

Traffic Safety Improvement Program

Applications for STUDIES, RESEARCH, PUBLIC INFORMATION INITIATIVES FY 2014



Received August 15, 2012

**STUDIES, RESEARCH, PUBLIC INFORMATION INITIATIVES
FY 2014**

Page No.	Applicant	Title/Subject	\$\$\$	
			Project	Request
1	City of Clive/ City of Urbandale	I-35/80 & Hickman Road Interchange Study	\$110,900	\$110,900
13	City of Waterloo	Traffic Safety Awareness Campaign	\$20,000	\$20,000
19	Ringgold County	Posted Bridge Public Awareness Program	\$37,080	\$37,080
23	Iowa DOT, Office of Traffic & Safety	Work Zone Safety Training	\$115,000	\$55,000
25	Iowa DOT, Office of Traffic & Safety	Analysis: Iowa SPF - CMF Development	\$200,000	\$200,000
27	Iowa DOT, Office of Traffic & Safety	Crash Magic Statewide License Renewal	\$15,000	\$15,000
29	Iowa DOT, Office of Traffic & Safety	Data Analysis: Crash Facts	\$40,000	\$40,000
31	Iowa DOT, Office of Traffic & Safety	Iowa Traffic Safety Data Service (ITSDS)	\$250,000	\$40,000
33	Iowa DOT, Office of Traffic & Safety	Development of Iowa Road Safety Audit or Assessment Guidelines	\$30,000	\$30,000
35	Iowa DOT, Office of Traffic & Safety	Effectiveness of TEAP Studies	\$50,000	\$50,000
37	Iowa DOT, Office of Traffic & Safety	Safety Improvement Webinar Project	\$25,000	\$25,000
39	Iowa DOT, Office of Traffic & Safety	Traffic & Safety Forum, Training & Peer Exchange	\$20,000	\$20,000
41	Iowa DOT, Office of Traffic & Safety	Crash Analysis Research Subscription	\$8,000	\$8,000

Continued on next page

**STUDIES, RESEARCH, PUBLIC INFORMATION INITIATIVES
(Continued)**

Page No.	Applicant	Title/Subject	\$\$\$	
			Project	Request
43	Iowa DOT, Office of Traffic & Safety	Pavement Markings on Low Volume Roads	\$25,000	\$25,000
45	Iowa DOT, Office of Traffic & Safety	Pilot Evaluation of Retro-Reflective Sheeting Performance	\$30,000	\$30,000
47	Iowa DOT, Office of Traffic & Safety	Measuring Highway Safety Investments	\$40,000	\$40,000
49	Iowa DOT, Office of Traffic & Safety	Return on Investment in Data & Information Tools for Data-Driven Safety Programs	\$60,000	\$60,000
51	Iowa DOT, Office of Traffic & Safety	Centerline Rumbles Affect on Pavement Joints	\$50,000	\$50,000
53	Iowa DOT, Office of Traffic & Safety	Rural Roads Safety Public Service Announcement	\$20,000	\$20,000
	Totals	19 Projects	\$1,145,980	\$875,980

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project I-35/80 and Hickman Road InterchangeApplicant City of CliveContact Person Bart Weller Title Director of Public WorksComplete Mailing Address 2123 NW 111th Street
Clive, IA 50325Phone (515) 223-6231 E-Mail bweller@cityofclive.com
(Area Code)

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) City of UrbandaleContact Person Dave McKay Title Director of Public WorksComplete Mailing Address 3600 86th Street
Urbandale, IA 50322Phone (515) 331-6713 E-Mail dmckay@urbandale.org
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

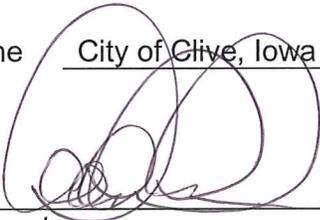
Total Project Cost \$ 110,900Safety Funds Requested \$ 110,900

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating local government(s). I understand the attached resolution(s) binds the participating local government(s) to assume responsibility if any additional funds are committed, and to ensure maintenance of any new or improved city streets or secondary roads.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the City of Clive, Iowa

Signed:  8/2/2012
Signature Date Signed

Scott Cirksena
Typed Name

Attest:  8/2/12
Signature Date Signed

Pamela L. Blessman
Typed Name

RESOLUTION NO. 2012-220

RESOLUTION AUTHORIZING MCCLURE ENGINEERING COMPANY TO SUBMIT APPLICATION TO THE IOWA DEPARTMENT OF TRANSPORTATION FOR TRAFFIC SAFETY FUNDING IN CONNECTION WITH THE U.S. HIGHWAY 6 (HICKMAN RD) INTERSTATE 35/80 INTERCHANGE OPERATIONS STUDY.

WHEREAS, the City Council of the City of Clive has heretofore deemed it necessary and desirable to address issues and plan improvements to the U.S. Highway 6 (Hickman Rd) and Interstate I-35/80 Interchange, said operations study for potential improvements being referred to as "U.S. Highway 6 / Hickman Road at Interstate I-35/80 Interchange Operations Study," and

WHEREAS, as part of the project, the City will pursue grant funding through the Iowa Department of Transportation to fund said project; and

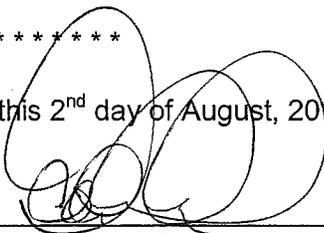
WHEREAS, McClure Engineering Company has prepared an application for traffic safety funding in the amount of \$110,900.00; and

WHEREAS, it would be in the best interests of the City of Clive to submit said application.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Clive, Polk County, Iowa, that the above-referenced application is supported and the same hereby approved.

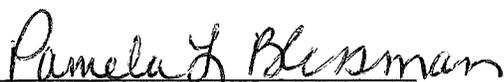
BE IT FURTHER RESOLVED that the Mayor and City Clerk are hereby authorized and directed to execute said application on behalf of the City of Clive.

Passed and approved this 2nd day of August, 2012.



Scott Cirksena, Mayor
City of Clive, IA

ATTEST:


Pamela Blessman, City Clerk
City of Clive, IA

RESOLUTION NO. 94-2012

RESOLUTION AUTHORIZING MCCLURE ENGINEERING COMPANY TO SUBMIT APPLICATION TO THE IOWA DEPARTMENT OF TRANSPORTATION FOR TRAFFIC SAFETY FUNDING IN CONNECTION WITH THE U.S. HIGHWAY 6 (HICKMAN RD) INTERSTATE 35/80 INTERCHANGE OPERATIONS STUDY.

