Entity Name:	South Dakota State Government
Event Number:	9362
Event ID:	23RFP9362
Event Name:	Refinement of Reinforced Concrete Box Culvert Installation Guidelines
Requested By:	Missy Schuetzle
Created By:	Missy Schuetzle
Due By Date:	01/05/2024 05:00 PM Central Time
Q&A Cutoff Date:	11/30/2023 2:29 PM Central Time
Invitation Type:	Invitation Only
Assigned Commodities:	210-28 Culverts, Concrete
Allow Supplier Terms and Conditions:	No
Public Responses:	No
Display Awardee:	Display
Posting Board Status:	Published
Event Status:	Event Under Review

Section #: **Name:**

1 Section 1 - 23RFP9362

Do not submit responses through ESM Sourcing as this is for informational purposes only. Please download the attached documents and follow submittal instructions.

Project SD2023-07

Problem Description: Reinforced Concrete Box Culverts (RCBCs) are the preferred structure when practical. This is primarily due to RCBCs being typically less expensive than a bridge, less complicated to design, and easier to construct and maintain. RCBCs are either cast-in-place or precast and both have circumstances in which their construction type is optimum. However, there are many circumstances when choosing the best RCBC option is not clear. Factors such as site conditions, long-term performance, costs, and speed of construction can impact the final selection.

The normal practice for SDDOT is to provide plans for cast-in-place RCBC installations and include a precast option when certain design criteria are met. Guidelines in the SDDOT Bridge Design Manual specify that if the proposed RCBC has a skew of more than 10 degrees, flared wing walls, slope-tapered aprons, side-tapered inlets, or water control structures, a precast option is not offered. Refining these guidelines by presenting the optimum RCBC construction type, rather than presenting options, would reduce selection and design time. Also, with the continual advancements in precast manufacturing processes, design software, and materials science, the development of refined guidelines may reveal innovative options addressing previous limitations regarding the use of precast RCBC.

Importance: Refining SDDOT RCBC guidelines will provide clarity and direction to the construction type selection process. This research will also broaden SDDOT's knowledge of accepted and innovative precast options and will assist in ensuring appropriate consideration is given to all relative factors. By refining SDDOT guidelines, viable, feasible, and cost-effective RCBC construction-type options will be presented. This will assist the SDDOT and local governments in ensuring the best appropriation of project funds.

Research Objectives:
1. Investigate RCBC options that expand SDDOT's current RCBC site condition guidelines.
2. Establish criteria for selecting the optimum RCBC construction type in South Dakota.
3. Develop recommendations for the SDDOT Bridge Design Manual that will assist the SDDOT and Local Governments in selecting the optimum RCBC construction type.

Research Tasks:
1. Meet with the project's technical panel to review the project scope and work plan.
2. Conduct virtual interviews with a representative sample of structural construction contractors, SDDOT personnel, South Dakota County Highway Superintendents, regional precast suppliers, and South Dakota consulting engineers who have advanced knowledge in RCBC design and construction. Interviews will focus on the assessment of cast-in-place and precast RCBC long-term performance, life cycle costs, installation site conditions, and quality control in South Dakota. The list of interviewees and questions shall be approved by the technical panel prior to conducting the interviews.
3. Develop a draft survey instrument to be distributed to selected State Highway Agencies. The survey instrument should disclose the experiences and perceptions of other State Highway Agencies regarding the long-term performance, life cycle costs, and installation site conditions of cast-in-place and precast RCBC. The survey instrument should also reveal the criteria used in the RCBC construction type selection process.
4. Develop a draft survey instrument to be distributed to a representative sample of RCBC precast suppliers nationwide. The survey instrument should identify acceptable and innovative RCBC options such as flared wing walls, skew angles, sloped tapered aprons, side tapered inlets, and parapets applicable for various site conditions.
5. Submit and present to the technical panel a technical memorandum summarizing the results of Tasks 2-4.
Request for Proposal Page 2 Refinement of Reinforced Concrete

Box Culvert Installation Guidelines
6. Upon approval by the technical panel of the survey instruments, administer and summarize the survey results.
7. Analyze and compare the long-term performance, life-cycle costs, and installation site conditions of precast and cast-in-place RCBC on South Dakota state and local roads. RCBC inspection reports, construction costs, maintenance costs, and plans should be used in the evaluation.
8. Based on the information obtained in Tasks 2-7, develop criteria for the selection of a cast-in-place or precast RCBC construction type in South Dakota.
9. Submit and present to the technical panel a technical memorandum summarizing the results of Tasks 6-8.
10. Prepare recommendations for the SDDOT Bridge Design Manual, utilizing the criteria developed in Task 8, to assist the SDDOT and local governments in selecting the optimum RCBC construction type.
11. In conformance with the Guidelines for Performing Research for the SDDOT, prepare a final report summarizing the research methodology, findings, conclusions, and recommendations.
12. Make an executive presentation to the SDDOT Research Review Board at the conclusion of the project.

