

Entity Name: South Dakota State Government

Event Number: 8411

Event ID: 23RFPD2022-07

Event Name: Measurement/Correction of Warp and Curl in Jointed Concrete Pavement

Requested By: Scott Nelson

Created By: Scott Nelson

Due By Date: 03/17/2023 05:00 PM Central Time

Q&A Cutoff Date: 01/31/2023 1:50 PM Central Time

Invitation Type: Invitation Only

Assigned Commodities: 913-27 Construction, Highway and Road; 913-71 Maintenance and Repair, Highway and Road (To include the removal of asphalt, concrete, bitumens, etc); 913-95 Paving/Resurfacing, Highway and Road

Allow Supplier Terms and Conditions: No

Public Responses: No

Display Awardee: Display

Posting Board Status: Expired

Event Status: Event Under Review

Section #: Name:

1 Section 1 - RFP Event

Do not submit response through ESM Sourcing as this section is for informational purposes only. Please download this RFI document and follow submittal instructions to respond.

Project Management: Mike Border is responsible for the management of this project and can be reached at michael.border@state.sd.us to answer inquiries.

Importance: Smooth pavement is a major focus for the Department and is highly important to road users based on survey results. Rough pavement causes unnecessary pavement damage and prematurely wears out components on vehicles. A reliable method to smooth pavement with predictable and measurable results will help optimize the Department's investment in pavement improvement.

Urgency: This research should be a high priority. There is a high incidence of roads with warp and curl across the state. Developing an effective method to smooth these roads will benefit the Department by lowering pavement repair costs. Road users will benefit from smoother roadways and reduced vehicle repair costs.

Research Objectives:

- 1) Evaluate the effectiveness of prior SDDOT grinding projects, specifications, special provisions, and project-specific plan notes pertaining to warped and curled pavements.
- 2) Develop a method to identify warp and curl on JCP during the annual automated pavement condition survey.
- 3) Develop a method to analyze the severity of existing warp and curl in terms of impact to passenger and commercial vehicles.
- 4) Develop a method to predict the improvement achievable through grinding specific segments.
- 5) Develop a method to identify optimal grinding strategies for specific pavement segments, in consideration of the segments' progressive, seasonal, and diurnal warp and curl behavior.

Research Tasks:

- 1) Meet with the project's technical panel to review the project scope and work plan.
- 2) Perform an extensive literature and technology review pertinent to detecting, evaluating, and mitigating warp and curl in JCP, including consideration of environmental factors that affect pavement profile.
- 3) Design, for approval of the project's technical panel, a survey or interview procedure to query state highway agencies regarding methods for detecting, evaluating severity, and correcting warp and curl.
- 4) Submit and present to the technical panel a technical memorandum summarizing tasks 2 – 3.
- 5) Perform the survey or interview developed in task 3 and summarize the results.
- 6) Analyze available data and interview SDDOT personnel, trucking industry representatives, and grinding contractors to evaluate the constructability, cost, and effectiveness of projects ground under SDDOT's prior grinding specifications, special provisions, and plan notes.
- 7) Submit and present to the technical panel a technical memorandum summarizing tasks 5 – 6.
- 8) Propose and demonstrate a method to identify warp and curl using the existing SDDOT equipment during the annual automated pavement condition survey.
- 9) Propose and demonstrate a method to evaluate the impact on passenger and commercial vehicles of existing warp and curl and reduced warp and curl after grinding.
- 10) Submit and present to the technical panel a technical memorandum summarizing the results of tasks 8 – 9.
- 11) Develop a method to devise optimal grinding strategies for specific JCP segments, in consideration of their progressive, seasonal, and diurnal warp and curl behaviors.
- 12) Submit and present to the technical panel a technical memorandum summarizing the results of task 11.
- 13) In conformance with Guidelines for Performing Research for the South Dakota Department of Transportation, prepare a final report

summarizing the research methodology, findings, conclusions, and recommendations.

14) Make an executive presentation to the South Dakota Department of Transportation Research Review Board at the conclusion of the project.

Potential Implementation: If this project is successful, SDDOT will be able to detect warped and curled pavement segments earlier, evaluate their severity in terms of impacts to passenger and commercial vehicles, devise effective project-specific grinding strategies, and predict the degree of improvement that grinding will achieve.

SDDOT Involvement: Staff of Materials & Surfacing, Project Development, Transportation Inventory Management, and some Area offices will be needed for interviews and to supply data from recent grinding projects. Onsite IRI data collection may be necessary by Materials & Surfacing and Transportation Inventory Management staff.

Proposal Deadline: Proposals are due to the SDDOT by 5:00 pm CDT on Friday, March 17, 2023. 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 michael.border@state.sd.us and andy.vandel@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 May 31, 2023.

Project Management: Mike Border is responsible for the management of this project and can be reached at michael.border@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 RFP documents.