



Smart Work Zone Deployment Initiative

Evaluation Plan

2006

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INTRODUCTION

The Midwest Smart Work Zone Deployment Initiative (MwSWZDI) was initiated in 1999 as a Federal Highway Administration (FHWA) Pooled Fund Study intended to coordinate and promote research among the participating states related to safety and mobility in highway work zones. Led by Pat McCoy at the University of Nebraska, the original four states of Iowa, Kansas, Missouri, and Nebraska were joined by Wisconsin in 2001. In 2003, the Nebraska Department of Roads stepped down from its role as lead state, and the Kansas Department of Transportation assumed lead state responsibilities for the study. To best facilitate the transition, a new study was initiated with the same title and participants. Various circumstances led to another change of lead state in 2004, when the lead state role moved from Kansas to Iowa.

The study is an ongoing cooperative effort between State Departments of Transportation, universities, and industry. Commercial products are provided by private vendors for evaluation. State DOTs provide funds, prioritize products with respect to the anticipated benefits to their construction and maintenance activities, and cooperate with researchers to identify test sites and conduct the evaluations. To date, over 50 evaluations of various work zone related products have been conducted or are ongoing, and several synthesis studies have been completed. Completed reports and descriptions of ongoing projects can be obtained at the Iowa State University's Center for Transportation Research and Education website (<http://www.ctre.iastate.edu/smartwz/>)

PROGRAM PROCESS

1. The SWZDI Board of Directors, (BOD), with the assistance of the Program Manager (currently Tom McDonald) will annually draft a list of proposed problem statements based on high priority issues related to work zone safety and/or mobility. Problem statements will be developed for consideration by university-based Principal Investigators (PIs).
2. The Program Manager will distribute Requests for Proposals (RFPs) to university-based Principal Investigators. Unless there is a special circumstance requiring unique skills or a specific testing facility, the PIs receiving RFPs will be limited to researchers at universities within states represented by members of the BOD. If specific commercial products are deemed to be of possible interest in addressing the selected issues, those vendors' products must be part of the university's proposal.
3. Upon receipt of proposals from PIs, the Program Manager will distribute those documents for ranking by members of the BOD. The Program Manager shall work with the BOD using the determined rankings to select a program of projects which will be constrained by the available funding. To rank each proposal, the scores of each BOD member will be weighted by their State Transportation Agency (STA) contributions to the pool fund. Once the BOD, with the assistance of the Program Manager has developed an annual work plan of projects, the Project Manager will notify the PIs who authored the selected and rejected proposals and debrief those authors of the outcomes and request modification to the proposal scope and/or budget if necessary.
4. The BOD, with the assistance of the Program Manager, will select and assign a Project Monitor for each approved project. The Project Monitor will be either a member of the BOD or a representative from one of the member STAs. The Project Monitor will work with the PI to establish a project Technical Advisory Committee, TAC, for each project, consisting of one to five individuals depending on the scale and attributes of the project. The Project Monitor will serve as chair of the project TAC. Working with the TAC, the Project Monitor will be responsible for approving a final work plan and schedule, approving modification of the work plan and schedule, monitoring project progress, and approval of the final draft. At least once per quarter, the Program Manager will discuss progress of each project with the Project Monitors.
5. For each project, the Program Manager will draft a project contract to outline the work and schedule to be performed by the selected PI and university. The contract language and format will be derived from Iowa Department of Transportation, Iowa DOT, standard contract language and structure.

