TECHNOLOGY TRANSFER CONCRETE CONSORTIUM

Pooled Fund Project

Problem Statement
February 12, 2007

PROJECT TITLE

Establishment of a Technology Transfer Concrete Consortium (TTCC) to identify, advise, fund and direct research and technology transfer for concrete.

PROBLEM STATEMENT

Increasingly, state departments of transportation (DOTs) are challenged to design and build longer life concrete pavements that result in a higher level of user satisfaction for the public. One of the strategies for achieving longer life pavements is to use innovative materials and construction optimization technologies and practices. In order to foster new technologies and practices, experts from state DOTs, Federal Highway Administration (FHWA), academia and industry must collaborate to identify and examine new concrete pavement research initiatives. The purpose of this pooled fund project is to identify, support, facilitate and fund concrete research and technology transfer initiatives.

The Iowa DOT will serve as the lead state for the execution of the pooled fund project described in this proposal. The Iowa DOT, through the National Concrete Pavement Technology Center (CP Tech Center) at Iowa State University, will handle all administrative duties associated with the project. The CP Tech Center will also serve as the lead research institution for the project.

PROJECT GOALS

The goal of the TTCC is to:

- Identify needed research projects
- Develop pooled fund initiatives
- Provide a forum for technology exchange between participants
- Develop and fund technology transfer materials
- Provide on-going communication of research needs faced by state agencies to the FHWA, industry, and CP Tech Center
- Provide guidance as part of the Track Team for the CP Road Map Mix Design and Analysis Track
- Provide assistance as requested by the CP Road Map Executive Committee on other select tracks as needed

It is anticipated that this consortium would become the national forum for state involvement in the technical exchange needed for collaboration and new initiatives, and be part of the CP Road Map Mix Design and Analysis Track team.

(For information on the CP Road Map: http://www.fhwa.dot.gov/pavement/pccp/pubs/05047/)

BACKGROUND

The Materials and Construction Optimization (MCO) pooled fund project (TPF-5(066)) is developing optimal mix design and test methods for monitoring key performance parameters and has conducted demonstration tests in participating states. The technical advisory group (one member from each of the 16 participating states, plus representatives from the funding sponsors) from this pooled fund project meet twice a year to review the research results and provide oversight to the project.

In the past four years, the MCO TAC participants have coordinated their meetings with the Midwest Concrete Consortium (MCC) in order to participate in the technical exchange of concrete pavement expertise and information on research, innovations, problems and solutions. This exchange has coalesced into a diverse consortium of concrete pavement experts from state DOTs, FHWA, academia, and industry that have shared and evaluated the research results from the successful MCO research project and other ongoing research projects.

For information on the MCO project visit the project website: http://www.cptechcenter.org/mco/ For information on the MCC visit the consortium website: http://www.ctre.iastate.edu/mcc/

The MCO pooled fund project is now nearing completion and there are still many issues that need the attention of this consortium of experts. The success this group has experienced has led the participants to conclude that this new pooled fund is needed in order to continue the collaborative efforts that the MCO/MCC shared structure facilitated.

RESEARCH PLAN AND DELIVERABLES (PROJECT DESCRIPTION)

The proposed project is for the establishment of a pooled fund for state representatives to continue this collaborative effort. The TTCC will be open to any state desiring to be a part of new developments in concrete paving leading to the implementation of new technologies which will lead to longer life pavements through the use of the innovative testing, construction optimization technologies and practices, and technology transfer.

It is envisioned this partnership will be part of the Track Team for the CP Road Map Mix Design and Analysis Track. The Track Team will include state representatives along with FHWA representatives, industry representatives (from ACPA, ACPA chapters, and material suppliers), consultants, and academic representatives. This pooled fund will be the opportunity for all states interested in the Mix Design and Analysis Track to become part of that endeavor.

