includes a 10% review of the preliminary FIRM panels, FIS report, preliminary SOMA, and copies of LOMRs that revise the effective FIRM. SID 507 compliance has also been added to the QR3 level review.

QR4 (Validate Proposed Flood Hazard Determination (FHD) Notice)

The QR4 Review validates the Proposed FHD Notice, Appeal Period Docket, and Appeal Start Letters.

QR5 (Validate Final FIRM Database and FIRM Panels)

The QR5 process validates that the FIRM panels are in agreement with the final FIRM database. The final database and metadata are evaluated using DVT and Metaman to ensure an error-free submission.

QR6 (Check LFD before Distribution)

The QR6 process validates the Letter of Final Determination (LFD) prior to the distribution of the final products. The LFD Summary Sheet/Docket and FEDD Files and LFD Questionnaire are submitted and reviewed concurrently with QR5 and QR7.

QR7 (Validate MSC Deliverables)

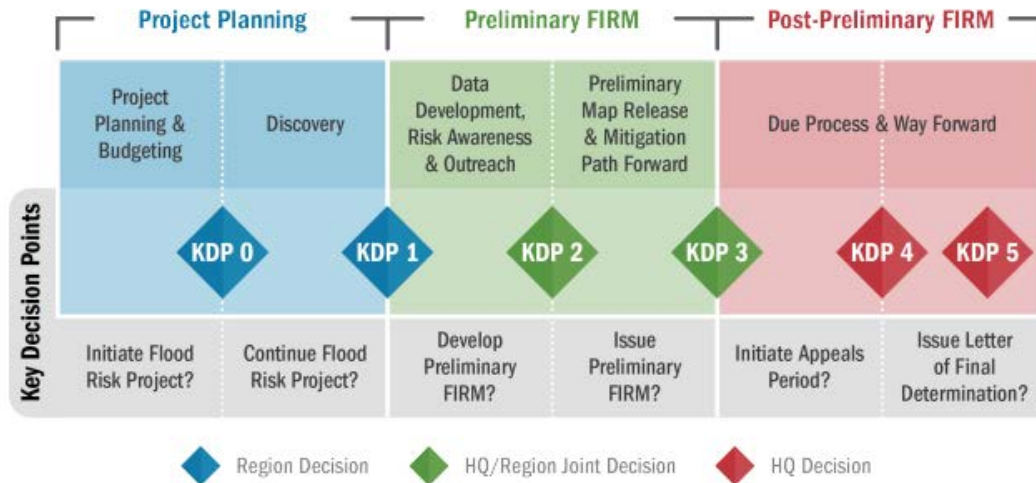
The QR7 process validates that the FIS, FIRM and associated paperwork are in compliance with FEMA standards before delivery to the Map Service Center (MSC).

QR8 (Validate MSC Deliverables)

The QR8 process validates compliance of the final products before delivery to the end users.

Key Decision Point Process:

The contractor will assist KDA-DWR as needed with the completion of FEMA’s required Key Decision Points as noted below. These are important decision points within the Risk MAP process and are required to move a project forward. KDA-DWR primarily submits these but may rely on assistance from contractors during the submittal process.



Risk MAP Meetings:

Selected main contractors will be responsible in assisting with the following Communication Engagement and Project Outreach meetings related to the Risk MAP process as relevant to the specific project.

Kick-Off Meeting

Contractor will provide scoping lines in a GIS file for use in display on KDA-DWR’s web map prior to the Kick-Off meeting. KDA-DWR will reach out to the communities to set up the meeting either in person or virtual. Presentation slides will be provided by the contractor and sent to KDA-DWR for review prior to the meeting. Contractor is expected to provide support during the meeting in the form of handouts, assisting with portions of the presentation, and helping to answer questions. A virtual meeting is considered adequate for this initial meeting. Virtual meetings are typically KDA-hosted using Zoom, however the ability to host virtual meetings is expected of contractors.

The Kick-Off meeting agenda will include introductions, a brief overview of Risk MAP Discovery, technical assistance and round table discussions using the KDA-DWR hosted interactive web map as the focal point to discuss areas of concern, flood risk data needs, possible future mitigation actions, and risk communication and public awareness issues. The meeting will wrap up with a discussion of what the next steps are.

