



STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
 LANSING

RICK SNYDER
 GOVERNOR

KIRK T. STEUDLE
 DIRECTOR

May 25, 2012

Mr. John D. Niemela, Director
 County Road Association of Michigan
 P.O. Box 12067
 Lansing, Michigan 48901-2067

Ms. Summer Minnick, Director
 Michigan Municipal League
 208 N. Capitol Avenue, 1st Floor
 Lansing, Michigan 48933-1288

Dear Mr. Niemela and Ms. Minnick:

Safe, Accountable, Flexible, Efficient Transportation Equity Act
 A Legacy for Users
Fiscal Years 2014 Federal High Risk Rural Roads Program

The Michigan Department of Transportation (MDOT) is pleased to announce that we are soliciting new candidate project applications for fiscal year (FY) 2014 High Risk Rural Road (HRRR) program. Federal funds for the HRRR program are derived from the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA-LU) Federal Highway Bill and the Congressional Continuing Resolutions since enacted. The FY 2014 budget for this program is estimated to be \$3,000,000 in federal funds for each fiscal year. This amount may be subject to revisions based on approval of the future federal highway bill. We are asking the County Road Association of Michigan and the Michigan Municipal League to distribute this notice to their member agencies.

MDOT will be programming projects for FY 2014 with the current call for projects; local agencies are allowed to submit more than one project for consideration. Agencies submitting multiple projects should submit a prioritized list for consideration. Selected HRRR projects are to be obligated in the fiscal year which the project is selected.

SAFETEA-LU defines a HRRR as; 1) any roadway functionally classified as rural major or minor collector or a rural local road that the accident rate for fatalities and incapacitating injuries exceeds the statewide average for those functional classes of roadway, or 2) any roadway functionally classified as rural major or minor collector or a rural local road that will likely have increases in traffic volumes that are likely to create an accident rate for fatalities and incapacitating injuries that exceeds the statewide average for those functional classes of roadway.

MDOT has used the following data to determine the required statewide average accident rate:

76,116	Total miles of roadway functionally classified as rural major or minor collector or rural local road.
9,646	Total number of crashes resulting in fatalities or incapacitating injuries, located on roadway classified as described above, for the time period 2007 – 2011.
0.13	Statewide average frequency of such accidents per mile of such roadway over a 5 year time period.

The FY 2014 project eligibility requirements for the HRRR program are:

1. The roadway is functionally classified as rural major or minor collector or rural local road.
2. Within the most recent five year time period of available crash data, at least one intersection crash, resulting in fatalities (K) or incapacitating (A) injuries has occurred; or one such serious crash has occurred within a 7.70 mile (1/0.13) long segment of such roadway. With the most recent five year period of time, all UD-10 forms having 'K' or 'A' injuries and any other UD-10 forms of lesser degree of severity, that support the scope of project work, shall be included with the project's application. Proposed projects with higher crash concentrations of 'K' and/or 'A' crashes may receive a higher priority than other projects.

Other program requirements:

1. Selected projects are to be obligated in the fiscal year which the project was selected. FY 2014 projects will need to be developed and obligated between October 1, 2013, and August 29, 2014. Please note that final plans, specifications, and estimate must be given to MDOT by these dates, as well as any required clearances such as right-of-way (ROW), permits, environmental, etc.
2. Federal funds shall not exceed \$400,000 per project.
3. The proposed projects must demonstrate a direct correlation to correct an area related to the fatal or incapacitating crashes. The proposed project limits must be relevant to the roadway features attributable to the crashes, and are subject to approval by MDOT. All traffic signal upgrade/installation projects shall include reflectorized backplates.
4. Projects must be designed in accordance with 3R, 4R, or the American Association of State Highway and Transportation Officials (AASHTO) Low Volume Local Roadway standards. Use of the Capital Preventative Maintenance guidelines and fixes will not be permitted.

Program administrative procedures for FY 2014:

1. The construction phase only is eligible for federal aid except as specified in Items 6 and 7. Federal funds shall not exceed \$400,000 per project. HRRR projects may also be capped at the lesser of the original estimate plus \$20,000 or the original estimate plus 20 percent. Projects may, at MDOT's discretion, be funded by a "Pro-Rata" or "Lump Sum" method. Please reference the MDOT Informational Memos http://www.michigan.gov/mdot/0,1607,7-151-9625_25885_27578--,00.html to review information on the "Pro-Rata" or "Lump Sum" funding methods. Right-of-way and construction engineering are not eligible for these funds. Design Engineering costs are also not eligible for these funds except as listed in Items 6 and 7 below. Projects are federally funded at 90 percent with a 10 percent local match, or funded with 100 percent federal funds for projects consisting entirely of traffic control signalization, pavement marking, rail-highway crossing closure, or installation of traffic signs, traffic lights, guardrails, impact attenuators, concrete barrier end treatments, breakaway utility poles, or priority control systems.
2. Projects may be let through MDOT or by local force account, as approved by our office. Force account work shall follow the Local Agency guidelines for "Construction by Non-Competitive Bid Contract" which can be viewed on the MDOT Local Agency website at