WHEREAS, the City Council of the City of Urbandale has heretofore deemed it necessary and desirable to address issues and plan improvements to the U.S. Highway 6 (Hickman Rd) and Interstate I-35/80 Interchange, said operations study for potential improvements being referred to as "U.S. Highway 6 / Hickman Road at Interstate I-35/80 Interchange Operations Study," and

WHEREAS, as part of the project, the City will pursue grant funding through the Iowa Department of Transportation to fund said project; and

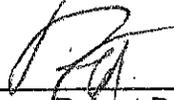
WHEREAS, McClure Engineering Company has prepared an application for traffic safety funding in the amount of \$110,900.00; and

WHEREAS, it would be in the best interests of the City of Urbandale to submit said application.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Urbandale, Polk County, Iowa, that the above-referenced application is supported and the same hereby approved.

BE IT FURTHER RESOLVED that the Mayor and City Clerk are hereby authorized and directed to execute said application on behalf of the City of Urbandale.

Passed and approved this 7th day of August, 2012.



Robert D. Andeweg, Mayor
City of Urbandale, IA

ATTEST:



Debra Mains, City Clerk
City of Urbandale, IA

EXHIBIT "B"

PROJECT NARRATIVE

U.S. HIGHWAY 6 / HICKMAN ROAD AT INTERSTATE I-35/80

TRAFFIC SAFETY AND OPERATIONS OF DDI CONFIGURATION

Existing Conditions:

The Cities of Clive and Urbandale are located in central Iowa and are part of the Des Moines metropolitan region. These two cities share corporate boundaries with the cities of Johnston, Grimes, Waukee, West Des Moines, and Des Moines. I-35/80 at the U.S. Highway 6/Hickman interchange runs in a north-south direction through Clive and Urbandale and carries approximately 105,000 vehicles per day. The interstate serves as an important metropolitan, regional, and interregional route as well as heavily serving the trucking industry.

An important and widely used route, U.S. Highway 6 runs in an east-west fashion, intersecting I-35/80 where it carries approximately 38,000 vehicles per day. U.S. Highway 6 is a 4-lane divided highway connecting rural and urban areas from the vicinity of Adel through multiple cities and into Des Moines. The I-35-80/U.S. Highway 6/Hickman interchange was built in 1958 and is a traditional diamond configuration. The mainline bridges were reconstructed in 1989 and currently have very high sufficiency ratings. The existing diamond interchange was constructed with side-by-side left turns providing six lanes on U.S. Highway 6/Hickman Road under the interstate.

The existing U.S. Highway 6/Hickman Road interchange is nearing its functional capacity. A recent study indicates that several movements are at poor levels of service. The high volume of left turn movements from U.S Highway 6 to the interstate are major contributors to the problem. Combined with heavy off-ramps volumes and increasing traffic on the through movements, this interchange is experiencing problematic conditions. A proposed development site in the northwest corner of the interchange has the potential to add more than a thousand trips during the peak hour. Additionally, more development is expected along the corridor farther to the west.

As a result, there is concern over the safety of this intersection and studies have shown that red light running has increased. The City of Clive studied the number of violations and installed red light running cameras as a tool for the city to monitor the high-risk intersections and provide continuous objective enforcement. RLR cameras were installed for the eastbound approach at the southbound ramp and for the northbound approach at northbound ramp.

Project Concept:

To address safety and capacity issues, the cities would like to investigate the potential of an alternate interchange form, specifically a diverging diamond interchange (DDI).

The proposed study would consist of completing an Interchange Operations Report (IOR). The purpose of the study would be to eliminate the existing diamond configuration and evaluate a diverging diamond interchange configuration that would address both safety and capacity issues but that does not require reconstruction of the interstate bridge. The diverging diamond would eliminate the need for red light running cameras, eliminate the angle, on-coming left turn crashes by removing this conflict point, and reduce rear end crashes that are occurring due to queuing. The proposed interchange form will provide additional capacity and defer the replacement of the bridge until the bridge is near the end of its useful life. To make the study thorough and complete, and as an exercise of comparisons, alternate

interchange configurations would be examined by investigating the operational aspects of other interchange types, such as a standard diamond with enhanced/added lanes, partial cloverleaf (Parclo with entrance loops) and a single point urban interchange (SPUI).

A diverging diamond interchange (DDI), sometimes referred to as a double crossover diamond (DCD), is a diamond interchange that more efficiently facilitates heavy left-turn movements. While the ramp configuration is similar to a traditional diamond interchange, traffic on the cross route moves to the left side of the roadway for the segment between signalized ramp intersections. By moving traffic to the left, left-turning vehicles can enter the limited access highway without the need for a left-turn signal phase at the signalized ramp intersections. Also, left-turning vehicles on the cross route do not conflict with opposing through traffic and may turn without stopping.

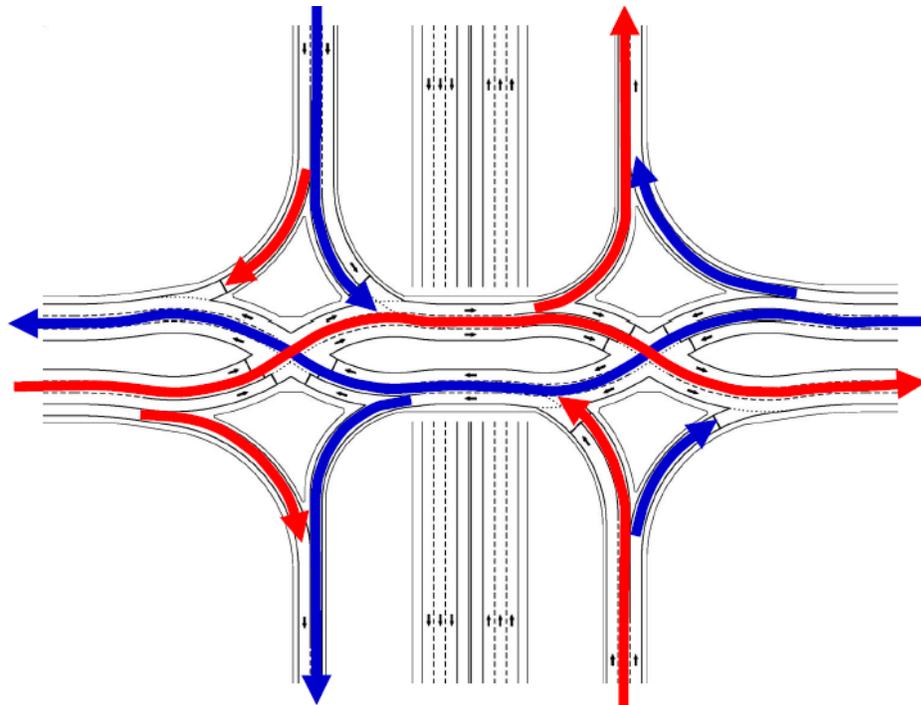


Figure 1 Traffic Movements at a DDI

A preliminary traffic analysis involving the conversion of the interchange to a DDI configuration was performed. The analysis indicates that this configuration improves most of the movements and provides better service.

