Traffic Safety Improvement Program

Applications for

Studies, Research, and Public Information Initiatives

FY 2012

Received June 15, 2010

STUDIES, RESEARCH, PUBLIC INFORMATION INITIATIVES
FY 2012

Page No.	Applicant	Title/Subject	$ $ $	
			Project	Request
1	Iowa DOT - Traffic & Safety	Traffic Safety Liaison Program	$55,000	$55,000
5	Iowa DOT - Traffic & Safety	Safety Circuit Rider Support	$60,000	$20,000
7	Iowa DOT - Traffic & Safety	Comprehensive Highway Safety Plan Implementation	$300,000	$70,000
9	Iowa DOT - Traffic & Safety	Traffic and Safety Engineering Forum, Training and Peer Exchange	$20,000	$20,000
11	Iowa DOT - Traffic & Safety	Iowa Traffic Safety Alliance “Change the Culture” Younger Drivers	$50,000	$50,000
13	Iowa DOT - Traffic & Safety	NADS Motorcycle Conspicuity	$50,000	$50,000
17	Iowa DOT - Traffic & Safety	NADS Evaluation of Older Drivers Training	$50,000	$50,000
21	Iowa DOT - Traffic & Safety	NADS Digital Billboard White Paper	$10,000	$10,000
23	Iowa DOT - Traffic & Safety	Work Zone Safety Training	$90,000	$45,000
27	Iowa DOT - Traffic & Safety	Intersection Magic/Diagram Magic Statewide License Renewal	$16,000	$16,000
29	Iowa DOT - Traffic & Safety	Iowa Traffic Safety Data Service (ITSDS)	$120,000	$20,000
31	Iowa DOT - Traffic & Safety	Training Materials for Work Zone Traffic Control	$50,000	$50,000

Continued on next page

STUDIES, RESEARCH, PUBLIC INFORMATION INITIATIVES (Continued)

Page No.	Applicant	Title/Subject	$ $ $	
			Project	Request
33	Iowa DOT - Traffic & Safety	Purchase the 2009 MUTCD for the DOT, Cities and Counties	$98,000	$98,000
35	Iowa DOT - Traffic & Safety	Improving Traffic Safety Culture in Iowa - Public Opinion Phase II	$100,000	$100,000
37	Iowa DOT - Traffic & Safety	A Synthesis of State-of-the-Art on Prioritization of Traffic Safety Funds	$30,000	$30,000
39	Iowa DOT - Traffic & Safety	Visualization of Innovative Traffic Safety Application using InTrans Minisim Driver Simulator	$60,000	$60,000
41	Iowa DOT - Traffic & Safety	The Impact of Roadway Characteristics on Safety Improvement Prioritization	$50,000	$50,000
43	Iowa DOT - Traffic & Safety	Evaluating the relationship between curve approach speed, curve radius, and safety	$35,000	$35,000
45	Iowa DOT - Traffic & Safety	Four-Way Stop vs Traffic Signal vs Roundabout	$25,000	$25,000
47	Iowa DOT - Traffic & Safety	Low-Cost Treatment on Curves - Phase IIb	$20,000	$20,000
49	Iowa DOT - Traffic & Safety	Roundabout & Oversize Loads	$40,000	$40,000
51	Iowa DOT - Traffic & Safety	Evaluation of Rural Intersection Treatments	$120,000	$50,000
55	Iowa DOT - Traffic & Safety	Evaluate Iowa's New Centerline Rumble Policy	$30,000	$30,000
	Totals	**23 Projects**	**$1,479,000**	**$994,000**

Iowa Department of Transportation

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Traffic Safety Liaison Program

Applicant: Robert Sperry, P.I. Institute for Transportation, Iowa State University

Contact Person: Same Title: _____

Complete Mailing Address: 2711 South Loop Drive, Suite 4700

Ames, IA 50010-8664

Phone: 515-294-7311 (Area Code) E-Mail: rsperry@iastate.edu

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 55,000

Safety Funds Requested: $ 55,000

Title: Traffic Safety Liaison Program for 2010-2011

Cost: $55,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:
This program commenced in March of 2008 as a new outreach project to local governments (primarily counties) under the TSIP ½ % funded programs of the Iowa Department of Transportation. Accomplishments to date include taking the safety "message" to all 99 counties, including several recalls for specific discussions about potential grant eligible projects. Providing assistance on the annual fall safety schools and programs with county engineer's conferences has helped build and maintain a stronger "safety" relationship with those individuals. Recent county visits have been expanded to use CMAT information, (in person, if time allows). Visits with smaller towns have begun and will become even more important as they begin to meet the retro-reflectivity requirements. More recent work in the area of aiding in the team development of multidisciplinary groups around the state is beginning to show results in the Fort Dodge and Waterloo areas. Several others have been targeted by the team for work in the future.
The Traffic Safety Liaison program hopefully can continue to promote the safety message to those agencies through personal on-site visits. In this time of financial cutbacks, many local entities do not have the staff and/or time available to permit staff to attend the formal training opportunities, or to perform the necessary analysis to identify traffic safety concerns. The Traffic Safety Liaison program can continue to fill that gap.

Progress on Current Initiatives:
- Worked w/ Safety Circuit Rider, ITSDS, MDST team and DOT staff and training personnel to provide appropriate topics, crash maps, contacts, and web addresses (into a safety packet)
- Attended meetings with representatives of RPA's, cities and counties, as well as DOT staff for sharing liaison information, getting updates on current research projects and studies, as well as to gain familiarity and name recognition with other groups.
- Provided additional safety and research information to county engineer and city offices

Recommendations
Continuation of previous initiatives, including:
Provide detailed analysis of traffic related crashes to local agencies when requested
- Identify traffic safety improvements for local agencies using traffic studies and crash analysis tools
- Participate in local agency safety workshops this fall
- Continue to assist counties with road safety audits, where requested

Next Step for FY 2012:

- Continue all program items above with revisions or updates as necessary
- Investigate adopting a Minnesota type program for individual county safety reviews and program development. Assist local agencies in developing an overall traffic safety program to provide an intermediate process toward the long range goal of saving more lives on Iowa's roads
- Provide local agency assistance, work through localized problem areas, with their staff, and in their office to determine mitigation and funding options
- Provide assistance and information to promote and enhance the formation and active participation of area multidisciplinary groups

Future Years:

Continue to provide current and timely information and assistance to those local agencies that rely on this form of presentation to keep the safety message heard

Assistance from a professional engineer, working approximately 65 hours per month, is anticipated to carry out these tasks. Continued coordinated work with DOT and InTrans staff, along with various safety interest groups and trainers could be continued and program growth expanded to areas including cities and RPAs. Developing associations with those officials and other contacts around the state will definitely promote the development of a safety culture in Iowa.

