

CHECKLIST TO DESIGNATE AREAS OF EVALUATION FOR REQUESTS FOR PROPOSAL (RFP)

Research Administration Use Only

	REQUISITION NUMBER 1958	DUE DATE 4/4/2016	TIME DUE Noon est
MDOT PROJECT MANAGER Justin Schenkel	JOB NUMBER (JN)		CONTROL SECTION (CS)
DESCRIPTION Updated Analysis of Michigan Traffic Inputs for Pavement ME Design			
Check all items to be included in RFP		Provide only checked items below in proposal	
Check the appropriate Tier in the box below			
<input type="checkbox"/> TIER I (\$50,000-\$150,999)	<input checked="" type="checkbox"/> TIER II (\$150,000-\$1,000,000)	<input type="checkbox"/> TIER III (>\$1,000,000)	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Understanding of Service
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Past Performance
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Qualifications of Team
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Quality Assurance/Quality Control
<input type="checkbox"/>	MDOT will provide Michigan Permanent Traffic Recorder data. As needed, MDOT can provide example	<input type="checkbox"/>	Location: The percentage of work performed in Michigan will be used for all selections unless the project is for on-site inspection or survey activities, then location should be scored using the distance from the consultant office to the on-site inspection or survey activity.
N/A	N/A	<input type="checkbox"/>	Presentation
N/A	N/A	<input type="checkbox"/>	Technical Proposal (if Presentation is required)

The prime consultant can be a private or public university or business. The prime consultant/vendor is responsible for the successful completion of the service and is expected to perform at least 40 percent of the services, by dollar value. The basis of payment is actual costs for universities and loaded hourly rate consultants as defined in standard MDOT contracts.

To submit a proposal, please follow the [MDOT Consultant Vendor Selection Guidelines for Research Administration-Revised September 2015](#).

RFP SPECIFIC INFORMATION

Problem Title: Updated Analysis of Michigan Traffic Inputs for Pavement ME Design

OR Number: OR15-154

This is Best Value Selection which means the budget amount submitted with the proposal is a component of the proposal score, not the determining factor of the selection.

PROPOSAL SUBMITTAL INFORMATION

PROPOSAL AND BID SHEET EMAIL ADDRESS –

mdot-rfp-response@michigan.gov with a CC to
mdot-research@michigan.gov

GENERAL INFORMATION

Any questions relative to the Research Problem Statement must be submitted by e-mail to:

mdot-research@michigan.gov. Questions must be received by 4 business days prior to the RFP due date at 5:00 p.m. EST. All questions and answers will be placed on the MDOT RFP Web site as soon as possible after receipt of the questions and at least three (3) days prior to the due date listed above. The names of organizations submitting questions will not be disclosed.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

MDOT AND RESEARCH FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION:

5100D- Request for Proposal Cover Sheet

Schedule of Research Activities Form- Appendix B

Deliverables Table- Appendix A

5100J- Consultant Data and Presignature sheet is required for signatory on this proposal

Research Proposal Budget Form Worksheet Appendix C (Universities)

Or

Budget Exhibits required in [Priced Proposal Guidelines](#) (Consultants)

MANDATORY ELECTRONIC SUBMITTAL

Proposals submitted for this project must be submitted electronically.

The following are Requirements for Electronic Submittals:

- Proposals must be prepared using the most current Research guidelines found at the top of the page- [MDOT – Research Proposal Guidelines](#).
- The proposal must be bookmarked to clearly identify the proposal sections (See Below)
- For any section not required per the RFP, the bookmark must be edited to include “N/A” after the bookmark title.
- Proposals must be assembled and saved as a single PDF file
- PDF file must be 5 megabytes or smaller
- PDF file must be submitted via e-mail to MDOT-RFP-Response@michigan.gov with a cc to mdot-research@michigan.gov
- MDOT’s requisition number and company name must be included in the subject line of the e-mail. The PDF shall be named using the following format:
 - **Requisition#XXX_Company Name.PDF**
- MDOT will not accept multiple submittals
- Proposals must be *received* by MDOT on or before the due date and time specified in each RFP

If the submittals do not comply with the requirements, they may be determined unresponsive.

The Proposer will receive an e-mail reply/notification from MDOT when the proposal is received. Please retain a copy of this e-mail as proof that the proposal was received on time. Proposers are responsible for ensuring the MDOT receives the proposal on time.