The DDI reduces total conflict points from the 30 points within a traditional diamond to only 18. Furthermore, the reduction mainly applies to the number of crossing points, the most crucial conflict type; a drop from 10 to 2, as shown in Table 1. Figure 2 below shows a traditional diamond interchange while Figure 3 shows the layout of a DDI. The dots on the drawings show the location of the points of conflict.

Table 1 Conflict Points

Type	Diamond	DDI
Diverging	10	8
Merging	10	8
Crossing	10	2
Total	30	18

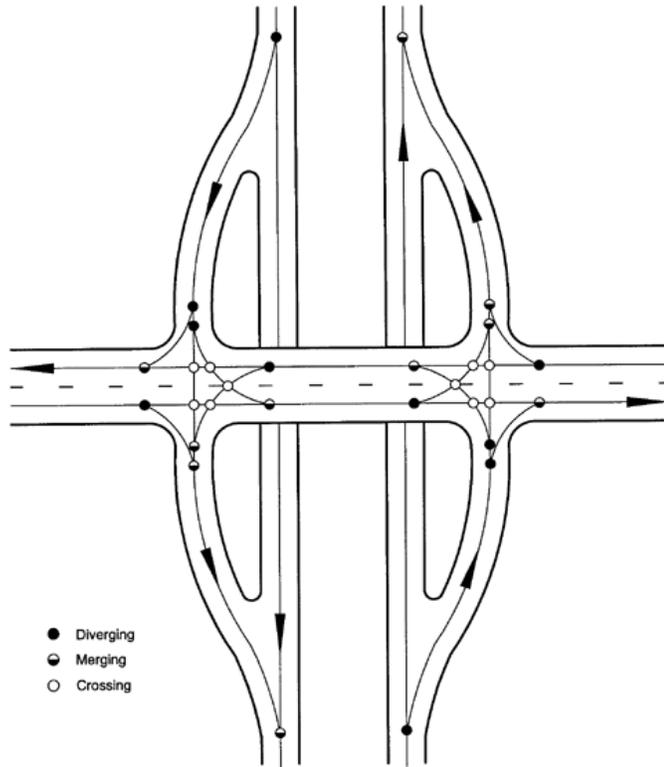


Figure 2 Points of Conflict on Diamond Interchange

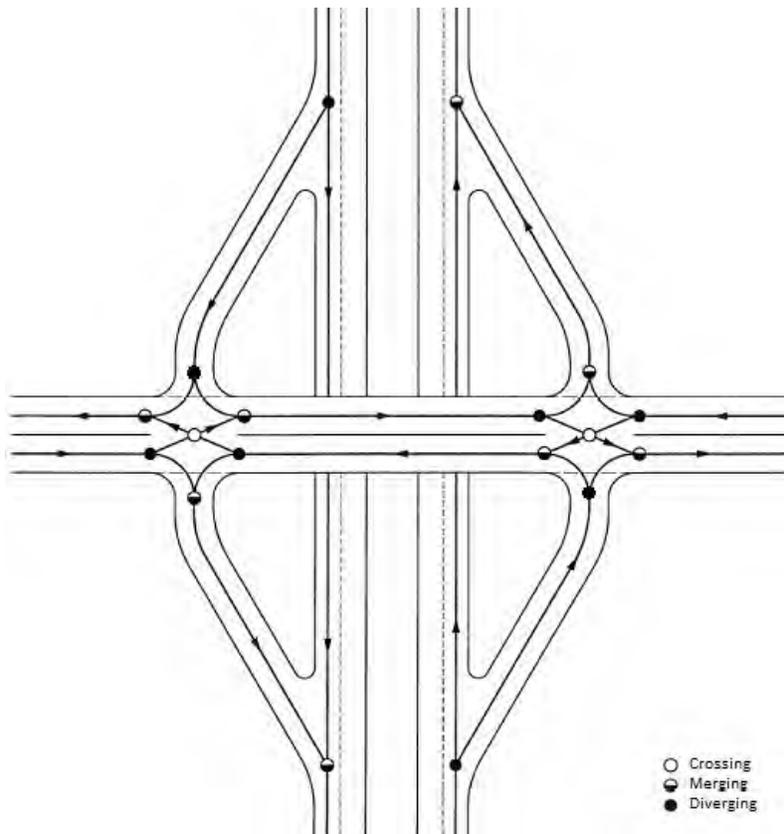


Figure 3 Points of Conflict on DDI

Project Justification:

The DDI incorporates geometry which has traffic calming features and reduces speeds while maintaining capacity. This should result in fewer crashes, less severe crashes, fewer red light running incidents and an increased operational capacity for the interchange. In addition, wrong-way movements to and from the ramps are virtually eliminated. The reduced clearance distance on the ramps decreases exposure time within the intersection thus improving safety further. The increase in capacity will serve the interstate ramps better and reduce crashes due to ramp queuing.

Another advantage is that the signal operation improves by using a two-phase signal that can use short cycle lengths. This can significantly reduce delays along the cross route and will increase the safety and capacity of the interchange by decreasing queuing on the cross route.

An interesting benefit of the layout of a DDI is that it provides an easy U-turn for a driver on the limited access highway to return to a missed exit. This added benefit can also aid with incident management for interchanges downstream or upstream and detours for nearby construction.

FHWA sponsored an accident analysis at a French DDI in Versailles and compared it to a similar location in the United States. The report found a significant decrease in accident rate and severity, a result to be expected given the lower speeds found at a DDI when compared to other interchange concepts.

Regionally, the Missouri Department of Transportation has conducted a safety review of a DDI involving the comparison of crash data pre-construction and post-construction. Crash data was evaluated for a five-year period before the improvements and one-year after improvements. Roadway segment crash rates were compared to determine any changes in the pre-construction and post-construction periods. Summary of results in charts and graphs were developed to investigate changes in the two time periods (pre-construction and post-construction). This comparison of crash data provides a good indicator on the safety of the DDI solution.

The following Table 2 displays the comparison between crashes within the interchange’s operational area for the 5-year pre-construction to 1-year post-construction.