PIs: Robert Sperry Estimated cost: $55,000

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Safety Circuit Rider

Applicant: Iowa DOT, Office of Traffic and Safety

Contact Person: Mary Stahlhut Title: Safety Programs Manager

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 60,000

Safety Funds Requested: $ 20,000

Title: Safety Circuit Rider Support

Cost: $20,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:
The Safety Circuit Rider program was created about 20 years ago as a strategy to bring safety training to local government agency personnel at their own place of work. Often, local governments are short on funds for training and find it difficult to send all personnel in need of specific training long distances. This is especially true for flagging, by far the most popular program the Circuit Rider offers. The Safety Circuit Rider program was established as a part of the Local Transportation Assistance Program residing within the Center for Transportation Research and Education, Iowa State University, Ames.

The Safety Circuit Rider program was established by a coalition including the Iowa DOT, Governor's Traffic Safety Bureau, Federal Highway Administration, and the Center for Transportation Research and Education, Iowa State University. In addition to flagger training, the program also deals with general work zone safety and the annual winter day-long work zone safety training program held at numerous field locations across Iowa. The Circuit Rider assists in planning and executing the DOT's winter work zone training program for city, county, state, contractor, and utility personnel. Crash analysis, low cost safety improvements, sign inventory, and other miscellaneous topics fill in the comprehensive program.

Since its inception, the program has received $40,000 annually in Section 402 Highway Safety funds from the Governor's Traffic Safety Bureau. Yet, over time the program has expanded and requires a budget substantially greater than that. The funds being requested from the TSIP will help the program meet the safety training needs of Iowa's roadway workers in the future. Iowa's safety program of outreach to local jurisdictions Is nationally recognized, and recently won the FHWA / RSA award for local programs.

Budget

For support of the Safety Circuit Rider program based at the Center for Transportation Research and Education, Iowa State University during calendar year 2009 (10th consecutive year of TSIP supplemental funding):	$20,000

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Comprehensive Highway Safety Plan Implementation

Applicant: Iowa DOT, Office of Traffic and Safety

Contact Person: Mary Stahlhut Title: Safety Programs Manager

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost $ 300,000

Safety Funds Requested $ 70,000

Title: Comprehensive Highway Safety Plan Implementation

Cost: $70,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

Objective

The Objective of this project is to reduce roadway injuries and fatalities by implementing Iowa's Comprehensive Highway Safety Plan (CHSP) in concert with Iowa's key stakeholders in State and local government and in the private sector.

With passage of the Federal Transportation reauthorization bill, SAFETEA-LU, a State Highway Safety Plan (SHSP) is required and future project funding approval for safety-related programs may be affected by Iowa's development and commitment to this plan.

Background

The Iowa "Safety Management System" has been reorganized as the Iowa Traffic Safety Alliance, (ITSA) " to better represent the collaborative nature of the partnership among diverse stakeholders in the public and private sectors.

The CHSP was developed in 2006, approved by DOT and DPS management in 2007, and implementation of strategies is underway, utilizing a number of special ITSA Action Teams and multi-disciplinary stakeholder and inter-agency efforts.

Methodology

Multi-agency involvement is key to implementing a CHSP that can be both comprehensive and effective. This CHSP funding will help build bridges and fill gaps between existing efforts and will help leverage available funds and resources among stakeholders.

Estimated costs

Implementation will require coordinated efforts and costs could include hiring a consultant to facilitate stakeholder participation and media outreach to extend the message of "changing the culture" to local communities and the motoring public.

Budget

TSIP supplemental funding: $70,000

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Traffic and Safety Engineering Forum, Training and Peer Exchange

Applicant: Iowa DOT, Office of Traffic and Safety

Contact Person: Mary Stahlhut Title: Safety Programs Manager

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost $ 20,000

Safety Funds Requested $ 20,000

Title: Traffic and Safety Engineering Forum, Training and Peer Exchange

Cost: $20,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

Objective

To provide up to date traffic safety resources, tools and training for Iowa's state and local engineers, and to foster sharing of knowledge and best practices among Highway Safety Practitioners.

Background

The Iowa DOT requires District staff to be involved in the traffic/safety duties and selection of the most appropriate improvement alternatives. District engineers have requested that training course be provided to their engineering staff to enhance their traffic/safety capabilities.

Methodology

As new resources are made available from FHWA and other sources, Iowa-specific materials are developed to deliver to District staff and occasionally their local partners. As new safety methods are researched, tested and approved, DOT engineers are engaged in the process to receive new practices and policies in a practical peer-to-peer environment. When feasible, Iowa traffic/safety engineers will also share best practices with their peers in other states that are experiencing similar engineering challenges...

Estimated Cost

$20,000

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Iowa Traffic Safety Alliance "Change the Culture"

Applicant: Iowa DOT, Office of Traffic and Safety

Contact Person: Mary Stahlhut Title: Safety Programs Manager

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost $ 50,000

Safety Funds Requested $ 50,000

Title: Iowa Traffic Safety Alliance "Change the Culture"

Cost: $50,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:
Implement the Iowa Traffic Safety Alliance (ITSA) marketing plan to "Change the Culture" with a public education program aimed at improving safety responsibility perceptions and acceptable driving norms of behavior.

The Young Driver Target audience (including ages 14-24) was identified in the Work Zone Safety Public Awareness campaign and alternating programs aimed at teens producing Public Service Announcements (PSA's) and a car give-away safety education program have been developed between the Iowa DOT, Iowa Public Safety, Media Outlets and other stakeholders, including those in the private sector.

This program will provide the core funding for this collaborative effort toward online social networking, electronic media and in-school driver safety awareness as part of the larger ITSA "Change the Culture" efforts.

