

**National Concrete Pavement Technology Center
Cooperative Agreement with the Federal Aviation Administration
Airport Concrete Pavement Technology Program**

**Request for Proposal (RFP) ACPTP 2022-4
Quality Control and Quality Acceptance of Concrete Airport Pavement**

RESEARCH PROBLEM STATEMENT

In December 2018, the Federal Aviation Administration (FAA) released an update to Advisory Circular 150/5370-10, Standard Specifications for Construction of Airports. The updated specification discusses the need for improved quality control and quality assurance of airfield construction. An inconsistency in uniformity of experience and understanding of airfield pavement construction, inspection, and acceptance requirements exists in the government, construction industry, and engineering community. All stakeholder groups would benefit from a rigorous training program founded on understanding quality control and quality assurance needs specific to airfield paving. Additionally, a construction inspection training module would be beneficial along with the delivery of these programs.

OBJECTIVES

The intent of this RFP is to develop a best practices manual, including examples, for quality processes specifically for concrete airfield sites in the context of FAA P-501 and Department of Defense Unified Facilities Guide Specification 32 13 14.13 *Concrete Paving for Airfields and Other Heavy Duty Pavement*. In addition, training materials must be prepared to help agency and contractor staff become fully conversant with all aspects of quality control and quality assurance of airfield construction.

Contents of the manual and training material must include at a minimum:

- Discussion of the goal of quality systems – namely a product that is proven to be acceptable to the owner
- Definition of “quality” parameters and terminology
- Distinguish Quality Control from Quality Acceptance
- Description of required test data and test frequencies
- Inclusion of photographs, figures and videos explaining and clarifying various testing procedures
- Discussion of “action” and “suspension” limits
- Discussion on how to use a feedback loop of data in a process control environment
- Analysis of risk allocation
- Brief tutorial on construction statistics
- Guidance on how to handle discrepancies between agency and contractor data
- Guidance on dispute resolution including appropriate remedial actions
- Definition of authority and responsibility for enforcing requirements
- Lessons learned and impacts to avoid

TASKS

The Principal Investigator (PI) will be responsible for developing a series of sub-tasks that when completed will result in completion of the objectives of this study within the time and budget available. The proposal does not necessarily need to reflect the exact budget or the performance period indicated in the RFP; however, any deviation must be justified and clearly explained.

Task 1 - Literature Review

The literature review must include at a minimum:

- Publications, reports, and papers from industry, academia and specifying agencies which address quality systems – with a focus on airfield applications.
- A recently published document from FHWA/CP Tech Center can be used as a reference https://intrans.iastate.edu/app/uploads/2021/12/QC_for_concrete_paving_web.pdf.
- FAA P-501 and UFGS 321314.13 Specification provisions/requirements
- Quality documents used by other pavement owner / agencies such as the Department of Defense's TSPWG TSC 13-1 *Inspector's Manual for Hot-Mixed Asphalt and Portland Cement Concrete Pavement Construction*
- Review of effectiveness of different quality approaches used on construction sites

IMPORTANT: The PI is encouraged to use a means other than a survey to identify the sources of information. A survey is defined as the random distribution of a standard list of questions that seek trends for forecasting information.

Task 2 – Work Plan

The PI will develop a work plan to describe the activities planned to address the objectives of this project. The plan will include time for reviewing a draft final report and completed final report. The Project Technical Panel (PTP) will meet in-person with key members of the research team to discuss the final work plan. The PI shall not proceed with Task 3 until the PTP has reviewed and approved the work plan.

Task 3 – Project Implementation

After approval of the work plan, the PI may proceed with the project that must include:

- Collection and analysis of data
- Development of any protocols, provisions, or recommendations that should be included in airfield pavement contracts
- Development of an implementation and education plan and training materials
- Final report

Task 4 – Draft and Final Report

A draft final report will be submitted to the ACPTP project manager three months prior to the end of the contract. The PI and the PTP will meet to discuss the work conducted and the outcomes of the project. The one-day meeting will be held at a mutually agreed upon location for 1-2 key members of the research team; a virtual meeting may be substituted at the discretion of the PTP and ACPTP project manager. Following the meeting, the PI will have 1 month to submit a final 508 compliant report.

Posted: January 18, 2022

DELIVERABLES

The following deliverables will be required:

- Literature review and work plan for PTP review and approval
- Quarterly progress reports detailing work conducted and data collected
- Draft final report for PTP review and approval
- Draft training materials, including instructor's PowerPoint slides
- Final; 508 compliant report
- Final training materials, including instructor's PowerPoint slides

FUNDS AVAILABLE: Not to exceed \$500,000

CONTRACT TIME: Not to exceed 30 months;
Literature review 6 months
Work plan 21 months
Draft/Final reports 3 months

ACPTP PROJECT 2022-4 MANAGER: John Adam, jfadam@iastate.edu

QUESTIONS ON RFP: E-mail to ACPTP@iastate.edu prior to February 21, 2022. Answers will be posted at <https://cptechcenter.org/airport-pavements/acftp/>

PROPOSAL PREPARATION INSTRUCTIONS: <https://cptechcenter.org/airport-pavements/acftp/>

ESTIMATED NOTICE TO PROCEED DATE: May 1, 2022

PROPOSAL DUE DATE: **February 28, 2022 not later than 4:00 P.M. (Central Time)**

PROPOSAL SUBMIT TO: ACPTP@iastate.edu (PDF proposal plus Excel spreadsheet, see proposal instructions)