Table 2 Crash Data Comparison (crashes/year)

Severity	1-Year Average Pre-Construction (average of 5-years data)	1-Year Post-Construction	Change in Crash Numbers
Disabling Injury	1	2	1
Minor Injury	14	1	(13)
Property Damage Only	38	22	(16)
Total	53	25	(28)
Crash Type			
Rear-end	21	16	(5)
Left Turn Right Angle	11	0	(11)
Left Turn	9	0	(9)
Others	12	9	(3)
Total	53	25	(28)

Note: A number in parenthesis () represents a reduction in the number of crashes per year

Red light running violations are also thought to be significantly fewer at a DDI when compared to a traditional diamond interchange. A simulation study was completed by the Federal Highway

Administration (FHWA) and shows that there are more chances to violate signals with the diamond interchange design because of geometric configuration. It also shows that the number of violations would be fewer with the DDI design. Table 3 shows the responses to the red signal as a function of interchange design.

Table 3 Response to Red Signal Indication

Response to Red Signal	DDI	Diamond
Compliant	234	322
Stopped Within 20 ft	29	25
Violated	2	7
Total	255	354

The speed reduction associated with the geometric design of the DDI suggests that if drivers make errors that result in crashes, the severity of those crashes is likely to be less than crashes in conventional diamond interchanges. This speed reduction, geometric design, and reduction in crossing conflict points combine to suggest that properly designed DDIs will prove to be considerably safer than properly designed conventional diamond interchanges. An FHWA sponsored analysis reported that a DDI in Versailles, France, which has been in operation for 25 years, had experienced only 11 minor injury crashes in the preceding 5 years, whereas the expected number of injury/fatal crashes of comparable diamond interchanges in the United States would be between 21 and 23.

The proposed study will allow completion of an evaluation of the DDI at the US Highway 6/Hickman Road interchange. The study would confirm whether a DDI is the proper solution to improving safety and capacity of the existing interchange, at less cost and with a shorter construction schedule.

EXHIBIT "C"

ESTIMATED COST

Interchange Operations Report	Task Cost
Task 1 Project Management, Administration, and Meetings	20,950
Task 2 Data Assembly	12,500
Task 3 Interchange Concept Design	26,100
Task 4 Refined Diverging Diamond Concept Development	12,300
Task 5 Traffic Analysis	20,100
Task 6 Operations Interchange Report	18,950
Total:	\$110,900

Source of funding: TSIP/TSF \$110,900

EXHIBIT "D"

PROPOSED PROJECT SCHEDULE

Task	Start Date	End Date
Notice to Proceed	01/22/13	
Task 1 Project Management, Administration, and Meetings	01/29/13	08/12/13
Task 2 Data Assembly	01/29/13	02/26/13
Task 3 Interchange Concept Design	02/12/13	03/19/13
Task 4 Refined Diverging Diamond Concept Development	03/21/13	04/25/13
Task 5 Traffic Analysis	02/12/13	04/25/13
Task 6 Operations Interchange Report	04/02/13	08/12/13
* Traffic Safety Funds Available July 1		



Existing Diamond Interchange



Study Concept Diverging Diamond Interchange

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Waterloo/ Traffic Safety Awareness Radio CampaignApplicant City of WaterlooContact Person Mohammad Elahi Title Traffic EngineerComplete Mailing Address 408 E. 6th StreetWaterloo, Iowa 50703Phone (319) 291-4440 E-Mail mohammad.elahi@waterloo-ia.org
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

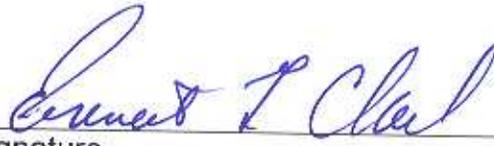
Total Project Cost \$ 20,000Safety Funds Requested \$ 20,000

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating local government(s). I understand the attached resolution(s) binds the participating local government(s) to assume responsibility if any additional funds are committed, and to ensure maintenance of any new or improved city streets or secondary roads.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the City of Waterloo

Signed:  8/22/12
Signature Date Signed

Ernest G. Clark
Typed Name

Attest:  8-22-12
Signature Date Signed

Suzy Scheres
Typed Name

Traffic Safety Funds proposal

Traffic Safety Awareness Campaign City of Waterloo, Iowa

B. NARRATIVE

Waterloo fatal crashes are predominantly single vehicle accidents at non-intersection location. Some fatal crashes are attributed to drug and alcohol. Weather and age does not appear to be significant factors. Major causes of these crashes could be due to DUI, distracted driving, or driving task not being taken seriously. It is almost impossible to fix the roads for these types of driver behavior. No matter how safe the roads are, distracted or careless drivers could hurt themselves and others. This proposal is for a broadcast radio distracted and impaired campaign, and for encouraging everyone to take driving seriously. Radio campaigns are relatively inexpensive to produce and broadcast. Radio reaches a wide audience.

Table 3 shows three years of fatal crash data in Waterloo. Two crashes happened at intersections and were multi-vehicle fatal crashes. Both involved alcohol and/or drugs. It appears driving under influence is still part of our driving culture. Overall, driving needs to be considered a more important and serious activity that it is considered now. One crash was due to a driver experiencing an imminent diabetic episode. The driver could have pulled over immediately and dialed 911 instead of calling a friend for help. A tragic car accident might have been averted with awareness.

The goal of the campaign is to reduce fatal crashes through increasing public awareness to take driving seriously, because our lives depend on it. Bicyclists and pedestrians will be included as more severe incidents involving them are being reported.

C. ESTIMATED COSTS

An estimated cost of \$20,000 for staging the campaign is requested.

Table 1: Estimated Costs

1	Agency fees for refining the design of the campaign and producing media material.	8,000
2	Buying media coverage	12,000
Total:		\$ 20,000

D. TIME SCHEDULE

Table 2: Time Schedule

ACTIVITY	YEAR												
	1	2	3	4	5	6	7	8	9	10	11	12	
START	◆												
AGENCY SELECTION	—												
PRODUCTION			—	—	—	—	—	—	—				
BROADCAST					—	—	—	—	—	—	—	—	
END													◆