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: NADS Motorcycle Conspicuity – Phase II: What Factors Have the Greatest Impact

Applicant: Iowa DOT, Office of Traffic and Safety

Contact Person: Mary Stahlhut Title: Safety Programs Manager

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost $ 50,000

Safety Funds Requested $ 50,000

Title: NADS Motorcycle Conspicuity – Phase II: What Factors Have the Greatest Impact

Cost: $50,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

Project Description

A study of the factors that contribute to the conspicuity of motorcycles in the driving environment.

Background

There appears to be little current research on motorcycle crash causation factors. An Iowa State University, InTrans literature review for the Iowa DOT did not provide much data related to conspicuity, and existing data is from the 1970s to early 1980s. The Iowa Motorcycle Operator Manual states that, "Over one-half of motorcycle/car crashes are caused by drivers entering a rider's right-of-way." And, "In crashes with motorcyclists, drivers often say that they never saw the motorcycle." Increasing the conspicuity of the motorcycle would seem to be one way to address this issue. The use of a driving simulator will allow modification of factors identified with motorcycle visibility.

Purpose

This project will determine the effect of three factors; modulating headlight, helmet color, torso clothing color, on the conspicuity of a motorcycle to a driver of a passenger vehicle.

Hypothesis

It is expected that brighter helmet and torso colors and a modulating headlight make a motorcycle conspicuous to a driver. It is also expected that some colors will increase the conspicuity of the motorcycle more than others and that some combinations may have a greater impact.

Methods and Procedures

Three independent variables will be examined, each at two to four levels: helmet color, torso color and a modulating headlight. Iowa Department of Transportation and a technical advisory committee (TAC), will help define the testing model. The colors to be used and frequency of modulation and other factors in the model will be based on the results of the ongoing InTrans project (led by Dr. Nadia Gkritza at ISU) to from 2001 – 2008 and through a review of current recommendations to motorcyclists by equipment manufacturers and motorcycle associations. Twenty-four participants will complete a drive on a NADS MiniSim or NADS2 driving simulator. During the drive they will be presented with several motorcycles in their driving environment, each with a different combination of helmet color, torso color and headlight modulation. Participants will indicate when each motorcycle is first visible to them by pressing a button on or near the

steering wheel of the driving simulator. The two primary dependent variables; detection distance and time to encounter will be calculated based on the participants button press.
The detection distance time to encounter data will be analyzed for which helmet and torso colors and headlight modulation frequency, both individually and in combination, made the motorcycles in the driver's environment the most conspicuous as indicated by larger detection distance and longer time to encounter.

Budget and Timeline

The effort for this project will span one year with a total budget of $49,800. Protocol design and development of driving scenarios would begin immediately upon project award and span approximately four months. Approval of the experimental protocol and materials by the University of Iowa IRB is expected to take one month following the completion of the experimental protocol. Integration of the driving scenarios will take place concurrently with IRB review and approval process. Recruitment and data collection will begin following IRB approval and is expected to require two months to complete. Data reduction and analysis is planned for the final five months, culminating with the submission of a report of the data one year after contract award.

Collaboration between U of I (Dawn Marshall, NADS) and ISU (Nadia Gkritza, InTrans). Idea submitted to Mary Stahlhut on June 3 ($50k, 12 months).

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project **NADS - Evaluation of Older Driver Training**

Applicant Iowa DOT, Office of Traffic and Safety

Contact Person Mary Stahlhut Title Safety Programs Manager

Complete Mailing Address 800 Lincoln Way

Ames, IA 50010

Phone (515) 239-1169 (Area Code) E-Mail Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific ☐
Traffic Control Device ☐
Safety Study ☒

Funding Amount

Total Project Cost $ 50,000

Safety Funds Requested $ 50,000

Title: NADS - Evaluation of Older Driver Training

Cost: $50,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

Project Description

A pilot study of the safety benefit of driver training courses targeted at older drivers towards the determination of criteria for such courses.

Significance

Older drivers constitute the fastest growing segment of the population and the driving public and represent an age group with an elevated risk of fatalities per vehicle mile traveled. In 2005, 36 million people or 12 percent of the population of the United States were aged 65 years and older. Older people (65 and older) are the fastest growing segment of the U.S. population. By 2010, the Census Bureau estimates that about 13 percent of the population will be over 65 and the percentage will increase to 16.4 percent by 2020 as the "baby boomers" enter this age group (He et al. 2005). As individuals move into the older population most drivers continue to drive. When compared to the entire U.S. driving population, older drivers are not dramatically overrepresented in terms of driver fatalities. Older drivers account for 14% of driver fatalities (NHTSA 2007). However, older drivers travel approximately half the number of miles of those under 65 (Lyman et al. 2002). As a result, the crash rate per mile driven is about twice as great for older drivers. Some of these fatalities can be attributed to the increased fragility of older drivers. In other words, older drivers are more likely to be killed than younger drivers involved in similar crashes. Fragility does not explain the entire picture of older driver risk. With age, many drivers experience declines in vision, hearing, reaction times, cognitive and motor abilities (Staplin et al. 1998). Even conscientious drivers must accommodate for these physical and mental challenges. Due to increases in the number of older drivers, and the increased risks for this group, interventions that successfully target improving the safety of older drivers would be expected to make a large safety impact.

Driver training targeted at older drivers may improve the safety of older drivers. Many organizations provide driver training targeted for older drivers, such as AARP and the American Automobile Association (AAA). Insurance companies often offer discounts to drivers who have completed such training. However, the effectiveness of these training programs targeted at older drivers has not been examined. Driver training programs for teens have been evaluated and there is evidence that driver training can help teen drivers1 , however the effectiveness depends on the components of the training provided (Allen & Cook; 2007). Driving simulators have been effectively used to evaluate the improvements in older driver performance as a result of training

(Roenker et al., 2003). Driving simulators offer the opportunity to evaluate the effectiveness of driver training programs in a safe, controlled and deterministic environment.

Purpose

The purpose of the proposed pilot program is to collect pilot data on whether there is a benefit to an older driver training program, whether the benefit is long lasting, and components of intervention that may be responsible for benefit. The pilot data will inform the development of a larger program with the long term goal of determining criteria for older driver training courses to be proposed to a national agency that focuses on issues of health, such as the National Institute of Health or Center for Disease Control.