****Contact Contract Services Division immediately at 517-373-4680 if you do not get an auto response****

Required Bookmarking Format for RESEARCH ADMINISTRATION PROPOSALS ONLY:

1. Request for Proposal Cover Sheet Form 5100D
 - A. Consultant Data and Signature Sheet, Form 5100J (if applicable)
2. Understanding of Service
3. Qualifications of Team
4. Past Performance
5. Quality Assurance / Quality Control Plan
6. Location
7. Pricing Documents/Bid Sheet (if applicable)
8. Appendices

Michigan Department of Transportation

SCOPE OF SERVICE FOR RESEARCH SERVICES

TITLE: Updated Analysis of Michigan Traffic Inputs for Pavement Mechanistic Empirical Design
OR#: 15-154

LOCATION: Statewide

WORK DESCRIPTION: Research on Updated Analysis of Michigan Traffic Inputs for Pavement Mechanistic Empirical Design

ANTICIPATED START DATE: October 1, 2016

ANTICIPATED COMPLETION DATE: March 31, 2018

MDOT RESEARCH PROJECT ADMINISTRATION MANAGER:

Justin Schenkel
8885 Ricks Road
Lansing, Michigan 48917
E-MAIL: mdot-research@michigan.gov

GENERAL INFORMATION:

1. PROBLEM TO ADDRESS

In 2009, a research project, “Characterization of Truck Traffic in Michigan for the New Mechanistic Empirical Pavement Design Guide,” was completed that analyzed permanent traffic recorder data in Michigan in order to prepare inputs for the mechanistic-empirical (ME) pavement design method. This project resulted in the availability of statewide averages and cluster averages for the major traffic inputs. However, this was based on traffic data from 2005 and 2006. Since then additional sites have been added and some sites have been moved or downgraded. The analysis should be re-evaluated and recreated with the latest traffic data, including all the current permanent traffic recorder locations, and attempt to create a methodology that allows MDOT to create clusters and evaluations of future traffic data so that new research projects will become less frequent. This will very likely impact the existing traffic cluster methodology and characteristics of those clusters.

Accordingly, this may impact the PrepME software as developed per the Transportation Pooled-Fund Study: TPF-5(242), "Traffic and Data Preparation for AASHTO Pavement-ME Analysis and Design." This software is capable of pre-processing, importing, checking the quality of raw Weigh-In-Motion (WIM) traffic data, and generating three levels of traffic data inputs with built-in clustering analysis methods for Pavement ME Design. One of those built-in traffic clustering types is the MI cluster method from the 2009 research project. If the cluster method is impacted by this research project, then impacts to the PrepME software will also need to be identified.

2. RESEARCH OBJECTIVES

1. Evaluation of other current traffic clustering methodologies. Re-evaluate the original research cluster analysis and final recommendations, including the original clusters and the methodology to obtain them. Based on these evaluations, determine if the 2009 cluster methodology is still appropriate, requires revision, or requires a new methodology.
2. If revising the 2009 cluster methodology or creating a new cluster methodology, it should provide a way for MDOT to update traffic clusters in the future, in order to lessen the need for future research and reduce demand for MDOT resources.
3. Establish new and/or updated traffic clusters, descriptions, equations, and associated inputs, as necessary.
4. Review of PrepME operation and Michigan cluster output. Identification of possible errors or changes required for PrepME as a result of this research.

3. URGENCY AND IMPLEMENTATION BENEFIT TO MDOT

Adoption of updated Michigan traffic clusters to be used in ME pavement design, (as necessary). Adoption of procedure or methodology to continually update clusters in the future. Recommended updates to the PrepME software to be implemented by MDOT or sent on to those responsible for updating the Michigan Cluster programming of PrepME. Validation or determination of sensitive traffic inputs to direct MDOT resources for data collection and/or analysis. Recommended procedures for future traffic data collection potentially adopted by MDOT.

Improved confidence and accuracy of pavement designs to meet their intended design life, thereby providing more efficient use of transportation investment. Reduce future research need and associated costs using procedure/method for continual update of Michigan traffic clusters. Beneficiaries will be the travelling public and pavement design staff.