Table 3: 2009, 2010, AND 2011 FATAL CRASHES IN WATERLOO

CASE NUMBER	CRASH DATE	CRASH TYPE	BLOOD ALCOHOL (POSSIBLE)	DRUGS	VEHICLE OR PASSENGER	INJURY	NOTE	DATE OF BIRTH	TIME	WEATHER	SURFACE
W11-004743	1/15/2011	WITH PEDESTRIAN			CAR PEDESTRIAN	FATAL	NOT VISIBLE	1994 1957	20:19	CLEAR	DRY
W11-016417	2/19/2011	INT: MULTI VEHICLE	0.074 METH		CAR	FATAL	RAN RED LIGHT	1973	1:52	CLEAR	DRY
			0.084 MARIJUANA		CAR	COVENANT HOSP		1982			
					SUV			1991			
					PASSENGER	COVENANT HOSP		1989			
W11-023069	3/10/2011	SINGLE VEH CRASH			TRACTOR	FATAL	LOST CONTROL	1987	12:13	PART CLOUD	DRY
W11-039800	4/24/2011	SINGLE VEH CRASH			CAR	FATAL	DIABETIC EPISODE	1960	12:43	PART CLOUD	DRY
W11-060199	6/19/2011	SINGLE VEH CRASH	0.172		PICKUP	FATAL		1989	3:00	CLOUDY	DRY
					PASSENGER	INJURED		1992			
					PASSENGER	INJURED		1991			
W11-060148	6/19/2011	SINGLE VEH CRASH			MOTORCYCLE	INCAPACITATING	SPEEDING	1987	0:22	FOG	DRY
					PASSENGER	FATAL		1992			
W11-100680	10/1/2011	SINGLE VEH CRASH			CAR	FATAL		1930	UNKNOWN	CLEAR	WIND
W10-005339	1/16/2010	SINGLE VEH CRASH			PICKUP	FATAL	LOST CONTROL	1961	16:40	PART CLOUD	WET
W10-090606	8/27/2010	SINGLE VEH CRASH			MOTORCYCLE	FATAL	LOST CONTROL	1990	11:23	CLEAR	DRY
W10-093734	9/3/2010	SINGLE VEH CRASH		POSITIVE	BICYCLE	FATAL		1980	22:50	CLEAR	DRY
W10-127687	12/5/2010	SINGLE VEH CRASH			CAR	FATAL		1992	3:26	CLEAR	SNOW
W09-075450	7/13/2009	SINGLE VEH CRASH	(ALCOHOL)		CAR	FATAL		1983	2:01	CLEAR	DRY
					PASSENGER	INJURED	OUT ON NIGHT OF DRINKING	1985			
W09-064009	6/14/2009	SINGLE VEH CRASH	0.23		CAR	FATAL 1984 02:01	CLEAR DRY				
				PASSENGER	INJURED 1988						
W09-109966	10/1/2009	INT: RIGHT ANGLE	0.17		CAR	POSSIBLE		1972	1:22	CLEAR	DRY
					CAR	FATAL		1991			
W09-087336	8/12/2009	NON-INTERSECTION			MOTORCYCLE	FATAL	REAR END	1949	15:34	CLEAR	DRY
					CAR		CAR STALLED	1994			
					PASSENGER	POSSIBLE		2003			
					PASSENGER	POSSIBLE		2004			

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Posted Bridge Public Awareness ProgramApplicant Ringgold CountyContact Person Zachary A Gunsolley Title County EngineerComplete Mailing Address 707 S Henderson Dr
Mt Ayr, IA 50854Phone (641) 464-3232 E-Mail ringgoldcoengr@iowatelecom.net
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 37,080Safety Funds Requested \$ 37,080

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

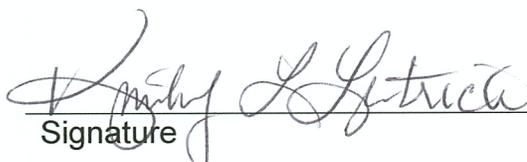
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I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the County of Ringgold

Signed:  7/26/12
Signature Date Signed

Kurt Shaha, Chairman
Typed Name

Attest:  7-26-12
Signature Date Signed

Kimberly Lutrick
Typed Name

B. NARRATIVE

There have been multiple instances reported of individuals crossing county posted bridges with vehicles that far exceed the posting on the bridge. The County is concerned that for each known violation, many more occur that are not reported. In one case, the county closed and removed the bridge, just to keep the violator from hurting themselves or someone else. Since about 1/3 of the county's bridges have postings, a public awareness campaign is necessary to educate the users of the county's bridges, and to restore the public's respect for the weight limit signs.

C. ITEMIZED COST

Media Outlet	Cost/Week	# of Weeks			Total
		2013	Winter 2013-14	Spring 2014	
Clearchannel Billboard	\$312.50	8	4	8	\$7,500.00
Diagonal Progress	\$550.00	8	4	8	\$13,200.00
Mount Ayr Record News	\$682.50	8	4	8	\$16,380.00
Total Grant Request					\$37,080.00

D. TIME SCHEDULE

Project will sunset at the end of fiscal year 2014

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

 Location / Title of Project Work Zone Safety Training

 Applicant Iowa DOT, Office of Traffic & Safety

 Contact Person Steven Schroder Title Traffic Safety Engineer

 Complete Mailing Address 800 Lincoln Way
Ames, IA 50010

 Phone 515-239-1623 E-Mail steven.schroder@dot.iowa.gov
 (Area Code)

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 _____ E-Mail _____
 (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

 Site Specific
 Traffic Control Device
 Safety Study

Funding Amount

 Total Project Cost \$ 115,000
Safety Funds Requested \$ 55,000

- A. Not applicable
- B. 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 2012), 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 day-long workshops at locations across Iowa to accommodate at least 900 participants
 - To have instruction tailored to city, county, contractor, utility, and Iowa DOT personnel
 - To retain consultant services for the primary trainer
 - To develop local personnel to assist in training
 - Partial funding of registration fees – this funding will help to keep the registration fee as low as possible for those attending the training
- C. The estimated cost of this project is \$55,000 for training in the winter of 2014.
- D. The anticipated time schedule for this project is for training for the winter of 2014.



Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Analysis: Iowa SPF-CMF Development

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

Phone (515) 239-1428 E-Mail Michael.Pawlovich@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type
Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 200,000

Safety Funds Requested \$ 200,000

Data Analysis: Crash Facts

- A. Not applicable.
- B. For the past decade, national safety analysis efforts have trended towards a more scientific approach. These efforts have centered around development of Safety Performance Functions (SPFs) and Crash Modification Factors (CMFs), culminating in the Highway Safety Manual (HSM) and the online Crash Modification Factor (CMF) Clearinghouse.

However, most of the currently developed SPFs and CMFs were based on data from particular states with different characteristics affecting roadway traffic crashes. These characteristics include design criteria and policies, driver tendencies, vehicle mix, weather, enforcement, and others. Therefore, the applicability of “nationally” developed SPFs and CMFs to the characteristics of Iowa is questionable.

The outcome of this project is the development of several Iowa-based SPFs and CMFs.

