SWZDI

Smart Work Zone Deployment Initiative

Evaluation Plan

2008

Table of Contents

1

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 and the pooled fund was designated the Smart Work Zone Deployment Initiative (SWZDI).

The program 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 studies have been completed, consisting of evaluations of various work zone related products, numerous topics researched, and several synthesis studies undertaken. Completed reports and descriptions of ongoing projects can be obtained at the Iowa State University's Center for Transportation Research and Education website (www.ctre.iastate.edu) through the link to Smart Work Zone Deployment Initiative.

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.

For each project contracted by universities outside Iowa, 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. For research contracted to CTRE PIs, projects will be contracted through an addendum to the basic agreement between Iowa State University and the Iowa DOT.

5. The Iowa DOT will use the contract form developed by the Program Manager to contract with appropriate non-Iowa universities for services to be performed by the selected PI's.

> For contracts with CTRE, PIs will furnish RFPs to the Program Coordinator at CTRE (Judy Thomas) for proposal approval by the ISU Office of Sponsored Programs Administration, OSPA, (Gold Sheet) prior to responding to the RFP sponsor. After acceptance of the RFP by the sponsor, the OSPA office and the Iowa DOT will approve the addendum which will be prepared by the CTRE Program Coordinator. Following final approval by the Iowa DOT, the Program Manager will furnish a copy of the addendum and project proposal to the PI.

6. Each PI will submit progress reports, following the Iowa DOT's standard progress reporting format, to both the Program Manager and the Project Monitor. Quarterly reports will be forwarded to the Iowa DOT for recording in the database. 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.

7. 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.

8. The Iowa DOT will either deny the invoice and so notify the respective university or send payment directly to that university.

9. On an annual basis, the Iowa DOT will request reimbursement for expended funds from Bill Zaccagnino at the FHWA Headquarters, Turner-Fairbanks Office and/or member STA's if funds other than SP & R have been contributed. Attached to this reimbursement request, the Iowa DOT will include the suggested draw down of SP & R funds based on each STA's contribution level percentage, as computed by CTRE.

10. FHWA Headquarters and/or member STA's with funding contributions other than SPR will then reimburse Iowa DOT.

For the 2008 program, a list of twelve requests for proposals were developed and distributed to potential researchers at research institutions in contributing states. Two evaluation suggestions were submitted by vendors. Researchers submitted a total of seventeen proposals totally $820,153 and these were distributed to the contributing state DOT representatives for prioritization. Using a ranking system based on contribution levels, CTRE staff ranked the proposals and distributed the list to the Board of Directors for approval. The five approved projects and the administrative agreement with the Center for Transportation Research and Education will comprise the 2008 program. A budget surplus of approximately $395 will remain after award of all approved contracts.

YEAR 2008 PROGRAM

The five proposals approved by the BOD plus the administrative budget total $ 254,210. Available funding totaled $254,605 comprised of states' contribution and carryover funds from prior year programs. Participating states funding contributions are shown in Table 1. The 2008 program is summarized in Table 2.

Table 1-Contributions of States

Agency	Funding level
Iowa	$25,000
Kansas	$50,000
Wisconsin	$40,000
Missouri	$50,000
Nebraska	$10,000
*Carryover from Previous Years	$ 79,605
Total	$ 254,605

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 2008

Proposal	PI	University	Amount	Status
Administration	Tom Maze / Tom McDonald	ISU	$33,026	Funded
Evaluation of Variable Speed Limits for Work Zones	Praveen Edara	MO	$49,891 $8,826	Funded Other funds
Ramp Metering for Work Zone Mobility and Safety	Praveen Edara	MO	$49,891 $8,826	Funded Other funds
Examining Driver Behavior in Response to WZ Intervention - Simulation	John Lee	Iowa	$48,538 $97,146	Funded Other funds
Evaluation of Effectiveness of Temporary Pavement Markings	Neal Hawkins	ISU	$42,990	Funded
Development of a WZ Training Program	Yong Bai	KU	$30,000	Funded
Total Budget for 2008 Program Year			$254,336	

6

APPENDIX A - WORK PLAN

ITEM	Administration	Evaluation of Variable Speed	Ramp Metering for WZ mobility & Safety	Examining Drive Behavior in Response to WZ	Evaluating Effectiveness of WZ Pavt Markings	Development of a WZ Training Program	
State	IA	MO	MO	IOWA	ISU	KU	**Total**
Staff							
salaries	$17,001	$27,124	$27,124	$22,039	$14,593	$18,383	$126,264
fringes	$5,160	$5,600	$5,600	$6,473	$4,926	$1,683	$29,442
subtotal	$22,161	$32,724	$32,724	$28,512	$19,519	$20,066	$155,706
Other Direct Costs							
-materials	$500				$5,000	$482	$5,982
-print & copy	$250						$250
-postage	$200						$200
-telephone	$100						$100
-equipment							
-travel	$500	$648	$648		$3,000		$4,796
-other	$2,500			$3,900	$6,500		$12,900
subtotal	$4,050	$648	$648	$3,900	$14,500	$482	$24,228
Total Direct	$26,211	$33,372	$33,372	$32,412	$34,119	$20,548	$180,034
Total Indirect Costs	$6,815	$16,519	$16,519	$16,126	$8,871	$9,452	$74,302
Total Cost	$33,026	$49,891	$49,891	$48,538	$42,990	$30,000	**$254,336**

The Smart Work Zone Deployment Initiative 2008 Work Plan comprises the proposals submitted for individual projects that were subsequently included in the approved Study Program. Individual universities will contract directly with the Iowa DOT for individual projects, with CTRE facilitating contract administration. Participating State DOTs will assist CTRE in monitoring project performance. Changes in project budget or work plan require approval of the BOD. For minor changes, the Project Monitor in the local state DOT shall represent the BOD, deferring to the BOD when deemed appropriate.

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 recommended transfer of administration and coordination
responsibilities to the Iowa Department of Transportation and the Center for
Transportation Research and Education (CTRE) at Iowa State University. This was
accomplished in calendar year 2005.

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. Members of the BOD
submit ideas for proposed research study in the next program year. In addition, selected
vendors are invited to submit products or processes for evaluation studies. Following a

review of the submitted topics and products by the BOD, Request for proposals (RFPs,) are distributed to interested researchers in pooled fund states universities. Researchers then submit proposals and work plans to the BOD for prioritization and selection of projects to be included in the next year's 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 with Dan Sprengeler as technical representative and Carol Culver as 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 2008 administrative costs for CTRE services are $33,026 which include staff time, necessary editing, postage, copying, and travel.

Research Period

The administrative services described above will be provided for calendar year 2008 and renewed annually as requested.