http://www.michigan.gov/mdot/0,1607,7-151-9625_25885_40414---,00.html along with any current revisions as listed in the MDOT Informational Memos page, at the web link listed in Item 1 above.

3. Eligible projects must meet current American's with Disabilities Act requirements, standards, and warrants. All improvements must address the probable cause of the crash(es) in the project area. The proposed project limits must also address concerns in the area of the crash. Proposed work outside the vicinity of the crashes will be reviewed to ensure the HRRR funds are spent according to the intent of SAFETEA-LU.
4. All project candidates should be postmarked no later than Friday, August 13, 2012. Projects postmarked after August 13, 2012, at MDOT's discretion, may or may not be reviewed for funding based on the strength of other submitted projects and the availability of funds.

Applications **must** include the following items listed below. Applications without these items will be considered incomplete and will not be considered for funding:

- a. A cover letter providing a brief overview discussion as to the proposed project, crash pattern that has been experienced, and how the proposed scope of work will remedy to the past accident history.
- b. MDOT Form 1627. This form can also be found on the MDOT Local Agency web site at <http://mdotwas1.mdot.state.mi.us/public/webforms/>.
- c. MDOT Time of Return (TOR) analysis. Only the MDOT TOR spreadsheet will be accepted. A copy of the data input page and results page must be included in the application submittal. MDOT will no longer accept any other individual MPO/local agency created TOR or Benefit Cost analysis. Guardrail oriented projects are the only projects that will not require a TOR analysis.
- d. Submit the supporting UD-10s for **all** crashes that are used to compile the TOR analysis/computation. Crash history within the most current five year period of available data (2007 – current availability) are the only crashes that can be used in analysis of the project. Only include those UD-10 accident reports that relate to the proposed scope of work. Projects will be scored lower for providing extraneous and irrelevant UD-10's that do not relate to the proposed scope of work.
- e. High level detail cost estimate or Michigan Engineers Resource Library (MERL) estimate.
- f. Map showing project location(s), project termini, and township/municipality information.

The following additional project information that may also be included in the project application to help support the proposed project is:

- a. Accident analysis to determine the proposed project's scope.
- b. Crash concentration maps in the proposed project's limits.

- c. Photos of existing project site conditions.
- d. Preliminary proposed plan view, cross-sections, and/or profiles.
- e. Ability to deliver a construction package for obligation within this fiscal year.
- f. Project coordination with other construction projects.
- g. Past history of delivering safety projects in the year the project was selected.
- h. Highway Safety Manual analysis.

Enclosed is a sheet listing MDOT accepted crash reduction factors for commonly submitted scopes of work. Also listed are acceptable reference sources for obtaining crash reduction factors for projects with scopes of work that are not provided. This enclosure is posted on the MDOT Local Agency web site, under the Safety/HRRR tab.

For TOR calculations, MDOT will be using the 2010 National Safety Council average economic costs for motor vehicle injuries. The following injuries will be counted separately: 'K', 'A' and 'B' type injuries, while 'C' and 'PDO' type injuries will be counted as a 'PDO' type injury. This information can be found at http://www.nsc.org/news_resources/injury_and_death_statistics/Pages/EstimatingtheCostsofUnintentionalInjuries.aspx. MDOT has an Excel spreadsheet available for calculating TORs. If you have any questions or would like to obtain a copy of MDOT's Excel spreadsheet for calculating TORs, please contact Jim D'Lamater at (517) 335-2224 or email at dlamaterj@michigan.gov.