- C. Amount requested: \$200,000
- D. Time schedule: Within two years from contract start, anticipated to be initiated when funds are available.



Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Crash 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

Phone (515) 239-1428 E-Mail Michael.Pawlovich@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific

Traffic Control Device

Safety Study

Funding Amount

Total Project Cost \$ 15,000

Safety Funds Requested \$ 15,000

Crash Magic Software Statewide License Renewal

- A. Not applicable.
- B. Crash 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 Crash 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 had 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 and reducing the annual license fees accordingly.

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.

- C. Amount requested: \$15,000
- D. Time schedule: One year annual renewal fee invoiced by vendor within one year timeframe of availability, typically in December the year following fund approval.



Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Data Analysis: Crash Facts

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

Phone (515) 239-1428 E-Mail Michael.Pawlovich@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type
Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 40,000

Safety Funds Requested \$ 20,000

Data Analysis: Crash Facts

- A. Not applicable.
- B. For a couple decades, the Iowa DOT Office of Driver Services (ODS) has developed a Crash Facts booklet that was printed annually. These Crash Facts booklets were primarily used by ODS and Iowa DOT to respond to common queries quickly. More recently, ODS has updated its web presence and is in the process of converting the Crash Facts book to a web publication, initially focusing on replication of the past Crash Facts booklet. Nearing completion of that effort, ODS is now refocusing on the possibility of enhanced or extended Crash Facts as publication via the internet is less cumbersome.

Last year, funds were allocated for the purpose of this study is to support the development of presentation materials to support the web-based Crash Facts Manual available on the Iowa DOT ODS website. Output will be generated via internal DOT processes and these funds would support efforts to develop user-friendly templates containing presentation formats that could be utilized annually.

This year, funds are being requested to extend the past efforts to additional topic areas, namely engineering and enforcement concerns with results being made available via a more general safety web portal.

- C. Amount requested: \$20,000
- D. Time schedule: One year from contract start, anticipated to be initiated when funds are available.



Application for TRAFFIC SAFETY FUNDS

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

Phone (515) 239-1428 E-Mail Michael.Pawlovich@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type
Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 254,637.51

Safety Funds Requested \$ 40,000

Iowa Traffic Safety Data Service (ITSDS)

- A. Not applicable.
- B. 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. One major example of ITSDS-related activities is the Office of Traffic and Safety's web-based Profiles website (<http://www.iowadot.gov/crashanalysis/index.htm>).

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 CMAAT.

- C. Amount requested for contract with InTrans /CTRE to support ITSDS: \$40,000

(Supplementary funds typically are supplied via 408 NHTSA/GTSB funds in the amount of \$20,000 for Office of Traffic and Safety-related tasks and \$80,000 for GTSB-related activities.)

- D. Time schedule: Nominally starting when fund use is granted and ending one year after placing the funds under contract.

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Development of Iowa Road Safety Audit or Assessment Guidelines

Applicant Iowa DOT, Office of Traffic & Safety

Contact Person Steven Schroder Title Traffic Safety Engineer

Complete Mailing Address 800 Lincoln Way
Ames, IA 50010

Phone 515-239-1623 E-Mail steven.schroder@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

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

- A. Not applicable
- B. A RSA is not a traditional review of roadway data and safety. The application of RSAs, however, is relatively commonplace in Iowa and many other states. RSAs can be applied during any stage of in the development of a roadway (e.g., design, construction, and post-construction). FHWA guidelines for RSAs have existed for some time and individual states have also developed their own guidelines. This suggested project will involve the development of a RSA guideline for Iowa. These tasks would be guided by a technical advisory committee (TAC). Overall, five tasks area proposed:
 - 1. The national RSA guidelines and software will be reviewed and summarized
 - 2. Up to five states implementation guidelines and/or policies will be reviewed and summarized
 - 3. An outline for the Iowa guidelines will be developed
 - 4. A draft guideline will be written for review
 - 5. The guideline will be finalized
- C. The estimated cost of this project is \$30,000 (without guideline hard copy reproduction costs).
- D. The anticipated time schedule for this project is July 1, 2013 – June 30, 2014, or 12 months from NTP.

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Effectiveness of TEAP StudiesApplicant Iowa DOT, Office of Traffic & SafetyContact Person Steven Schroder Title Traffic Safety EngineerComplete Mailing Address 800 Lincoln Way
Ames, IA 50010Phone 515-239-1623 E-Mail steven.schroder@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 50,000Safety Funds Requested \$ 50,000

- A. Not applicable
- B. The Traffic Engineering Assistance Program (TEAP) has existed for nearly 30 years. Over this time, many studies have been completed for small towns around the state of Iowa.

TEAP provides traffic engineering expertise to local units of government. The purpose is to identify cost-effective traffic safety and operational improvements as well as potential funding sources to implement the recommendations.

In order to evaluate the effectiveness of the TEAP, it is necessary to know how many of these recommendations were followed. The impact to safety and operations of the recommendations must also be looked at.

This study will look at the recommendations from the TEAP studies over the years and how many of these recommendations were followed. If they recommendations were followed, the study will try to determine how effective they were. In cases where the recommendations were not followed, the study will try to determine why they were not followed.

This study will help us to make sure that the TEAP is beneficial to all communities for many years to come.

- C. The estimated cost of this project is \$50,000.
- D. The anticipated time schedule for this project is one year from when the contract is started.

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Safety Improvement Webinar ProjectApplicant Iowa DOT, Office of Traffic & SafetyContact Person Steven Schroder Title Traffic Safety EngineerComplete Mailing Address 800 Lincoln WayAmes, IA 50010Phone 515-239-1623 E-Mail steven.schroder@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 25,000Safety Funds Requested \$ 25,000

- A. Not applicable
- B. Roadway safety is benefited as more local decision-makers are made aware of, and then implement, the advantages and challenges related to potential safety improvements. The overall amount of information available that focuses on potential roadway safety improvements has increased exponentially in that last 10 years. Webinar technology can be used to share this information with those that have access to a computer and the internet. The project proposed here would develop the content for four one-hour webinars on potential safety improvements. The subjects would likely be selected by the technical advisory committee for the project. Alternatively, they could be coordinated with two other forthcoming projects that will focus on summarizing Iowa and international safety research. The webinar will be presented by project staff or slide notes provided to an alternative speaker if needed. Before any webinars are created a search will be completed to determine what is currently available. Alternative subjects will be selected if acceptable versions of webinars, etc. are already available for a reasonable cost. It is currently assumed that the ICN system would be used for these webinars, or an already existing and licensed provider for webinars that the Iowa DOT can access. It is expected that the subjects and webinars would be advertised and that the Iowa DOT District conference rooms could be used as gathering points for local agencies. The project team would advertise the webinars electronically through the Iowa DOT local systems listserv and registrations would be taken. There would be no charge for individuals to attend the webinar..
- C. The estimated cost of this project is \$25,000.
- D. The anticipated time schedule for this project is July 1, 2013 – June 30, 2014, or 12 months from NTP.