6. The Iowa DOT will use the contract form developed by the Program Manager to contract with appropriate universities for services to be performed by the selected PI's.
7. Each PI will submit progress reports, following the Iowa DOT's standard progress reporting format, to both the Program Manager and the Project Monitor. Progress payment requests (invoices) will be submitted to the Program Manager for payment by the Iowa DOT. All research and evaluation efforts will require at least a quarterly report to both the Program Manager and Project Monitor.
8. The Program Manager will evaluate project process and forward invoices to the Iowa DOT with recommendations for reimbursement. Dan Sprengeler and Carol Culver are the points of contact at the DOT.
9. The Iowa DOT will either deny the invoice and so notify the respective university or send payment directly to that university.
10. On an annual basis, the Iowa DOT will request reimbursement for expended funds from member STAs, based on prorated contributions.
11. Member STAs will then reimburse Iowa DOT.
12. For State Planning & Research (SPR) reimbursement, member STAs will request respective FHWA Division Offices to make reimbursement from the state's SPR account balance.

For the 2006 program, a list of fourteen requests for proposals were developed and distributed to potential researchers at research institutions in contributing states. Five evaluation suggestions were submitted by vendors. Proposals were received for six projects and, using an established system, the projects were ranked and distributed to the Board of Directors for approval. These projects and the administrative agreement with the Center for Transportation Research and Education will comprise the 2006 program. A budget surplus of approximately \$220, 000 will remain after award of all approved contracts.

YEAR 2006 PROGRAM

The six proposals submitted and approved by the BOD plus the administrative budget total \$ 305,860. Available funding totaled \$526,635 comprised of states' contribution, surplus funds from the 2005 program, and unobligated funds from previous years. Participating states and respective funding contributions are shown in Table 1. The 2006 program is summarized in Table 2.

*Rollover funds include \$305,836 of unobligated funds from 1999 through 2003

Table 1-Contributions of States

Agency	Funding level
Iowa	\$ 45,000
Kansas	\$ 80,000
Wisconsin	\$ 40,000
Missouri	\$ 50,000
*Rollover from Previous Years	\$ 311,635
Total	\$ 526,635

This program and associated work has been approved by the Board of Directors (BOD).

Details of the Work Plan and budget details per project are provided in Appendix A.

Table 2 – Program for 2006

Proposal	PI		Amount	Status
Administration-Travel	Tom Maze / Tom McDonald	ISU	\$29,476	Funded
Assessment of Channelizing Devices on High Speed/Volume Roadways	Reginald Souleyrette	ISU	\$40,587	Funded
Smart Work Zone Forecasting Service	Zachary Hans	ISU	\$51,821	Funded
Temporary Traffic Control and Enforcement in Closed Road Sections	Kelly Strong	ISU	\$47,581	Funded
Evaluation of Early Merge Left Concept	Steven Schrock	KU	\$49,923 + \$14,746	Funded Other funds
Evaluation of Rapid Deployment Mesh Networking	Steven Schrock	KU	\$45,962	Funded
Development of Guidelines for Deployment of Arrow Panels in Short Term, Short Duration, and Mobile Work Zones	Steven Schrock	KU	\$40,510	Funded
Total Budget for 2006 Program Year			\$305,860	

APPENDIX A - WORK PLAN

ITEM	Administration	Channelizing Devices	Work Zone Forecasting	TTC in Closed Road Sections	Early Merge Left	Rapid Deploy Mesh	Arrow Panels	
State	IA	IA	IA	IA	KS	KS	KS	Total
Staff								
salaries	\$9,722	\$24,375	\$31,620	\$30,241	\$22,989	\$22,989	\$22,989	\$164,925
fringes	\$2,722	\$5,562	\$7,108	\$6,521	\$2,981	\$2,981	\$2,981	\$30,856
subtotal	\$12,444	\$29,937	\$38,728	\$36,762	\$25,970	\$25,970	\$25,970	\$195,781
Other Direct Costs								
-materials	\$500	\$750	\$600		\$250	\$250		\$2,350
-print & copy	\$250	\$25	\$200	\$400				\$875
-postage	\$100		\$100	\$100				\$300
-telephone	\$100	\$100	\$500		\$250	\$250	\$250	\$1,450
-equipment						\$3,000		\$3,000
-travel	\$5,000		\$1,000	\$500	\$8,199	\$1,948	\$312	\$16,959
-other	\$5,000	\$1,400				\$500	\$1,600	\$8,500
subtotal	\$10,950	\$2,275	\$2,400	\$1,000	\$8,699	\$5,948	\$2,162	\$33,434
Total Direct	\$23,394	\$32,212	\$41,128	\$37,762	\$34,669	\$31,918	\$28,132	\$229,215
Total Indirect Costs	\$6,082	\$8,375	\$10,693	\$9,819	\$15,254	\$14,044	\$12,378	\$76,645
Total Cost	\$29,476	\$40,587	\$51,821	\$47,581	\$49,923	\$45,962	\$40,510	\$305,860