- 5. A Federal Highway Administration website contains reports provided by the states in response to a federal requirement to describe at least five percent of the locations in each state currently exhibiting the most severe highway safety needs, in accordance with Sections 148(c)(1)(D) and 148(g)(3)(A) of Title 23, *United States Code*. This website (go to <http://safety.fhwa.dot.gov/hsip/fivepercent/> and then select "Michigan") currently has the 2006 - 2011 Transparency (5 Percent) Reports. In addition to funding the construction project in the areas listed on the 2006 - 2011 Transparency (5 Percent) Reports, MDOT will also consider funding preliminary engineering up to 10 percent of the estimated eligible construction costs to be participating costs (100 percent federal or 90 percent federal/10 percent local, corresponding with the applicable construction phase cost splits). **Projects that are on the 5 Percent Report must be clearly identified and the estimated preliminary engineering costs listed in the application if the agency desires to have the preliminary engineering costs funded.**
- 6. MDOT will consider funding 50 percent of the preliminary engineering costs for projects that have been reviewed and identified by the MDOT – Local Safety Initiative (LSI) program. The maximum amount of preliminary engineering that MDOT will consider as eligible as a participating cost shall not exceed 10 percent of the estimated eligible construction costs. **Eligible projects must be on the MDOT LSI written suggestion list and shall have a copy of this list included with the project application.**
- 7. Local agencies are allowed to utilize the Highway Safety Manual (HSM) to further support their projects. Use of the HSM is optional, but those projects that have an HSM analysis conducted

will receive additional scoring points. These points will vary, so projects that have a simple calculation done will receive a few extra points, while those projects that have a more in-depth analysis conducted, will receive more points

The HSM can also be used to support substantive (pro-active) safety projects, where currently little or no accident history has taken place.

Local agencies can either prepare hand calculations or use the appropriate HSM spreadsheet located at www.highwaysafetymanual.org. Local agencies are to utilize Crash Modification Factors (CMF) from the Crash Reduction Factors listed in the MDOT TOR spreadsheets. If an agency desires to utilize a different CMF, this will require MDOT approval. Agencies can utilize the CMF clearinghouse at www.cmfclearinghouse.com or utilize Michigan based studies. Please allow up to a week for MDOT to review the appropriateness of the proposed CMF.

Calibration factors for use as part of HSM analysis have been compiled by MDOT and can be found at the following web site: http://www.michigan.gov/mdot/0,4616,7-151-9615_11261---.00.html. For any questions an agency might have regarding the HSM Calibration factors, please contact Dean Kanitz, MDOT Traffic and Safety Unit, at 517-335-2855.

8. If there are any social, economic and environmental impacts within the project limits, all impacts must be mitigated before federal funds can be appropriated and obligated. Project applications which have significant negative responses from the public or controversial and/or may require an environmental assessment will not be considered until all outstanding issues have been resolved.
9. The local agency must be willing to submit a project evaluation form with benefit/cost analysis to show the effectiveness of the project after three years of accident data are available after project construction. MDOT Form #1626 can be utilized to complete this evaluation.

Once projects are selected, local agencies within Metropolitan Planning Organization (MPO) areas must coordinate with their MPO to ensure inclusion of their project in the area's Transportation Improvement Program. Those agencies that are part of a rural task force should notify their members that they are applying for these funds. Rural task force approval is not necessary. MDOT Local Agency Programs will supply a list of selected projects to the MDOT Planning group, but it is the local agency's responsibility to ensure these projects are included in the State Transportation Improvement Program. Each application is evaluated based on the criteria listed above on a project by project basis and funding availability.

Local agencies are to submit eligible projects and supporting information by **August 13, 2012**, to the following:

Mr. Jim D'Lamater, P.E., Safety Engineer
Development Services Division, Local Agency Programs Unit
425 W. Ottawa Street, P.O. Box 30050
Lansing, Michigan 48909-7550

Depending upon funding availability and project selection, announcements will be made as soon as possible with notifications and project programming instructions sent to each of the local agencies. Our goal is to maintain a fiscally constrained program while maximizing the use of available federal funds.

Mr. John D. Niemela
Ms. Summer Minnick
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If federal funding for this program is revoked, no other federal or state funds will be made available to support these projects; therefore, the selected projects will need to be funded by other means by the local agencies if they desire to continue with the delivery of the selected project.

If you have any questions, please feel free to contact Jim D'Lamater, P.E., at (517) 335-2224 or dlamaterj@michigan.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rudolph S. Cadena', written in a cursive style.

Rudolph S. Cadena, P.E.
Local Agency Programs

Enclosure

cc: Dave Morena, FHWA
Matt DeLong, MDOT
Pam Boyd, MDOT
Tracie Leix, MDOT
Jim D'Lamater, MDOT
MDOT Region Engineers
MDOT TSC Managers
Metropolitan Planning Organizations
Rural Task Forces
MDOT LAP Listserv Members

LOCAL AGENCY PROGRAMS SAFETY PROJECT SUBMITTAL FORM

Clear Form

FUNDING TEMPLATE:

FISCAL YEAR:

LOCAL AGENCY		LOCAL AGENCY CONTACT	
PHONE NO.	FAX NO.	EMAIL ADDRESS	
ALTERNATIVE CONTACT		PHONE NO.	FAX NO.
EMAIL ADDRESS		HOUSE DISTRICT	SENATE DISTRICT

PROPOSED PROJECT LOCATION, LIMITS AND PROJECT DESCRIPTION

PROPOSED COST	TIME OF RETURN (YEARS)	IMPROVEMENT CATEGORY (CHECK THE CATEGORY THAT APPLIES) <input type="checkbox"/> Intersection Improvements <input type="checkbox"/> Roadway and Structure Improvements <input type="checkbox"/> Roadside Improvements <input type="checkbox"/> Pedestrian and Bicycle Improvements <input type="checkbox"/> Other _____
BENEFIT TO COST RATIO	TOWNSHIP/CITY	
PLEASE LIST THE CRASH REDUCTION FACTORS USED:		
DOES A PROJECT IMPACT A SCHOOL OR OTHER SENSITIVE ORGANIZATION? PLEASE DESCRIBE:		

ROADWAY DATA

CROSS ROAD DATA (If an intersection improvement)

PRIMARY ROUTE NAME		ROUTE NAME	
ADT		ADT	
PERCENT COMMERCIAL	*NO. OF CRASHES	PERCENT COMMERCIAL	*NO. OF CRASHES
* NO. OF FATAL CRASHES	*NO. OF "A" TYPE CRASHES	*NO. OF FATAL CRASHES	*NO. OF "A" TYPE CRASHES
*PERIOD OF CRASH DATA	FUNCTIONAL CLASSIFICATION	*PERIOD OF CRASH DATA	FUNCTIONAL CLASSIFICATION

*Please attach Crash Summary and UD-10's to your project submittal with the most recent 5 years of available data.

EXPLANATION OF HOW THE PROPOSED IMPROVEMENT WILL IMPROVE SAFETY AND REDUCE CRASHES

HAS YOUR LOCAL AGENCY RECEIVED APPROVAL OF A SAFETY PROJECT OR HRRR PROJECT THROUGH MDOT'S LAP UNIT IN THE PAST 5 YEARS?

YES
 NO
 SAFETY PROJECT
 HRRR PROJECT

IF YES, HAVE ALL PROJECTS BEEN COMPLETED?

YES
 NO

IF NO, PLEASE EXPLAIN WHY

OTHER PROJECT CONSIDERATIONS

INTERSECTION CRASH REDUCTION FACTORS		
Proposed Improvement	% Reduction	Associated Crash Types
Signal Timing / Hardware Enhancements		
Add All-Red Clearance Interval - Add per ITE	15%	All Crash Types
Rural Box Span Signal - Upgrade from Stop Control	75%	Angle
	40%	All other Crashes
Urban Box Span Signal - Upgrade from Stop Control	65%	Angle
	20%	All other Crashes
Box Span Signal - Upgrade from Diagonal Span	10%	All Crashes
Left-Turn Signal Phase - Add	30%	Left-Turn
Signal Head Size - Increase to 12 "	10%	All Crash Types
Signal Optimization & Timing Updates	10%	All Crash Types
Yellow-Change Interval - Increase	10%	All Crash Types
Pedestrian / Bicycle Enhancements		
Bump Out / Curb Extension - Remove Parking / Install	30%	All Crashes
Bicycle Lanes - Install per standards	25%	Bicycle Crashes
Intersection Lighting - Install	30%	Pedestrian Fatal and A-Injuries
	20%	Other Crashes
Ped. Countdown Signals - Install w/o existing signal	30%	Pedestrian, Bicycle
Ped. Countdown Signals - Upgrade from existing signal	25%	Pedestrian, Bicycle
Sidewalk for Pedestrians - Construct	85%	Pedestrian Crashes
Intersection Geometric Enhancements		
Bump Out / Curb Extension - Remove Parking / Install	30%	All Crashes
Center Left-Turn Lane - Construct	80%	Rear-End, Left-Turn
	50%	Head-On Left-Turn
	20%	Head-On, Angle, Other
	15%	Non Left-Turn Rear-End
Intersection Improvements (Realignment, Sight-Distance Improvements, Radii Improvements, Etc.)	30%	Angle
	15%	Rear-End
	10%	Head-On, Sideswipe, Pedestrian, Bicycle, Left-Turn Related
Offset Left-Turn Lanes	10%	Head-On Crashes
Right-Turn Lane - Construct	65%	Rear-End Right-Turn
	20%	Non Right-Turn Rear-End, Sideswipe Same Direction
Roundabout - Refer to Roundabout TOR	76% K&A	Contact Jim D'Lamater (517) 335-2224 for Roundabout TOR form
	39% Minor Crh	
General Intersection Enhancements		
All-Way Stop Control Operation at Intersection - Provide	60%	All Crash Types
Flashing Traffic Signals - Install/Upgrade	20%	All Crash Types
Intersection Lighting - Install	30%	Pedestrian Fatal and A-Injuries
	20%	Other Crashes
Reflective Sheeting on Sign Posts (lollipops)	15%	All Crashes
Ground Mounted Flashing Beacons (Red)- Install**	30%	All Crashes On Install Approach
Ground Mounted Flashing Beacons(Amber) - Install**	20%	All Crashes On Install Approach
Signing and Pavement Markings - Improve/Upgrade	30%	Angle, Rear-End
	10%	Head-On, Pedestrian