TTCC will begin by meeting in conjunction with MCC, twice a year, as the MCO has done in the past. It may be advantageous for MCC in the future to consider melding itself into, and becoming part of the TTCC.

All efforts by the TTCC will be focused towards these project activities and deliverables:

- Identify and direct the development and funding of technology transfer materials such as tech brief summaries and training materials from research results
- Review the CP Road Map initiatives and provide feedback to the FHWA, industry, and the CP Tech Center on those initiatives
- Be part of the Track Team for the CP Road Map Mix Design and Analysis Track providing guidance to coordinating activities with the track.
- Provide research ideas to funding agencies

- Identify and instigate needed research projects
- Include current activities and deliverables of the pooled fund on the CP Road Map project website
- Maintain pooled fund project website with current activities and deliverables
- Develop pooled fund research projects for solutions to concrete and concrete pavement issues
- Act as a technology exchange forum for the participating entities
- Contribute to a technology transfer newsletter on concrete pavement research activities every six months in cooperation with the CP Road Map activities
- Publish electronic quarterly reports following lead state guidelines
- Post quarterly reports to the website
- Submit a final report to participants that documents the results of the entire project

EXECUTIVE COMMITTEE

An Executive Committee will be formed from the TTCC to review and approve the pooled fund activities and budget. The Executive Committee will meet at a schedule to be determined by the Executive Committee via conference calls.

RESEARCH TEAM

The project managers for the TTCC will be the CP Tech Center; lead by Tom Cackler and Jim Grove.

E. Thomas Cackler, P.E.
Mr. Cackler has nearly 20 years of senior management and administration experience, including Chief Engineer of the Iowa DOT and director of the National Concrete Pavement Technology Center. As director of the National Center, Mr. Cackler has been instrumental in identifying and developing key research and technology partnerships to advance promising research ideas to acceptance and practice. Mr. Cackler is responsible for the overall management of the Center, including administration of the center and development of an annual research and technology transfer program. This involves working interactively with private and public sector stakeholders to identify needs, secure funding partners, and ensure implement able results.

Jim Grove, P.E.
Mr. Grove is PCC paving engineer at the National Center and leads the Material and Construction Optimization for Prevention of Premature PCC Pavement Distress pooled fund study. In addition, he manages research involving all aspects of PCC paving, provides technical assistance to those involved in the PCC paving industry, and conducts and participates in training, workshops, and technology transfer.

Facilities
This project will be conducted through the CP Tech Center. The CP Tech Center works with partners to improve pavement design, mix and materials, construction, and maintenance to produce durable, cost-effective concrete pavements. The CP Tech Center's main offices are located at the Center for Transportation Research and Education in the Iowa State University Research Park, roughly three miles from both the ISU campus and the Iowa DOT's headquarters in Ames, Iowa.

ESTIMATED PROJECT DURATION

The pooled fund project duration is for five years.

BUDGET AND SPONSORSHIP

Proposed Project Funding

The total project budget is estimated at $300,000 over five years.

Sponsorship Goals

State DOTs (minimum of 12 states @ $5,000 per state each of five years) = $300,000

Summary of Requirements for Project Sponsors

- Financial support
- Meeting participation twice a year for 1-2 participants from each state (TTCC sponsorship would cover cost for 1 participant's attendance. A state may participate at a $7000 per year level if they desire to have two representatives funded to attend the semi-annual meetings.)
- Active collaboration with each other and principal investigators to identify, instigate, develop, direct, and author tech transfer materials and research initiatives
- Championing, within their state, the deliverables from the pooled fund, such as technical material to key staff, and facilitate implementation of new technologies and practices. TTCC members would also act as a contact person for researchers when their state participates in concrete pavement research within their state.

PROJECT ADMINISTRATION

The Iowa DOT, through the CP Tech Center at Iowa State University, will serve as the lead state and handle administrative duties for the project. Each participating entity may provide 1-2 individual(s) to provide direction to the project.

CONTACT FOR FURTHER INFORMATION

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