Hypothesis

Hypotheses will be generated concerning a safety benefit of the components of a driver training course targeted for older drivers both in the short term, one to three months, and the long term, six months, after completion of the courses. It is expected there will be short-term measurable changes in driving performance. It is also expected that the measurable differences will moderately decrease in the long-term performance in the absence of changes in risk factors, and significantly decrease with an increase in risk factors.

Methods and Procedures

The pilot project will begin with identification of performance measures and criteria, components of the intervention, and older driver risk factors that will be tracked in the participant sample. Performance criteria will include measures such as lane keeping, speed control, reaction time to unexpected events, and gap acceptance in traffic.

A driver training course targeted at older drivers will be included, the AARP Driver Safety Program. The AARP program in Iowa offers drivers a four-hour course presented by a trained instructor. For the pilot study, the AARP course presentations will all be conducted by the same instructor to reduce instructor-based variability. The components of the course will be identified. The National Advanced Driving Simulator (NADS) will provide facilities for participants to complete the AARP course.

Two participant groups will be included in the pilot study; participants in the AARP four-hour course and a control group. Participants will be recruited through the use of established volunteer databases, flyers, and word of mouth. The two groups will consist of active drivers 55 years of age and older. NADS will host the AARP program on several dates. The participant groups will be balanced for gender, half male and half female, as well as age range and mean ages of each group to the extent possible.

One participant group will complete drives on the NADS MiniSim on four occasions; prior to beginning the course, one week, three months, and six months after completing the AARP course. The control group will complete the same drives on the MiniSim at the same time intervals; upon enrollment, one week, three months, and six months after enrollment. It is expected that 24 participants will be enrolled in each group.

On their first visit to the NADS facility to complete simulator drives, participants will give informed consent for participation in the study and consent for review of their driving records for the six months of their participation in the study. On each of the four visits to

complete simulator drives participants will complete survey about their driving history and the Driver Behavior Questionnaire, which asks about incidents that occur while they drive. Participants will also complete several evaluations short for risk factors associated with traffic accidents in older drivers:

- Mini Mental State Examination (MMSE)
- Trail Making B
- Clock-drawing
- Visual acuity-near and distance, and contrast sensitivity
- Rapid Walk, Foot Tap, Neck Rotation tests

The MMSE examines general cognition (Johansson et al., 1996; Marottoli et al., 1994; Molnar et al., 2007; Stav et al., 2008), The vision exams document visual impairment that may affect driving ability (Wood et al., 2008; De Raedt & Ponjaert-Kristoffersen, 2001; Marottoli, et al., 1998; Stav et al., 2008; Janke & Eberhard, 1997). Finally, the rapid walk (Stav et al., 2008), foot tap (Molna et al., 2007), neck rotation tests (Marottoli, et al., 1998) document mobility issues.
Following the evaluations, participants will complete two simulated drives on the NADS MiniSim, a desktop driving simulator that is compatible with the two higher fidelity driving simulator platforms at NADS. The first drive will be a practice drive that allows participants to become familiar with the controls of the MiniSim. The second drive will present participants with an urban environment including controlled intersections and interactive traffic.

Data analysis

The survey and questionnaire combined with the cognitive and physical evaluations will allow tracking of risk factors for crashes that change of the enrollment period of the study for all four participant groups. Driving performance data collected during their simulator drives will be analyzed for differences pre- and post- course completion for the three intervention groups. Analysis of the control group driving performance data will provide insight into any learning effect associated with repeated exposure to the simulator drives.

Budget and Timeline

This project would span eight to 14 months with a total cost of $43,000. The first three months of the study will entail review of the course materials and preparation of the experimental protocol materials for University of Iowa IRB review. Following IRB approval course dates would be set throughout the next six months. Community members taking part in the course and the control group would be invited to participate in the research study, creating a rolling enrollment as courses are presented. If study enrollment is not sufficient in the first six of enrollment and data collection, this phase of the project may be extended another three to six months. Analysis of the data would be an on-going process as each of the study visits are completed by participants and would continue one month past the last data collection visit. Creation of the final report will extend one month past data analysis with submission two months past the completion of data collection.

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: NADS Digital Billboard White Paper

Applicant: Iowa DOT, Office of Traffic and Safety

Contact Person: Mary Stahlhut Title: Safety Programs Manager

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost $ 10,000

Safety Funds Requested $ 10,000

Title: NADS Digital Billboard White Paper

Cost: $10,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

Background

Driver distraction is a current research topic and is receiving attention in the media and legislatures. Digital billboards, animated signs and lighted signs on motor vehicles are aspects of potential driving distracters that are receiving a great deal of media and research attention. The Federal Highway Administration is currently conducting a study on the dangers digital billboards may pose and several communities across the US have implemented a moratorium on increasing the number of digital billboards on the grounds that they are distracting. At the same time that concern over digital billboards is increasing, companies are proposing illuminated safety message signs on the sides of tractor trailers. However, whether safety messages in these locations would increase safety awareness without an undue increase in distraction is uncertain.

Proposed White Paper

NADS proposes a white paper based on a review of the current literature and recently completed research to identify what is known about digital billboards, lighted signage on moving vehicles, what research has been done and to identify the gaps in the research that may have important safety implications. The literature review would focus on two questions:

1) To what degree are digital billboards and lighted signs on moving vehicles an unsafe distraction?
2) Does safety signage cause driver awareness leading to behavior change?

Identifying these criteria would facilitate future research efforts into driver distraction presented by digital billboards and illuminated vehicle signage and may provide insight into policy formulation at the state, county or municipal levels.

Budget and Timeline

The proposed work would span 12 months with a total budget of $10,000. This timeline could be shortened to as little as three months if necessary.

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Workzone Safety Training

Applicant: Iowa Dept. of Transportation, Highway Division

Contact Person: Dan Sprengeler Title: Traffic Control Engineer

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: 515-239-1823 (Area Code) E-Mail: dan.sprengeler@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost $ 90,000

Safety Funds Requested $ 45,000

Title: Workzone Safety Training

Cost: $45,000

Schedule: Funds to be used in 2011

Contact: Dan Sprengeler, Traffic Control Engineer, Iowa DOT, 515-239-1823

Narrative:

Introduction

The Iowa DOT supports an ongoing program for training city, county, state, contractor, and utility personnel in traffic control within work zones. Motor vehicle crashes in work zones continue to kill and injure motorists and workers each year. Despite the hundreds of workers trained yearly (approximately 700 in 2010), many road workers have yet to be reached with training in basic work zone safety.