Discovery Meeting

KDA-DWR or the designated contractor will conduct phone interviews with floodplain administrators and other officials to initiate a two-way information exchange. The calls will serve to answer questions the

floodplain managers may have, help identify flood risk data available, and identify flood risk concerns and areas of interest prior to the Discovery Meetings.

Community map review will occur at the Discovery phase of the project where BLE data has been created. This will allow us to better target areas of enhancement for Data Development, as well as to engage communities earlier in the map review process. After a review of the initial draft BLE floodplains, technical assistance will be discussed again to encourage mitigation actions. Discovery meetings will be held in person whenever possible to facilitate map review and discussion, but contractor is expected to assist with any hybrid meeting equipment to allow for virtual attendance as well.

The Discovery process will include a Discovery map and report developed by the contractor. The contractor will assist with the development of meeting materials including handouts, agendas and data layers needed for hosting on the KDA-DWR web viewer such as Changes Since Last FIRM (CSLF), etc. Upon the conclusion of Discovery, the contractor will coordinate with KDA-DWR to prepare SID 620 letters for any projects that are funded for Data Development. The letters signify the 30-day review of the planned models to be used in the project. Contractor is responsible for the creation and mailing of these letters with review by FEMA and KDA-DWR.

Local Levee Partnership Team (LLPT) Meeting

If a known hydraulically significant levee is in the geographic project area, then per the Guidance for Flood Risk Analysis and Mapping - Levees, February 2018, a LLPT meeting formation and appropriate level of engagement is conducted. A Levee Analysis and Mapping Process (LAMP) Data capture task(s) will be created in the MIP to collect non-engineering data from the LLPT meetings for each hydraulically significant levee. KDA-DWR seeks a contractor knowledgeable in levee systems and certification standards in 44 CFR 65.10 for levee related projects.

Data Development Kickoff Meeting

This meeting will serve as an in-depth discussion of the steps involved in taking the BLE data through enhancements and the upcoming timeline. At times, time gaps can exist between the completion of Discovery and when Data Development begins, so this meeting will serve as a refresher of the upcoming project with a more accurate timeline. Contractor will be responsible for presentation slides as well as assisting with the presentation and answering questions during the meeting. A virtual meeting is considered sufficient for this meeting.

Flood Risk Review (FRR) Meeting

This meeting will be focused on community review of the enhanced BLE data. A web review link will be sent out with the floodplain information that was taken from the BLE phase and enhanced during the Data Development phase. Contractor is required to send the draft DFIRM database to KDA-DWR in the form of a geodatabase of shapefiles for use in the web viewer 2 weeks prior to the meetings. Supplemental base flood elevation lines will be provided for all Zone A floodplains.

Contractor will coordinate with KDA-DWR and FEMA on SID 621 letters that will be sent out in conjunction with the Flood Risk Review (FRR) meeting to officially notify community officials of the 30-day opportunity

to review the draft Flood Insurance Rate Map (FIRM). The contractor will be responsible for generating and mailing those letters in addition to creating meeting materials such as presentations, handouts, agenda, and providing datasets for use in the KDA-DWR web map. The FRR meeting will be held in person whenever possible with an option to join virtually. Contractor will respond to community comments and ensure any updates are carried throughout all mapping products.

Public Open House

KDA-DWR will work with the local communities to organize a Community Open House to allow the public an opportunity to view the draft FIRM and FIS report. All community comments will be responded to by the contractor (with review from KDA-DWR) before setting up the Open House, and an updated draft DFIRM database will be provided to KDA-DWR to update the web viewer. A shapefile of Letter of Map Change (LOMC) status will be provided to KDA-DWR prior to the open house for use in the web viewer. Draft flood risk products including the water surface elevation grid will be part of an MXD or GIS package provided by the contractor for use within the meeting along with the LiDAR, and draft DFIRM database.

The Open House will be held at a central location in the watershed with one meeting per county. A public commenting period will run for 30-days. Contractor is responsible for attending the open house, providing fact sheets and handouts, as well as making any adjustments as deemed necessary based on public feedback and providing written responses to public comments. Open Houses are held prior to preliminary issuance of the maps. In the event that an in-person Open House is not allowed, a virtual option will be considered.

Consultation Coordination Officer (CCO) Meeting

This meeting will cover the next steps after preliminary maps including the 90-day appeal period, 30-day comment period, Letters of Map Amendment (LOMA) and the SOMA, Letter of Final Determination (LFD), and 6-month adoption period. Contractor will be responsible for helping to present at the meeting and publishing the Federal Register notification and newspaper publications to initiate the appeal period. A virtual meeting is considered adequate for the CCO Meeting unless in person is request by the communities.