* "Other" includes and other crash which might be mitigate by the addition of a center left-turn lane in the judgment of the crash analyst

** applies with overhead flashing beacon removal

REFERENCES:

The references listed below are the sources recognized by MDOT for obtaining crash reduction factors. If you have a situation that none of these sources can provide a crash reduction factor for, please contact Jim D'Lamater 517.335.2224.

- 1) MDOT Safety Programs Unit - Crash Reduction Factors (As recommended by K. Kunde. P.E.); October, 1986
- 2) Selection Process for Local High Safety Projects, - Transportation Research Record 847: 1982
- 3) UKTRP - 85-6, University of Kentucky; March, 1985
- 4) Desktop Reference for Crash Reduction Factor, Federal Highway Administration. 2007
- 5) NCHRP Report 617: Accident Modification Factors for Traffic Engineering and ITS Improvements, TRB 2008
- 6) Crash Modification Factor Clearinghouse, <http://www.cmfclearinghouse.org/index.cfm>, 2008

SEGMENT CRASH REDUCTION FACTORS		
Proposed Improvement	% Reduction	Associated Crash Types
Geometric Enhancements		
Center Left-Turn Lane - Construct	80%	Rear-End, Left-Turn
	50%	Head-On Left-Turn
	20%	Head-On, Angle, Other
	15%	Non Left-Turn Rear-End
Horizontal Curve Flattening	30%	Head-On, Fixed-Object, Overturn
Increase Lane Width - Per foot	10%	All Crash Types
Shoulders - Widen to Standard Width	5% per ft. **	All Crash Types
Superelevation Modification	20%	Head-On, Fixed-Object, Overturn
Vertical Curve Modification	20%	Head-On, Sideswipe
	10%	Fixed-Object, Overturn
Operational Enhancements		
Access Management - Improve	15%	Drive-way Related
Centerline Rumble Strips - Install	55%	Sideswipe Opposite, Head-On, Run-Off the Road Left Crashes
Lighting - Install on segment	20%	Night Crashes
Pavement Surface - Improve	20%	Wet Crashes
Pedestrian Refuge - Install	50%	Pedestrian Crashes
Recessed Pavement Markings	0%	
Road Diet (4-3 Lane Conversion) - Install	50%	Suburban - All Crash Types
	25%	Urban - Angle Crashes
	30%	Urban - Rear End Crashes
Shoulder Rumble Strips	20%	Run-Off the Road Right Crashes
Signing/Delineation on Horizontal Curves - Install	20%	Head-On, Sideswipe, Fixed-Object, Overturn
Roadside Enhancements		
Fixed Objects From Clearzone (Trees, Culverts, Etc.) - Remove	75%	Fixed-Object
Guardrail - Install	55%	Fatalities and "A" Injuries
Sidewalk for Pedestrians - Construct	85%	Pedestrian Crashes
Slope Flattening	15%	Fixed-Object, Overturn

* "Other" includes and other crash which might be mitigate by the addition of a center left-turn lane in the judgment of the crash analyst

** 5% per foot widened each side (i.e. 3 foot shoulder on each side = 15% reduction)

REFERENCES:

The references listed below are the sources recognized by MDOT for obtaining crash reduction factors. If you have a situation that none of these sources can provide a crash reduction factor for, please contact Jim D'Lamater 517.335.2224.

- 1) MDOT Safety Programs Unit - Crash Reduction Factors (As recommended by K. Kunde. P.E.); October, 1986
- 2) *Selection Process for Local High Safety Projects*, - Transportation Research Record 847: 1982
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- 5) NCHRP Report 617: *Accident Modification Factors for Traffic Engineering and ITS Improvements*, TRB 2008
- 6) Crash Modification Factor Clearinghouse, <http://www.cmfclearinghouse.org/index.cfm>, 2008