Some localities send several staff members each year and thus maintain an adequate training level over time. Other localities participate irregularly or not at all. Efforts are made to reach all Iowans who work on or adjacent to the roadway to insure that they understand proper traffic control methods required by law, according to the Manual on Uniform Traffic Control Devices, Part VI.

Objectives

- To conduct approximately 11 daylong workshops at locations across Iowa to accommodate at least 900 participants.
- To have instruction tailored to city, county, contractor, utility, and IDOT personnel.
- To retain consultant services for the primary trainer.
- To develop local personnel to assist in training.
- Partial funding of registration fees

Project Activities

The workshop begins with an initial large group training session followed by breakout sessions tailored to city, county, contractor, utility, and Iowa DOT personnel. Two videos produced in 2002 are being used. They were developed with Traffic Safety funds titled “When Luck Runs Out: Professional Flagging” and “Iowa DOT Work Zone Liability”. The curriculum is based upon the Manual on Uniform Traffic Control Devices (MUTCD) Part VI—Standards and Guides for Traffic

Controls for Street and Highway Construction, Maintenance, Utility, and Incident Management Operations.

As the subject matter expert, the consultant heads up the teaching teams that deliver the instruction. New volunteer teachers are sent to an in-depth training program such as the one conducted by the American Traffic Safety Services Association. Conference services are provided by the Iowa State University Office of Continuing Education and Professional Development, with additional coordination services provided by the Safety Circuit Rider based in the Center for Transportation Research and Education.

A modest registration fee offsets the cost of facilities, meals served on-site, student resource materials and textbooks, audiovisual technology, and conference services. Funding requested from the Traffic Safety Improvement Program would be used for the consultant contract, the remaining conference services expenses, and any other costs associated with implementing the training program.

Planning meetings are held periodically by the Teaching/Planning Team coordinated through the Office of Traffic and Safety, Highway Division.

Budget

For consultant services, instructional materials, and conference services to train up to 900 city, county, state, contractor, and utility personnel during calendar year 2010:	$45,000

(Note: The registration fee is the only additional source of funding for this program and provides roughly a half the cost of conducting the program.)

REQUEST FOR TRAFFIC SAFETY FUNDS
Iowa Department of Transportation

GENERAL INFORMATION

Location/Title of Project: Intersection Magic/Diagram Magic Statewide License Renewal

Applicant: Iowa Department of Transportation, Office of Traffic and Safety

Contact Person: Michael D. Pawlovich **Title**: Traffic Safety/Crash Data Engineer

Complete Mailing Address: 800 Lincoln Way
Ames, IA 50010

Daytime Phone: (515) 239-1428 **e-mail**: Michael.Pawlovich@dot.iowa.gov

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type
_____Site Specific
_____Traffic Control Device
__xxxx__Safety Study

Funding Total Cost of the Project $ 16,000

Safety Funds Requested $ 16,000

Intersection Magic/Diagram Magic Software Statewide License Renewal

Diagram Magic is a proprietary software tool that leads the market for computer automation of schematic diagrams of collisions at intersections. This software is integrated via a COTS solution into Iowa's customized, more robust safety analysis software (SAVER). This integration enables the Diagram Magic component to seamlessly function within the SAVER environment for Iowa analysts, greatly simplifying software usage and annual maintenance.

The statewide license held by Iowa formerly for Intersection Magic has been converted to Diagram Magic and, very recently, updated to Crash Magic, with many additional graphing, filtering, and other capabilities. Iowa DOT is purchasing the new update with past ½% funds. All SAVER users will have access to Crash Magic – state, local, public, and private. Users include Iowa DOT District personnel, Iowa DOT main office personnel, county and city engineers, county and city enforcement, researchers, and a variety of others – about 150 total. The software has permitted these users to more rapidly construct composite collision/crash diagrams at problem intersections/sites and thus allow more thorough identification and analyses of safety problems.

Normally this software might cost thousands of dollars per site installation. However, through this statewide license, an agreement has been reached to minimize the customer service the vendor must perform, transferring that to personnel within the Office of Traffic and Safety, and thereby reducing the customer responsiveness responsibility for the vendor and associated cost of this responsibility.

The software product was developed and is sold and maintained by Pd' Programming, Inc. of Lafayette, CO. The company supports around 200 customers nationally with a variety of products – all in the vein of collision diagramming. They have multiple state DOT customers, a couple states with statewide licenses (Idaho and South Dakota), and many city customers.

This request is for the annual renewal fee ($15,000) that also entitles Iowa users access to upgrades, which are under works per requests related to SAVER redevelopment, as they become available and some miscellaneous distribution expenses within Iowa ($1,000): $16,000

REQUEST FOR TRAFFIC SAFETY FUNDS
Iowa Department of Transportation

GENERAL INFORMATION

Location/Title of Project: Iowa Traffic Safety Data Service (ITSDS)

Applicant: Iowa Department of Transportation, Office of Traffic and Safety

Contact Person: Michael D. Pawlovich **Title**: Traffic Safety/Crash Data Engineer

Complete Mailing Address: 800 Lincoln Way
Ames, IA 50010

Daytime Phone: (515) 239-1428 **e-mail**: Michael.Pawlovich@dot.iowa.gov

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

_____Site Specific
_____Traffic Control Device
__xxxx__Safety Study

Funding Total Cost of the Project $ 120,000

Safety Funds Requested $ 20,000

Iowa Traffic Safety Data Service (ITSDS)

The Iowa Traffic Safety Data Service (ITSDS) provides timely access to crash analyses and reports from many safety and geographic information systems tools developed by the Iowa Department of Transportation (DOT) and the Center for Transportation Research and Education (InTrans/CTRE) in recent years. The ITSDS facilitates decision-making, effective presentation of information, and education.