Risk MAP Tasks:

Task 1: Develop Topographic data

The LiDAR data will be used for hydrologic analysis, hydraulic analysis, floodplain boundary delineation, and/or testing of floodplain boundary standard compliance. The topographic bare earth Digital Elevation Model (DEM) LiDAR data for these studies is accessible from the Data Access and Support Center (DASC) in Kansas. The Contractor will be responsible for converting the information into FEMA submittal format and making required submissions in the MIP. The Data Capture Standard (DCS) must be met for this deliverable to be acceptable.

Task 2: Prepare Base Map

Base map Preparation activities consist of obtaining and formatting the digital base map for the project. Activities also include the review of the base map and obtaining the necessary

documentation/verification that base map data source(s) may be used and distributed by FEMA. This task is equivalent to the Acquire Base Map task in the MIP. KDA-DWR requests contractor typically uses National Agriculture Imagery Program (NAIP) imagery unless local imagery is provided. Transportation lines and political boundaries are derived from DASC.

Task 3: Develop Hydrologic Data

Contractor must be proficient with computer software such as HEC-HMS for hydrologic modeling as appropriate. Hydrologic analysis activities include the determination of peak flood discharges, the use of rainfall-runoff models, regression equations, gage analysis, and hydrograph development to support the level of detail required for projects. The contractor shall calculate peak flood discharges and/or flood hydrographs for the 10%, 4%, 2%, 1%, “1% plus” and 0.2% annual chance events. These flood discharges will be the basis for subsequent Hydraulic Modeling. In addition, the contractor will be responsible for addressing any and all comments resulting from the ITR, including resubmittal of deliverables as needed to pass technical review. The contractor must ensure hydrology data meets FEMA standards and is responsible for uploading data to the MIP. Contractor must document hydrology methods within a Hydrology and Hydraulics report.

Task 4: Develop Hydraulic Modeling:

Hydraulic analysis activities include establishing the flood elevations for the 10%, 4%, 2%, 1%, “1% plus” and 0.2% annual chance events based on flood discharge rates computed under Develop Hydrologic Data. Contractor must be proficient with HEC-RAS for hydraulic modeling. Experience with the latest versions of HEC-RAS and 2D modeling is strongly preferred. KDA-DWR is now focusing on creating 2D floodways where appropriate. Proficiency in 2D modeling is desired to help with holding training classes for other firms. Demonstrated ability to perform this work is required.

Proper scoping is required to ensure adequate budgets are prepared. Contractor shall meet with KDA-DWR on any scoping concerns or questions prior to submitting an estimate for work to ensure that the project is in line with expectations. Familiarity with relevant guidance is necessary to ensure that the work is completed correctly and meets standards. Contractor will coordinate with KDA-DWR to provide scoping lines at the initiation of the project and any necessary data throughout the life of the project to assist in updating the CNMS database as needed. Contractor is responsible for MIP data uploads.

During the BLE phase with 2D modeling, contractor will provide the raw model output water surface elevation grid, in addition to a cleaned-up version of the Special Flood Hazard Area (SFHA) polygon that is clipped to the 1 square mile drainage extent or to meet effective mapping extents. This will avoid confusion on which products may become regulatory vs the supplemental data that the 2D modeling shows on flood risk. In addition, BFE contour lines from the 2D modeling will be provided prior to the Discovery Meeting or Flood Risk Review meeting depending upon the project phase.

During the Data Development phase, the BLE data is enhanced for detailed AE studies and sometimes for Zone A studies as deemed appropriate through the Discovery phase or identified within the Independent Technical Review (ITR). Detailed studies must include the addition of surveyed structures such as bridges and culverts within the models. Preference for Zone AE studies in Kansas is to include a floodway where development is likely to occur to lessen the burden on individuals in having to hire engineers for supplemental studies.

Task 5: Perform Floodplain Mapping and Develop DFIRM Database

Delineation of the 1% and 0.2% annual chance floodplain boundaries shall occur by the contractor. These boundaries are required for display in the FIRM panels and for delivery to KDA-DWR for use in project web maps prior to the Discovery or FRR meetings. Draft FIS report and AMP panels are created at this stage of the process for use at the Open House and for review. The draft DFIRM database must be provided to the communities for review to comply with SID 621 and the 30-day comment period.