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Traffic and Safety Forum, Training and Peer ExchangeApplicant Mary StahlhutContact Person _____ Title SHSP Program ManagerComplete Mailing Address 800 LincolnwayAmes, Iowa 50010Phone 515 239 1169 E-Mail mary.stahlhut@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 25,000Safety Funds Requested \$ 25,000

The Office of Traffic and Safety provides several opportunities for transportation engineers and staff to receive best practices updates and technical workshops. This application is for sustaining these offerings:

- Traffic and Safety Forum \$15,000
- Fall Safety Classes \$ 3,000
- Midwest Peer Exchange \$ 2,500
- Engineering Workshop \$ 2,500
- Peer Travel \$ 2,000
- \$25,000

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Accident Analysis & Prevention Subscription

Applicant Mary Stahlhut and Michael Pawlovich

Contact Person Mary Stahlhut Title SHSP Program Manager

Complete Mailing Address 800 Lincolnway
Ames, Iowa 50010

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

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) Kathy McLear - Office of Driver Services

Contact Person Leighton Christianson Title Librarian

Complete Mailing Address 800 Lincolnway
Ames, Iowa 50010

Phone (515) 239-1200 E-Mail Leighton.Christiansen@dot.iowa.gov
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 8,000

Safety Funds Requested \$ 8,000

Accident Analysis & Prevention Subscription

Affiliated with the [Association for the Advancement of Automotive Medicine](#)

Accident Analysis & Prevention provides wide coverage of the general areas relating to accidental injury and damage, including the pre-injury and immediate post-injury phases. Published papers deal with medical, legal, economic, educational, behavioral, theoretical or empirical aspects of transportation accidents, as well as with accidents at other sites. Selected topics within the scope of the Journal may include: studies of human, environmental and vehicular factors influencing the occurrence, type and severity of accidents and injury; the design, implementation and evaluation of countermeasures; biomechanics of impact and human tolerance limits to injury; modelling and statistical analysis of accident data; policy, planning and decision-making in safety.

This resource is utilized by safety staff in several DOT divisions and is also shared with the state and local safety practitioners. The subscription is managed by the DOT librarian and access is available for copies of selected articles.

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Pavement Marking on Low Volume RoadsApplicant Iowa DOT, Office of Traffic & SafetyContact Person Jan Laaser-Webb Title EngineerComplete Mailing Address 800 Lincoln WayAmes, IA 50010Phone 515-239-1349 E-Mail jan.laaser-webb@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 25,000Safety Funds Requested \$ 25,000

A. Not applicable

B. **Narrative:** There are approximately 18,000 miles of paved roads on Iowa's rural secondary system and about 8,500 miles of these carry less than 400 vehicles per day. In addition, there are hundreds of miles of surface treatment roads, such as seal coats, that exist on the transportation system.

It has been common practice in most rural agencies to apply and maintain centerline and edge line pavement markings on these low volume rural roads. Increasing maintenance costs and stagnant budgets have prompted some local agencies to consider whether a continuation of providing pavement markings is cost-effective for low volume traffic needs.

This project is proposed as an investigation of the practices that are being followed within Iowa and a sample of surrounding states with respect to pavement marking on low volume roadways. A literature search and telephone survey would be completed. The project would examine the costs and benefits of pavement markings on low volume roads, compare practices in other states, consider possible legal implications for elimination of this practice, and develop a process for cessation of pavement marking on this limited mileage, if the action were found feasible.

Submitted by: Keith Knapp and Tom McDonald (This project idea is related to a larger study idea that was suggested and highly ranked at the 2012 County Engineers Research Focus Group. The larger study would develop guidance and criteria related to decision-making when determining surfacing type and changes to those surfaces. The idea proposed above focuses on what might become some of the pavement marking portion of that guideline if it was funded for completion in the future.)

C. **Estimated Cost:** \$25,000

D. **Time Schedule:** July 1, 2013 – June 30, 2014 (or 12 months from NTP)

Applicant

Jan Laaser-Webb
Iowa DOT, Office of Traffic & Safety

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Pilot Evaluation of Retro-Reflective Sheeting PerformanceApplicant Iowa DOT, Office of Traffic & SafetyContact Person Jan Laaser-Webb Title EngineerComplete Mailing Address 800 Lincoln WayAmes, IA 50010Phone 515-239-1349 E-Mail jan.laaser-webb@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 30,000Safety Funds Requested \$ 30,000

- A. Not applicable
- B. **Narrative:** Since the adoption of minimum retro-reflective standards in the MUTCD, Iowa's state and local agencies have begun to examine their options for a suitable assessment/management program. Proper retro-reflectivity is a basic safety characteristic of the proper communication between traffic control devices and drivers. Of special interest is the method based on a replacement cycle of sign sheeting life. Shheeting manufacturers generally provide a recommended sheeting life estimate. But recent samples of retro-reflective measurements of older warning signs by LTAP personnel have revealed retro-reflectivity levels well above the FHWA minimums on signs that have been in service much longer than the manufacturer's recommended time. A project that produces repeated and well-designed verification of this level of useful "sign life" could be used by all public agencies to more effectively apply their management methods of sign replacement. The results could greatly increase the length of sign replacement cycles and reduce costs connected to the signing.

Local Technical Assistance Program (LTAP) has been involved with retro-reflectivity training around the State of Iowa and routinely revisit areas. They are aware of several local agencies that have acquired retro-reflectometers and take readings on the signs in their inventory; those readings, along with other information on installation date, the direction the sign is facing, and sheeting type will provide an excellent data base from which approximate service life can be determined. It is proposed that these field readings be supplemented by additional data taken by LTAP personnel with its retro-reflectometer to provide a relevant and statistically significant sample size. The cost of piloting or initiating this project is reduced because it is hoped that it can be partially combined with some of the tasks currently completed by LTAP staff (e.g. visits for other purposes). This request for funding is for piloting or initiating the retro-reflectivity measurement and evaluation methodology. A sample of one year of data would be collected as part of this project. Should the preliminary results reveal a significant departure from the manufacturer's recommended life, the data could be expanded in a future study to develop not only a refined estimate of service life, but also establish deterioration rates for various sheeting types and directional placement.

Idea Submitted by: Bob Sperry, Tom McDonald and Keith Knapp (with Bob having talked to Carroll County and Lucas County about involvement).