The ITSDS originated as a major component of Iowa's Section 411 (federal) program for improving state traffic records systems. It was approved by the Iowa Statewide Traffic Records Advisory Committee (STRAC) as a way of attaining the objectives within the statewide strategic plan for safety data. The Section 411 program has now ended and Section 408 funds currently provide the primary support; however, support from the Traffic Safety Improvement Program (TSIP) remains important as Section 408 funds can be redirected, may end with a new federal transportation bill, and are less flexible.

The services provided by ITSDS are available at no cost to Iowa cities, counties, the DOT, and the Governor's Traffic Safety Bureau (GTSB). It has become a highly valued program by state and local safety entities in need of data analysis or to augment the widely distributed analysis tools, SAVER and CMaT.

Amount requested for contract with InTrans /CTRE to support ITSDS: $20,000

Iowa Department of Transportation

Rev. 3/08

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Training Materials for Work Zone Traffic Control

Applicant: Iowa Department of Transpoortation/ Office of Traffic and Safety

Contact Person: Daniel Sprengeler Title: Traffic Control Engineer

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: (515) 239-1823 (Area Code) E-Mail: dan.sprengeler@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 50,000.00

Safety Funds Requested: $ 50,000.00

Title: Training Materials for Work Zone Traffic Control

Background :

The Iowa Department of Transportation provides training for hundreds of flaggers and workers. This training helps to promote work zone safety for workers and motorists on Iowa roadways. Although the department has conducted training for decades, the videos and books used must be updated periodically to reflect current standards and state of the practice.

Proposal:

It is proposed that a team be assembled to review current training materials, including the Flagger Training Video and the Work Zone Safety for Iowa Manual, and to recommend revisions based on current standards and practices. The desired outcome will be adequately trained flaggers and workers in accordance with department policies and a safer environment for traffic and workers in Iowa work zones.

Completion: Materials should be completed in time for the 2012 construction season.

Funding: $50,000

Iowa Department of Transportation

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Purchase the 2009 MUTCD for the DOT, Cities and Counties

Applicant: Iowa Department of Transportation

Contact Person: Tim Crouch Title: State Traffic Engineer

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: 515-294-7311 (Area Code) E-Mail: tim.crouch@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 98,000

Safety Funds Requested: $ 98,000

Title: Traffic Safety Liaison Program for 2010-2011

Cost: $98,000

Schedule: Funds to be used in 2011

Contact: Tim Crouch, State Traffic Engineer, Iowa DOT, (515)239-1513

Narrative:
The Iowa Department of Transportation has purchased the Manual on Uniform Traffic Control Devices (MUTCD) and distributed the MUTCD to every city and county in the state whenever a new version has been adopted by administrative rule. The 2009 MUTCD will be adopted as the state signing manual and become effective late in 2010.

In order to provide a copy of the manual to each of the cities (multiple copies to the larger cities) and two copies to each of the counties, as well as providing copies to the offices/districts within the Department, we will 1700 copies of the manual. The American Association of State Highway and Transportation Officials (AASHTO) has quoted a price of $56 per manual for 1700 copies.

Iowa Department of Transportation

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Improving Traffic Safety Culture in Iowa – Phase II

Applicant: Iowa DOT, Office of Traffic & Safety

Contact Person: Mary Stahlhut Title: Safety Program Manager

Complete Mailing Address: 800 Lincoln Way
Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost $ 100,000

Safety Funds Requested $ 100,000

Title: Improving Traffic Safety Culture in Iowa – Phase II

Cost: $100,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

Phase II of Improving Traffic Safety Culture in Iowa will focus on producing actions that will improve the traffic safety culture across the state of Iowa. More specifically, this second phase will synthesize the expert opinions solicited in Phase I with prevailing public views and/or opinions. This will be accomplished by summarizing public opinion data, such as AAA Foundation reports that find nearly 80 percent of the population perceiving aggressive driving as a serious problem, and contrasting this with past data. Conducting another survey to follow up on Iowa's 2000 public opinion survey could also better define the public's position on top safety culture issues. This, in turn, will provide researchers with a better basis for developing actionable, fundable, and ultimately successful strategies that will make a tangible difference in improving traffic safety in Iowa. An important part of succeeding with safety strategies will be in successfully conveying/marketing safety messages while, at the same time, influencing better driving habits through driver education (GDL or continuing). In addition, Phase II will take into account best practices and successes (such as the driver's education program for gravel roads in Linn County) and examples of safety strategies that succeeded after significant "pushback", such as cable median barriers and roundabouts, in a bid to provide context for the tough challenges that lie ahead for any chosen strategy and reinforce the need for a long-term commitment by the state of Iowa to improving its safety culture.

PIs: Nadia Gkritza and Chris Albrecht, InTrans
(Potential collaboration with the Center for Social and Behavioral Research at UNI)

Idea prepared for Mary Stahlhut ($45k to $100k, 12-18 months)*
** Includes funds for a public opinion survey to be conducted potentially by researchers at UNI*

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: A Synthesis of the Sate-of-the-Art on Prioritization of Traffic Safety Funds

Applicant: Iowa DOT, Office of Traffic & Safety

Contact Person: Mary Stahlhut Title: Safety Program Manager

Complete Mailing Address: 800 Lincoln Way
Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost $ 30,000

Safety Funds Requested $ 30,000

Title: A Synthesis of the Sate-of-the-Art on Prioritization of Traffic Safety Funds

Cost: $30,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

The research proposed is to investigate the state-of-the-art in the ranking and selection procedures of safety projects/programs throughout the United States. This research will include a review of the current safety programs in Iowa, compare these to those in other States, and provide a synthesis of the current practice in the prioritization of traffic safety funds. Additional insights will be gathered from a survey of state safety engineers on the state-of-the-art in crash analysis techniques and programs that was conducted as part of an ongoing research project with MnDOT (Dr. Souleyrette serves as the PI). It is anticipated that the tools and procedures used would differ based on the scope of the safety program as well as the geographical (corridor, region, state) and temporal (short-run versus long-run) dimensions of the program. The proposed research will offer recommendations on the applicability of economic analysis tools (such as B/C, incremental B/C, NPV and other) for project ranking and selection, in terms of appropriate and inappropriate uses, relevant types of projects for analysis, level of effort and resources as well as provide a framework for establishing priorities across Iowa's safety programs.

