

TECHNOLOGY TRANSFER CONCRETE CONSORTIUM
Pooled Fund Project

Problem Statement
December 5, 2013

PROJECT TITLE

Continuation of the Technology Transfer Concrete Consortium (TTCC) to identify, advise, fund and implement 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 on priorities for the Next Gen CP Road Map (For information on the CP Road Map: <http://www.cproadmap.org/>)
- Provide assistance as requested by the Next Gen CP Road Map Executive Committee on other select tracks as needed
- Provide technical leadership for the national initiative to develop performance engineered concrete mixes

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 provide input to the Next Gen CP Road Map Mix Design and Analysis Track team.

RESEARCH PLAN AND DELIVERABLES (PROJECT DESCRIPTION)

This pooled fund project allows for state representatives to continue the collaborative efforts of TPF-5(159) that originally began in TPF-5(066) Materials and Construction Optimization. The TTCC is open to any state agency desiring to be a part of new developments in concrete.

It is envisioned this partnership will be part of the Track Team for the Next Gen 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 meet in conjunction with the National Concrete Consortium (NCC), twice a year. NCC Bylaws and the Executive Committee membership can be found at <http://www.cptechcenter.org/ncc/TTCC-NCCMeetings.cfm>.

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

- Identify and guide the development and funding of technology transfer materials such as tech brief summaries and training materials from research results
- Review the Next Gen CP Road Map initiatives and provide feedback to the FHWA, industry, and the CP Tech Center on those initiatives
- Provide input to the Track Team for the Next Gen 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 the pooled fund project website with current activities and deliverables
- Maintain the TTCC pooled fund listserv
- Track TTCC listserv posted problems and discussions and categorize them for inclusion in a library on the project website
- Develop pooled fund research problem statements 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 Next Gen 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

Pooled fund activities and budgets are discussed at the semi-annual meetings. Proposals for minor research, synthesis studies, and/or training are often presented by partners and then discussed and voted on at the semi-annual meetings. NCC members may propose needed research and/or training, however they may not vote on how to utilize the federal pooled funds. Selection of needed work by partners does not guarantee work can be conducted under this pooled fund project since the Iowa DOT and FHWA must ensure the work will fit within the funding guidelines and scope of the project. Occasionally e-mail discussions and votes are warranted.

RESEARCH TEAM

The project manager for the TTCC will be the CP Tech Center; lead by Tom Cackler.

E. Thomas Cackler, P.E.

Mr. Cackler has nearly 25 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 implementable results.

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

15 states @ a minimum of \$8,000 per state each of five years = \$600,000. Since many states are only able to commit one year at a time, the minimum funds required for this to become a pooled fund project and to be maintained as such each calendar year are \$125,000 per year.

State DOTs:

- \$8,000/year to support the pooled fund and allow 1 participant to attend semi-annual meetings
- \$12,000/year to allow 2 participants to attend semi-annual meetings each year

Summary of Requirements for Project Sponsors

- Financial support
- Meeting participation twice a year for 1 to 2 participants from each state (based on level of funding).
- Active collaboration with each other and principal investigators to identify, instigate, develop, and author tech transfer materials and research initiatives. States may choose to contribute additional funds for specific tech transfer or research initiatives, beyond the normal pooled fund financial contribution. These initiatives may be funded either by individual states, or if multiple states have the same needs, then the initiatives may be funded and overseen by a group of states.
- Championing the deliverables from the pooled fund such as providing technical material to key staff, and facilitating 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, will serve as the lead state and the CP Tech Center at Iowa State University will handle administrative duties for the project. Each participating entity may provide 1 or 2 individual(s) to provide direction to the project (refer to Budget and Sponsorship section for fees).

CONTACT FOR FURTHER INFORMATION

Lead State Contact

Technical Contact
Mr. Todd Hanson
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010
Phone: 515-239-1226
Todd.Hanson@dot.iowa.gov

Administrative Contact
Ms. Linda Narigon
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010
Phone: 515-239-1471
Linda.Narigon@dot.iowa.gov

CP Tech Center Technical Contact

Mr. Tom Cackler
Director, CP Tech Center
Iowa State University
2711 S. Loop Dr, Ste 4700
Ames, IA 50010
515-294-3230
tcackler@iastate.edu

CP Tech Center Administrative Contact

Ms. Sharon Prochnow
CP Tech Center
2711 S Loop Dr, Ste 4700
Ames, IA 50010
515-294-3781
prochnow@iastate.edu