Task 6: Independent Technical Review (ITR):

BLE projects as well as Data Development projects will go through Independent Technical Review by another firm that has a contract with DWR. The stages of ITR review are at BLE, hydrology, hydraulics, and floodplain mapping. Such review is important for ensuring consistency and accuracy within the floodplain mapping projects across the state. Contractor is responsible for submitting ITR review on time and copying KDA-DWR staff. Virtual meetings can be held to discuss any issues with ITR, and these should occur ASAP when any items are identified, and the FEMA Project Officer will be kept in the loop. Spreadsheets outlining items for review at each mapping stage are available on request.

Task 7: Produce and Distribute Preliminary Map Products

Once community review and public review phases have been resolved, the project is ready to submit for QR3 and KDP3 review prior to preliminary issuance. Contractor is responsible for ensuring the data passes QR3 and SID 507 compliance.

The contractor shall prepare letters and issue Preliminary products by mailing paper copies of the FIRM panels, FIS, Fact Sheet, Checklist, Preliminary Summary of Map Actions (SOMA – as applicable) to each community Chief Executive Officer (CEO) and floodplain administrator within the project area. An FTP site location will be provided by KDA-DWR for the contractor to upload all of the preliminary products. A link to download these will also be sent to all communities within the project area.

Task 8: Post-Preliminary Map Production

Contractor will complete the statutory, regulatory, and administrative activities required to finalize the FIRM and FIS report after the Preliminary copies of the FIRM and FIS reports have been issued to the community officials.

A summary of the required actions is below:

News release preparation

Initiation of statutory 90-day appeal period

Flood Hazard Determination notices to be published in the Federal Register

The contractor will ensure that news release notifications of proposed Flood Hazard Determination changes are published in prominent newspapers as determined during the CCO meeting

Resolution of Appeals and comments: While most comments and appeals are hopefully avoided by closely working with community officials and having the open house prior to preliminary, there may still be official comments and appeals. The contractor shall review and resolve appeals and comments received during the 90-day appeal period in accordance with FEMA standards.

A summary of these responsibilities is below:

Prepare and mail acknowledgment letter on FEMA letterhead with FEMA signature following FEMA concurrence.

Perform technical review of submitted information.

Prepare a draft resolution letter for appeals and comments, on FEMA letterhead for FEMA signature, and (as necessary) revised FIRM and FIS report materials for FEMA review.

Mail resolution letter(s) upon FEMA concurrence.

The Contractor shall prepare all associated correspondence using FEMA letterhead and mail upon authorization by FEMA. All appeal and comment correspondence shall be on FEMA letterhead and signed by FEMA.

Issuing the Letter of Final Determination (LFD):

Contractor will coordinate with KDA-DWR and PTS for any tasks related to issuing LFD. Tasks may include final SOMA preparation and revalidation letters.

Flood Risk Products should be finalized prior to LFD and after any appeals have been resolved so as to match the effective data.

Task 9: Develop Flood Risk Products

Contractor shall create Water Surface Elevation and Depth grids for all the modeled events in accordance with FEMA guidance and standards. Contractor will also create percent chance grids and Average Annualized Loss data, as required by FEMA. Additional optional data sets may be scoped depending on the project.

Levee Mapping:

For communities with levees, contractor shall analyze and determine feasible mapping options per FEMA's LAMP process. This may involve showing the results of a mapping scenario where a levee is

no longer certified, which is called natural valley. These projects involve coordinating with the communities as well as other relevant agencies, such as the USACE, to determine future levee projects. A contractor knowledgeable in 44 CFR 65.10 is desired to advise communities on the levee certification options. Contractor will work closely with FEMA and KDA-DWR to scope appropriate future projects with timelines that make sense to the community plans for certification.