PIs: Nadia Gkritza and Reg Souleyrette, InTrans
(Estimated budget and timeline: $30k, 12 months)

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Public Involvement, Engineering and Visualization of Innovative Traffic Safety Applications using Minisim Driving Simulator

Applicant: Iowa DOT, Office of Traffic & Safety

Contact Person: Mary Stahlhut Title: Safety Program Manager

Complete Mailing Address: 800 Lincoln Way
Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 60,000

Safety Funds Requested: $ 60,000

Title: Public Involvement, Engineering and Visualization of Innovative Traffic Safety Applications using Minisim Driving Simulator

Cost: $60,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

In the summer of 2010, CTRE at InTrans is purchasing a mobile driver simulator from the University of Iowa (Minisim). The Minisim is a medium fidelity driver simulator which is portable and capable of running sophisticated simulation software written for the NHTSA's National Advanced Driver Simulator at the University of Iowa. As the simulator is portable it can be taken to public meetings and local engineering offices (County Engineers, DOT districts, city public works departments). The goal of this project is to demonstrate the utility of the portable Minisim for educating engineers and the general public about innovative traffic safety devices. Driver simulation complements traffic simulation which is two dimensional and not from the driver's perspective. Several recent projects could have benefited from such simulation in "making the case" for safety improvements. These include J-Turn expressway intersections, roundabouts, and work zone traffic control. Use at public meetings may help alleviate concerns over the novelty of such designs and practices, and better help local leaders to explain the new concepts to local citizens. Engineers can benefit from "driving" their designs and making adjustments prior to field implementation (for example, how merge lanes in construction zones are likely to operate at night or in adverse weather conditions). A project developing the J-turn simulation as well as a microstation to simulator software translator will begin in summer 2010. This request from TSF funds will allow researchers at InTrans to study the effectiveness of driving simulation on the public process and to work with engineers to determine how to use the simulator to improve the design and implementation process. The project will identify a new application of the Minisim (likely roundabouts or work zones) and use the NADS developed translator to adapt Iowa DOT plans into a simulation. A user study will be conducted in cooperation with the Iowa State Human Computer Interaction program, and consultation with the University of Iowa will be provided.

PI: Reg Souleyrette
$60,000 (with possible matching funds from MTC)

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: The Impact of Roadway Charateristics on Safety Improvement Prioritization

Applicant: Iowa DOT, Office of Traffic & Safety

Contact Person: Mary Stahlhut Title: Safety Program Manager

Complete Mailing Address: 800 Lincoln Way
Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 50,000

Safety Funds Requested: $ 50,000

Title: The Impact of Roadway Charateristics on Safety Improvement Prioritization

Cost: $50,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

A series of tools and research studies have recently been completed that propose the use of various roadway characteristics as potential surrogates or supplements to the use of crash data for purposes of safety improvement location prioritization. These roadway characteristics are identified in prediction models, modification or reduction factors, and/or suggested through their commonly accepted impacts on driver behavior/choices. The relative significance (or weight) of the characteristics proposed are not always obvious or the same from study to study. The objective of this project would be to review the details of the recently completed tools/documents related to safety prediction and/or improvement prioritization. The validity and potential impact of the including particular roadway characteristics in a prioritization would then be categorized. This activity may involve an evaluation of the robustness used in determining these factors and/or a simple sensitivity analysis. It is hypothesized that there are particular roadway characteristics with potential safety impacts that greatly outweigh (and are more valid than) some of the others proposed in the literature. These "primary" characteristics should be those that are included in a simple proactive prioritization of safety improvement locations. Safety improvement prioritization lists based solely on crash data have a reactive focus. Each additional roadway characteristic that is added to the creation of these lists may or may not change the outcome.

PI: Keith Knapp
Potential Funding Needed: $50,000

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Evaluating the relationship between curve approach speed, curve radius, and safety

Applicant: Iowa DOT, Office of Traffic & Safety

Contact Person: Mary Stahlhut Title: Safety Program Manager

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 35,000

Safety Funds Requested: $ 35,000

Title: Evaluating the relationship between curve approach speed, curve radius, and safety

Cost: $35,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

Several seminal studies have documented the impact of speed on crash likelihood. Studies have also indicated a relationship between roadway geometry and crashes. However, the relationship between speed, roadway geometry, and crash likelihood is not known. FHWA, for instance, estimates that approximately 56% of run-off-road fatal crashes on curves are speed related although the methodology to document that statistic is unknown. Understanding the relationship between speed, curve geometry, and crash likelihood would be particularly useful since curves have a disproportionate number of lane departure crashes and are an area of concern. Preston (2009), for instance reported that 25% to 50% of severe road departure crashes in Minnesota occurred on curves, while curves account for only 10% of the system mileage.

Additionally, agencies invest significant resources into curve countermeasures without truly understanding how the countermeasure will impact driver behavior. As a result, resources may not be directed in the most cost effective and beneficial manner.

Objective: The objective of this project would be to develop a relationship between speed, horizontal curve radius (and possibly other curve geometry), and a driver's ability to negotiate the curve. Curve negotiation will be used as a crash surrogate.

Benefits of Research: While analysis of the relationship between speed and curve negotiation does not provide immediately applicable results, the relationship developed will help us understand what drivers are doing as they approach curves and allow us to better determine how to gear to solution to the problem.

PI: Shauna Hallmark
Potential Funding needed: $35,000 (with $14,000 in MTC money for a student)

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Four-way Stop to Traffic Signal

Applicant: Iowa DOT, Office of Traffic & Safety

Contact Person: Mary Stahlhut Title: Safety Program Manager

Complete Mailing Address: 800 Lincoln Way
Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 25,000

Safety Funds Requested: $ 25,000

Title: Four-Way Stop to Traffic Signal

Cost: $25,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

This project will evaluate the safety impact where 4-way stop controlled intersections were converted to traffic signal control on high speed roadways. This effort includes working with Iowa DOT staff to identify locations (two in Marion and one in Tama/Toledo) for further analysis.