- C. **Estimated Cost:** \$30,000 (A "Reliability Testing of Sign Shheeting Retro-Reflectivity" project has been selected by Iowa HRB for potential funding. The idea proposed above, useful on its own, could also be used to supplement the potential HRB project.)
- D. **Time Schedule:** July 1, 2013 - June 30, 2014 (or 12 months from NTP)

Applicant

Jan Laaser-Webb
Iowa DOT, Office of Traffic & Safety

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Measuring Highway Safety InvestmentsApplicant Iowa DOT, Office of Traffic & SafetyContact Person Jan Laaser-Webb Title EngineerComplete Mailing Address 800 Lincoln WayAmes, IA 50010Phone 515-239-1349 E-Mail jan.laaser-webb@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

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

A. Not applicable

B. Narrative:

MAP21 would authorize funding streams for state transportation systems based on a performance-based approach that would closely tie dollars to outcomes. The objective of this research is to develop methodology for measuring performance outcomes of highway safety management programs.

The results of this study can assist in demonstrating the value of highway safety investments and can be used for cost-effective safety planning and decision-making.

Idea Submitted by: Nadia Gkritza and Zach Hans

C. Estimated Cost: \$40,000 (A potential matching funds source is MATC FY12 grant funding. The Mid-American Transportation Center research program is the U.S. Department of Transportation Region 7 University Transportation Center designed to address safety and economic competitiveness, among other goals. MATC is a consortium of eight partner universities in Iowa, Nebraska, Missouri, and Kansas.)

D. Time Schedule: July 1, 2013 – June 30, 2014 (or 12 months from NTP)

Applicant

Jan Laaser-Webb
Iowa DOT, Office of Traffic & Safety

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Return on Investment in Data and Information Tools for Data-Driven Safety Programs

Applicant Iowa DOT, Office of Traffic & Safety

Contact Person Jan Laaser-Webb Title Engineer

Complete Mailing Address 800 Lincoln Way
Ames, IA 50010

Phone 515-239-1349 E-Mail jan.laaser-webb@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

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

A. Not applicable

B. Narrative:

The main objective of this research is to develop a cost-benefit methodology that the Iowa DOT can use to assess the potential impacts of investing in data and information tools. Little research is documented in the literature on quantifying the benefits of investing in data collection and information tools, in terms of economic returns on investment. Investment factors that will be considered include safety data and process associated costs (employee training, contractor support, system procurement, hardware procurement, and other), opportunity costs (return forgone by bypassing of other competing investment activities such as more tangible countermeasure implementation or roadway projects), and safety data and process associated benefits (gains in safety, costs and time saved in investment decisions). The gains in safety of investments in safety data, tools and processes will be assessed based on a literature review and published data, and other methods. The research team also will identify comparable cost-benefit models in transportation and other disciplines and explore the feasibility of applying these models to assess the potential impact of highway safety data investment.

The proposed research will address a critical research gap especially given the increasing reliance on data for decision-making. It will provide the Iowa DOT with a better understanding of the cost and benefits of investing in data collection and information tools. The results of this project can be used as a comparison to other competing investment priorities and can improve decision-making.

Idea Submitted by: Nadia Gkritza, Omar Smadi, and Zach Hans

- C. **Estimated Cost:** \$60,000 (A potential matching funds source is MATC FY12 grant funding. The Mid-American Transportation Center research program is the U.S. Department of Transportation Region 7 University Transportation Center designed to address safety and economic competitiveness, among other goals. MATC is a consortium of eight partner universities in Iowa, Nebraska, Missouri, and Kansas.)
- D. **Time Schedule:** July 1, 2013 - December 31, 2014 (or 12-18 months from NTP)

Applicant

Jan Laaser-Webb
Iowa DOT, Office of Traffic & Safety

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Centerline Rumbles Affect on Pavement JointsApplicant Iowa DOT, Office of Traffic & SafetyContact Person Jan Laaser-Webb Title EngineerComplete Mailing Address 800 Lincoln WayAmes, IA 50010Phone 515-239-1349 E-Mail jan.laaser-webb@dot.iowa.gov
(Area Code)

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 _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 50,000Safety Funds Requested \$ 50,000

A. Not applicable

B. Narrative:

The main objective of this research is to determine if centerline rumble stripes have a negative impact on the centerline pavement joint. Little is known regarding the short- and long-term affects a milled rumble stripe may have on a pavement joint it is installed along. Since increasing evidence shows that centerline rumbles alert distracted/drowsy drivers thereby preventing multiple vehicle cross centerline crashes, widespread use of centerline rumbles is being advocated by transportation safety professionals.

The proposed research will address a major concern expressed by pavement maintenance professionals. It will provide the Iowa DOT with a better understanding of the cost and benefits of investing in centerline rumble strips. The results of this project can be used as a comparison to other competing investment priorities and can improve decision-making.

C. Estimated Cost: \$50,000

D. Time Schedule: July 1, 2013 - June 30, 2014 (or 12 months from NTP)

Applicant

Jan Laaser-Webb
Iowa DOT, Office of Traffic & Safety

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Rural RoadsApplicant Mary StahlhutContact Person Mary Stahlhut Title SHSP Program ManagerComplete Mailing Address 800 Lincolnway
Ames, Iowa 50010Phone 515 239 1169 E-Mail mary.stahlhut@dot.iowa.gov
(Area Code)

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) Eileen Fisher, ICASHContact Person _____ Title Assoc DirectorComplete Mailing Address Iowa's Center for Agricultural Safety and Health
Ames, Iowa 50010Phone 319-335-4224 E-Mail eileen-fisher@uiowa.edu]
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PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 20,000Safety Funds Requested \$ 20,000

Rural Road Safety Public Service Announcement

Addressing crashes on local rural roads was a priority area in the Iowa Comprehensive Highway Safety Plan and the Local Roads Target Area Team. One of the strategies identified for implementation was increasing public awareness of rural roads driving conditions and risks.

The “Rural Roads Crashes – They’re preventable” video was jointly developed by Iowa's Center for Agricultural Safety and Health (I-CASH) and members of the local roads team. It was distributed in fall of 2011 to nearly 1,000 driver education instructors and other groups and stakeholders.

<http://www.iowadot.gov/mvd/ods/RuralRoadCrashes.html>

Additional footage of unsafe driving maneuvers and conditions around large equipment was captured on multiple cameras mounted in working farm equipment for a full season of agriculture-related work.

This application is for using this specific footage in an instructional PSA to be produced by a commercial marketing firm and related materials for rural equipment operators and the general public.

Budget \$20,000