Mitigation Technical Assistance:

KDA-DWR is offering technical assistance to communities to help identify projects that can result in mitigation actions to reduce flooding. Several contractors are desired to assist with projects such as risk assessments for structures, using engineering analysis to show what types of projects could reduce the impacts in flood prone areas, assisting with a Benefit-Cost Analysis for a grant application, supporting participation in the Community Rating System. The 2D models from the Base Level Engineering (BLE) studies can be leveraged for these projects to support the study of infrastructure improvements and seeing the resulting flood reduction. The end goal is creating solid studies to support projects that can result in on the ground mitigation actions whether through BRIC or other funding. KDA-DWR technical assistance projects can be located at: <https://agriculture.ks.gov/divisions-programs/dwr/floodplain/mapping/technical-assistance>

Schedule Considerations:

If contractor is selected, any future project estimates must include a detailed time and cost schedule. Assistance with filling out required grant documentation such as the Mapping Activity Statement (MAS) is required. When appropriate, the CTP will include within the MAS the known levee system information derived from the USACE National Levee Database (NLD) <https://levees.sec.usace.army.mil/#/>. Work is performed under the FEMA CTP grant that contains strict Period of Performance (PoP) end dates. Any delays in projects must be explained immediately to KDA-DWR and Corrective Action Plans submitted upon request. FEMA has the right to not extend grants if the reasons for project delays are not adequate. This could put the CTP at risk of losing future funding for FEMA CTP work if performance and adherence to schedules fails. KDA-DWR reserves the right to not contract with a company in the future due to poor performance or failing to meet deadlines.

KDA-DWR Preferences:

Preference will be given to the contractor with relevant experience that has a local office in Kansas and who is able to provide a sound budget management approach without sacrificing quality within the mapping standards. KDA-DWR has certain floodplain mapping and modeling preferences and seeks to contract with companies who will listen and take into account CTP preferences. KDA-DWR wishes to be involved in scoping calls to help set appropriate budgets and expects to be notified of any threats to project schedules or scopes immediately so that a resolution can be made in conjunction with KDA-DWR and FEMA.

The following shall be included in the Qualifications:

A. Background and Qualifications:

- a. History of firm or firms submitting the proposal
- b. Past performance and general qualifications for floodplain projects
- c. Size, organization, and location of firm. Strong preference will be given to firms with local Kansas offices.
- d. Experience in managing CTP projects
- e. Current fee structure for positions performing work as described in this RFQ

B. Approach to Proposed Projects:

- a. A full list of project team members and their qualifications. Discuss the qualifications and scope of services to be provided by each team member
- b. Sub-consultants proposed for the Project Team and their qualifications and scope of services
- c. Discuss potential risks to project schedules and solution strategies to those risks
- d. Budget Management approach
- e. Quality Assurance/Quality Control approach

C. Related Experience

- a. Related project experience, specifically experience related to floodplain management, hydrologic and hydraulic studies, Base Level Engineering (BLE), 2D modeling, technical assistance, levees, and the Risk MAP program.
- b. Specific examples and philosophy related to working with FEMA and working with FEMA guidelines and specifications
- c. Discuss your team's approach to working with KDA-DWR and FEMA while satisfying the requirements of the project. The consultant, and sub-consultants should provide references and be able to demonstrate project completion on time and within budget.

D. Workload:

- a. Current and projected workload including past, present, and upcoming projects utilizing similar skillsets required for work described in this RFQ
- b. Address capacity to perform work

E. Other Relevant Information:

- a. Include any other relevant information that you feel is important to the work or Selection Committee
- b. Please explain any other factors that make your consultation team uniquely qualified to provide professional services for these projects

Proposals are due by June 30, 2022. Please mail 6 copies of your proposal to the address below or send by email to:

Tara Lanzrath
Kansas Department of Agriculture
Division of Water Resources
1131 SW Winding Road, Suite 400
Topeka, KS 66615
Tara.Lanzrath@ks.gov

A selection committee will evaluate all responses. Interviews will be conducted at the Kansas Department of Agriculture, Topeka Field Office at 1131 SW Winding Road, Suite 400 Topeka, KS 66615 the week of July 18, 2022. During the interview the contractor will provide a presentation and answer questions from the client. KDA-DWR will contact firms to schedule interviews and will also notify by letter any firms not selected.

For your information, the selection committee members are:

- Terry Medley, PE, KDA-DWR, Water Structures Program Manager
- Tara Lanzrath, CFM, KDA-DWR, Floodplain Mapping Coordinator
- Joanna Rohlf, CFM, KDA-DWR, Floodplain Mapping Specialist
- William Pace, CFM, KDA-DWR, Floodplain Mapping Specialist
- Kellen L. Liebsch, KDA-DWR, Chief Fiscal Officer
- David Stueve, Procurement and Contracts, Procurement Officer