PI: Neal Hawkins
Potential Funding needed: $25,000

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Low-Cost Treatment on Curves

Applicant: Iowa DOT, Office of Traffic & Safety

Contact Person: Mary Stahlhut Title: Safety Program Manager

Complete Mailing Address: 800 Lincoln Way
Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 20,000

Safety Funds Requested: $ 20,000

Title: Low-Cost Treatment on Curves

Cost: $20,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

This project is a continuation of the current FHWA, Iowa DOT and IHRB research project on evaluating low cost measures to reduce speeds and crashes on high-crash horizontal curves on 2-lane high speed rural roads. The Iowa DOT funded this effort in two phases (I and II) at $40,000 per phase. The research team will be conducting lane tracking studies on some of the sites to determine the impact of the low cost treatment (larger chevrons, on-pavement markings, reflecterized posts, etc…) on how drivers navigate the curve. Road tubes in a Z-configuration will be used to determine the position of the vehicle at several points within the curve. This work will be conducted as part of Phase II, so the funds are needed this calendar year.

PIs: Hallmark, Hawkins, and Smadi
Needed Funds: $20,000

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Oversize Loads and Roundabouts

Applicant: Iowa DOT, Office of Traffic & Safety

Contact Person: Tim Simodynes Title: Traffic Safety Engineer

Complete Mailing Address: 800 Lincoln Way
Ames, IA 50010

Phone: 515-239-1349 (Area Code) E-Mail: Tim.Simodynes@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific Traffic Control Device	☐
Safety Study	X

Funding Amount

Total Project Cost	$ 40,000
Safety Funds Requested	$ 40,000

Title: Oversize Loads and Roundabouts

Cost: $40,000

Schedule: Funds to be used in FY 2012

Contact: Tim Simodynes, Office of Traffic and Safety, Iowa DOT, 515-239-1349
Methods Section, Office of Design, Iowa DOT

Narrative:

Although modern roundabouts have proven to be one of the most efficient and safest forms of intersection control for a wide variety of locations and road users, one area of concern is their ability to accommodate vehicles hauling oversize "super loads."

Since 2009, Iowa has been part of a multi-state, pooled-fund study to look at options for roundabouts to accommodate super loads and oversize loads, such as wind turbine parts.

These funds will be used to provide additional support and follow-up to the pooled-fund study. Funding will allow Iowa to implement the findings of the pooled fund study, or to develop guidance on placement and design of roundabouts to address the needs of super-loads, while still optimizing the safety and operational benefits to all roadway users.

Iowa Department of Transportation

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Evaluation of Rural Intersection Treatments

Applicant: Iowa DOT, Office of Traffic & Safety

Contact Person: Tim Simodynes Title: T Eng Spec

Complete Mailing Address: 800 Lincoln Way

Ames, IA 50010

Phone: (515) 239-1349 (Area Code) E-Mail: Tim.Simodynes@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 120,000

Safety Funds Requested: $ 50,000

Title: Evaluation of Rural Intersection Treatments

Cost: $50,000

Schedule: Funds to be used in 2011

Contact: Tim Simodynes, Office of Traffic and Safety, Iowa DOT, (515) 239-1349

Narrative:

Problem: Rural intersection crashes can be very severe due to the high approach speeds present. Crashes at rural intersections are frequently a result of failure to yield. Various intersection treatments, such advance stop-line rumble strips or overhead flashing beacons, are used to alert drivers to the presence of an intersection but the effectiveness of the various treatments is not well documented.

Objective: The objective of this research is to evaluate the effectiveness of rural intersection treatments on safety. In particular, the study will focus on which driver behaviors lead to unsafe conditions and evaluate how the treatments affect those behaviors. The study will focus on rural stop or yield control intersections.

Project tasks: A brief list of tasks to complete the research include the following:

- Summarize effectiveness of known intersection treatments: This may include advance stop-line rumble strips, overhead flashing beacons, etc. Results will be in the form of a guidebook which can be used by rural agencies in selecting treatments.
- Identify standard and innovative intersection treatments: Standard treatments would only be included if little information is available about their effectiveness. Treatments may include the following:
  - Stop sign beacons
  - In pavement lighting
  - Flashing stop signs activated by vehicle speed

  The team will work with agencies that are in the process of implementing innovative treatments and will work with vendors to identify treatments. For instance, Buchanan County is implementing one of the first truly rural roundabouts in Iowa. This will provide an opportunity to evaluate which driver behaviors are changed by the roundabout and allow us to make an assessment of how this will impact safety. The team has worked with another vendor who may provide complimentary use of in-pavement lights to mark the intersection approach.
- Select 4 to 5 high crash intersections
- Collect before data on driver safety behavior: This may include metrics such as yield rate, speed reduction, etc.
- Apply treatments

- Collect after data
- Analyze data
- Document results

Benefits of Research: The main benefit is additional information for agencies to select treatments for problematic rural intersections.

Amount Requested: The estimated amount to complete the project is $120,000. A total of $50,000 is requested from ½ percent. The remaining funds will be requested from the Iowa Highway Research Board and Midwest Transportation Consortium. Additionally, the Midwest Transportation Consortium will provide match for a student which is approximately $14,000 for salary, benefits, and overhead.

Iowa Department of Transportation

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project: Evaluate Iowa's New Center Line Rumble Policy

Applicant: Iowa DOT, Office of Traffic & Safety

Contact Person: Mary Stahlhut Title: Safety Program Manager

Complete Mailing Address: 800 Lincoln Way
Ames, IA 50010

Phone: (515) 239-1169 (Area Code) E-Mail: Mary.Stahlhut@dot.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific ☐
- Traffic Control Device ☐
- Safety Study ☒

Funding Amount

Total Project Cost: $ 30,000

Safety Funds Requested: $ 30,000

Title: Evaluate Iowa's New Center Line Rumble Policy

Cost: $30,000

Schedule: Funds to be used in 2011

Contact: Mary Stahlhut, Office of Traffic and Safety, Iowa DOT, (515) 239-1169

Narrative:

This project is to develop a process to track data from applications of the recently approved Iowa DOT policy on rumble strips so that future studies can be conducted on its effectiveness in improving safety. Location, date, and type of rumble are few of the data items that need to be stored. The project will also investigate the impact of the center line rumble on pavement (deterioration) condition will in cooperation with the office of Design (Chris Brakke).

PIs: Hawkins and Smadi

Needed Funds: $15,000 to $30,000 depending on the scope