4. RISKS OR OBSTACLES TO RESEARCH

Availability of PrepME code or other unique PrepME information may be difficult to acquire because this is held by an outside source and is not internal to MDOT. Determination that there are several changes necessary to the original clustering, PrepME, and/or other recommendations which require extensive accounting and documentation.

5. DESIRED QUALIFICATIONS IN AN INVESTIGATOR(S)

Considerable experience in AASHTOWare Pavement ME Design software and its function. Pavement design experience, especially with ME Pavement Design Guide (MEPDG). Experience with MEPDG based research. Familiarity with the MDOT MEPDG implementation effort and previous related research. Experience with Permanent Traffic Recorders, their data, and analysis of that data.

Undergraduate degree in Statistics and working experience in statistical analyses.

CONSULTANT RESPONSIBILITIES:

1. Literature Search, including a review of other state-of-the-art practice traffic clustering methods in use.
2. Review and provide MDOT with recommendations on modifications to the 2009 research project, “Characterization of Truck Traffic in Michigan for the new Mechanistic Empirical Pavement Design Guide” results. The following should be addressed:
 - Are the determined significant AASHTOWare Pavement ME Design traffic inputs still appropriate/valid?
 - Is the cluster methodology still appropriate for MDOT use?
 - Are the clusters and their associated ME input values still appropriate and valid for MDOT use?
 - Are the 2009 recommendations (as shown in the conclusion) still applicable for MDOT use?
3. This task will only proceed with Research Advisory Panel approval. If the 2009 cluster methodology is no longer appropriate for MDOT use as determined in Task #2, develop a new cluster selection methodology/procedure to update the traffic clusters. It is preferred that this method/procedure be applicable for future cluster updates and is reproducible. It should be clearly explained so that MDOT is able to perform cluster methodology updates and/or traffic cluster generation (see Task #4) independent of future research. Include this task as a separate item in bid tabulation. The contract total will be adjusted accordingly.
4. Whether or not Task #3 is necessary and a new cluster methodology is created, generate new traffic clusters (per the methodology determined appropriate) which will provide common inputs for those roadways without an appropriate PTR site. Provide cluster descriptions, equations, and their input values for AASHTOWare Pavement ME Design. How clusters are generated should be clearly explained so that MDOT can generate new traffic clusters independent of future research.
5. Per the results of Tasks #2 and #4, determine significant AASHTOWare Pavement ME Design traffic inputs that require clusters.
6. Evaluate the PrepME Michigan cluster operation. Determine if the software is currently applying the cluster methodology and correctly providing outputs as described in the 2009 research project. Determine if updates to PrepME are necessary due to any of the previous task findings and if so,

explicitly explain the necessary corrections and/or provide the coding (if PrepME code is provided) necessary to make the changes.

7. Provide recommendations for data collection (such as additional PTR sites) and/or needs for updating future traffic inputs (including recommendation for future research needs).

8. Final reporting and training (technology transfer).

Failure of any of the above will be found in noncompliance with the contract.

DELIVERABLES:

As determined, recommend maintaining existing or create new Michigan Traffic Clusters and provide their associated AASHTOWare Pavement ME Design software inputs. Methodology or procedure to update clusters in the future. As determined, recommended updates to the PrepME software. Provide this recommendation within the final report as written or external coding (if PrepME code is provided). Quarterly meetings and reports for the RAP. Final report including all analyses, supporting information, and final recommendations (including significant inputs and future MDOT data collection/needs). If necessary, provide short training session on cluster methodology procedure and/or PrepME updates

MDOT RESPONSIBILITIES:

MDOT will provide Michigan Permanent Traffic Recorder data. As needed, MDOT can provide example AASHTOWare Pavement ME Design projects and/or inputs. AASHTOWare Pavement ME Design will not be provided. The PrepME software will be provided. As needed, MDOT will pursue information related to this software, (including its code).

COORDINATION PROCEDURES

Work will be completed in compliance with the Research Implementation Manual

CONSULTANT PAYMENT

All billings for services must be directed to the Department and follow the current Research Implementation Manual. This document contains instructions and forms that must be followed and used for billing. Payment may be delayed or decreased if the instructions are not followed.

Payment to the Consultant for services rendered shall not exceed the maximum amount unless an increase is approved in accordance with the contract with the Consultant.