The Smart Work Zone Deployment Initiative 2006 Work Plan comprises the proposals submitted for individual projects that were subsequently included in the approved Study Program. ISU/CTRE will contract with IDOT for the entire study budget, and individual projects will be contracted between ISU/CTRE and the PI (or associated institution). Participating State DOTs will assist IDOT in monitoring project performance. Changes in project budget or work plan require approval of the TAC. For minor changes, the Project Monitor in the local state DOT shall represent the TAC, deferring to the TAC when deemed appropriate.

PROPOSAL for ADMINISTRATION

Calendar Year 2006

Title

Smart Work Zone Deployment Initiative (SWZDI)
[Federal Highway Administration project number TPF-5(081)]

Introduction

The MwSWZDI was established in 1999 as a Federal Highway Administration (FHWA), pooled fund study to promote and coordinate research related to safety and mobility in work zones among several cooperating states; Iowa, Kansas, Missouri, Nebraska, and Wisconsin. The association named has been subsequently changed to Smart Work Zone Deployment Initiative, (SWZDI). Originally administered through the University of Nebraska and later by the Kansas Department of Transportation, the FHWA and cooperating states have recommended to transfer administration and coordination responsibilities to the Iowa Department of Transportation and the Center for Transportation Research and Education (CTRE) at Iowa State University.

Objectives

This initiative represents an on-going effort among cooperating states' DOTs, the FHWA, universities, and industry to evaluate new products and conduct related research focused on the enhancement of safety and mobility in highway work zones. State DOTs contribute funding necessary for these activities, prioritize products for evaluation considering potential benefits, and cooperate with university researchers to identify evaluation sites and conduct studies. Approximately 50 studies and evaluations have been completed since the inception of the SWZDI.

Evaluation Process

A Board of Directors (BOD) comprised of representatives from the FHWA and cooperating states is responsible for developing problem statements describing the highest priority issues related to work zone safety and mobility. Request for proposals

(RFPs) are distributed to vendors with a potential interest or product to address those concerns. Following receipt of vendors' responses, the BOD determines which states are most appropriate for completing the evaluations. In addition, members of the BOD may suggest topics related to work zone safety for research. These subjects will also be evaluated, prioritized, and awarded for study. University researchers then submit work plans and the BOD selects which projects will be included in a work plan based on anticipated benefits and available funding.

Administration Responsibilities

The Iowa Department of Transportation has assumed the lead for this pooled fund activity, initiating encumbrances and reimbursements for research activities. Assistance with the administration effort will be provided by CTRE at Iowa State University.

Specific duties provided by CTRE will include:

- facilitate vendor solicitation
- assemble group reports for distribution
- convene BOD meetings
- maintain states' research reports
- provide a quarterly report of project activities
- verify billings and recommend reimbursement for research
- solicit and invite participation by other states
- serve as contact for inquiries
- maintain and monitor web site and list serv
- bring current project records up to date
- provide general administrative assistance as needed

The Iowa DOT will be the lead state and Carol Culver will be the financial administrator. CTRE will coordinate the project with Tom Maze as the principal investigator and Tom McDonald as project manager and primary administrative contact.

Estimated Cost

Estimated 2006 administrative costs for CTRE services are \$29,476 which include staff time, necessary editing, postage, copying, and travel.

Research Period

The administrative services described above would be provided for calendar year 2006 and renewed annually as requested.