Potential Implementation: Successful implementation will provide direction and clarity to SDDOT and local governments in the selection of the most site-conducive, feasible, and cost-effective RCBC construction type option.

SDDOT Involvement: Significant involvement will be needed from personnel of the Office of Bridge Design, Local Government Assistance, and Office of Project Development to provide resources to perform RCBC long-term performance analysis, life-cycle cost analysis, and site condition evaluations. The SDDOT personnel will also be needed to participate in interviews. The project technical panel will be involved in reviews and approvals and supplying information to the researcher.

Available Funding: $125,000 Anticipated Start Date: March 15, 2024 Duration: 18 months

Task	% of Total Cost
5	35%
9	35%
All Tasks	30%
Total	100%

General Information: The South Dakota Department of Transportation solicits proposals from colleges, universities, research institutes, foundations, consultants, federal, state, and local agencies, and others with demonstrated capability and experience in the subject area.

The South Dakota Department of Transportation gives public notice of its policy to uphold and assure full compliance with the non-discrimination requirements of Title VI of the Civil Rights Act of 1964 and related Nondiscrimination authorities. Title VI and related Nondiscrimination authorities stipulate that no person in the United States of America shall on the grounds of race, color, national origin, religion, sex, age, disability, income level or Limited English Proficiency be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving Federal financial assistance. Any person who has questions concerning this policy or wishes to file a discrimination complaint should contact the Department's Civil Rights Office at 605-773-3540.

Proposals must remain valid for at least 120 days after the submission deadline. All submitted proposals become the property of the South Dakota Department of Transportation. SDDOT has the right to use all information presented in any proposal unless it is specifically annotated as being proprietary. SDDOT considers all information contained in proposals to be privileged and reserves the right to maintain its confidentiality.

South Dakota state statute requires the winning proposal, with proprietary information redacted, to be posted online along with the corresponding contractual agreement.

SDDOT reserves the right to reject any proposals submitted. SDDOT may negotiate with a selected proposer to address specific weaknesses in the selected proposal prior to contract award.

SDDOT is not responsible for any costs, including proposal preparation, incurred by researchers prior to the execution of a contract.

Certification Relating to Prohibited Entity: For contractors, vendors, suppliers, or subcontractors who enter into a contract with the State of South Dakota by submitting a response to this solicitation or agreeing to contract with the State, the bidder or offeror certifies and agrees that the following information is correct:

The bidder or offeror, in preparing its response or offer or in considering proposals submitted from qualified, potential vendors, suppliers, and subcontractors, or in the solicitation, selection, or commercial treatment of any vendor, supplier, or subcontractor, is not an entity, regardless of its principal place of business, that is ultimately owned or controlled, directly or indirectly, by a foreign national, a foreign parent entity, or foreign government from China, Iran, North Korea, Russia, Cuba, or Venezuela, as defined by South Dakota Executive Order 2023-02. It is understood and agreed that, if this certification is false, such false certification will constitute grounds for the State to reject the bid or response submitted by the bidder or offeror on this project and terminate any contract awarded based on the bid or response. The successful bidder or offeror further agrees to provide immediate written notice to the contracting executive branch agency if during the term of the contract it no longer complies with this certification and agrees such noncompliance may be grounds for contract termination.

Proposal Deadline: Proposals are due to the SDDOT by 5:00 pm CST on Friday, January 5, 2024. This deadline is firm. Extensions will not be granted.

Proposals must be submitted as an e-mail attachment in Portable Document Format (PDF) not exceeding 14MB. The email must be addressed to andy.vandel@state.sd.us and margo.mcdowell@state.sd.us. Proposers should send the e-mail using "Delivery Receipt" and "Read Receipt" options to verify successful delivery.

Proposal Guidelines: Proposals must fulfill the requirements listed in the document entitled RESEARCH PROPOSAL PREPARATION, SUBMISSION, AND EVALUATION and dated October 28, 2022.

Proposal Evaluation: Proposals will be evaluated by a technical panel knowledgeable in the problem area. Selection will be made in consideration of criteria listed in RESEARCH PROPOSAL PREPARATION, SUBMISSION, AND EVALUATION.

Proposers will be notified of the results of the selection no later than March 1, 2024.

Project Management: Margo McDowell is responsible for the management of this project and can be reached at margo.mcdowell@state.sd.us to answer inquiries.

Terms and Conditions

ESM Sourcing Terms
None

General Terms and Conditions
None

Event Specific Terms and Conditions
See attached documents.