Direct expenses, if applicable, will not be paid in excess of that allowed by the Department for its own employees in accordance with the State of Michigan's Standardized Travel Regulations. Supporting

documentation must be submitted with the billing for all eligible expenses on the project in accordance with the Reimbursement Guidelines. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the activities of this project.

The use of overtime hours is not acceptable unless prior written approval is granted by the MDOT project manager. Reimbursement for overtime hours that are allowed will be limited to time spent on this project in excess of forty hours per person per week. Any variations to this rule should be included in the priced proposal submitted by the Consultant and must have prior written approval by the MDOT project manager.

The basis of payment is Actual Costs for Universities and Loaded Hourly Rate for Consultants as defined in standard MDOT contracts.

PROPOSAL INFORMATION AND SCORING

Formal proposals are required and shall include the information as outlined in these Guidelines. This section is the information required in the proposal that will be used to score the qualifications of each consultant's proposal. The section numbering correlates to the score sheet. Therefore, the consultant should format their proposals consistent with the outline provided.

1. UNDERSTANDING OF SERVICE: 40 POINTS

Describe understanding of the service intended to be proposed. This information is to be based on the scope of services.

Problem Statement and Background Summary- demonstrates good understanding of problem, looks objectively at problem, specifies problem limits and restricts scope appropriately, and cites relevant literature.

Research Plan- cites specific objectives clearly, technical approach responds to all written and implied requirements, difficult areas are identified and details to overcome are given, represents novel idea or technical approach, plan is feasible, and effort is consistent with scope of problem.

Products and Implementation- proposal clearly defines products to be delivered at completion, includes practical, realistic implementation plan.

MDOT Involvement- MDOT involvement is not excessive and is clearly defined and quantified.

2. QUALIFICATIONS OF TEAM: 30 POINTS –

Describe the structure of the project team including the roles of all key personnel and subcontractors. For each subcontractor describe role in service and include what percent of the task that the subcontractor is expected to provide. Provide résumés for each of the key staff of the prime and subcontractor.

Facilities- proposer has adequate access to equipment and/or laboratory required in study.

Staffing- personnel availability is clearly defined, shows a depth of qualified personnel, proposer has ability to manage a project of this size an sufficient resources to complete study, qualifications are directly related to the requirements of the project, plans for specific key personnel assignment included, and there is a reasonable balance between subcontractor and prime contractor.

Statistical Qualification- The required knowledge level for a research team in statistical analyses, if defined, will be in the RFP under the heading DESIRED QUALIFICATIONS IN AN INVESTIGATOR(S).

Proposals not documenting statistical training and experience levels required in the RFP may be classified as non-responsive.

3. RELEVANT PAST PERFORMANCE: 30 POINTS

The project manager will contact references and review relevant performance evaluations from the past 5 years.

Record of past accomplishment- proposer satisfactorily completed past projects, was cooperative and flexible, and ended past projects according to the original budget and time schedule.

4. QUALITY ASSURANCE/QUALITY CONTROL (QAQC) PLAN: 5 POINTS

The proposer provided an outline of a QA/QC process. The QA/QC Manager is experienced with MDOT standards and practices.

5. LOCATION: 5 POINTS

The percentage of work hours performed in Michigan will be used for all selections unless the project is for on-site inspection or survey activity. The combination of location and percentage of work performed in Michigan should not exceed 5 points.

Percentage of Work
To Be Done in Michigan
Score

95% to 100%	5
80% to 94%	4
50% to 79%	3
25% to 49%	2
10% to 24%	1
Less than 10%	0

6. PRICE: 40 POINTS

Cost score is based on the lowest cost proposed divided by the current proposer cost multiplied by 40. Lowest bid shall receive 40 points.

TOTAL POINTS: 150

Research Proposal Budget Form Worksheet

Project Title _____
 Research Organization _____
 Date _____

									FY1	FY2	FY3	FY4	TOTAL	
SALARIES & WAGES -- MUST COMPLY WITH OMB CIRCULAR A-21														
Specify number of hours to be worked and hourly rate for each individual below: Examples of role of individual are Principal Investigator, Technician, Grad Student, etc. Annual wage increases must not exceed 2%														
(role of individual)														
Name of individual														
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
rate & hrs									\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
(role of individual)														
Name of individual														
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
rate & hrs									\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
(role of individual)														
Name of individual														
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
rate & hrs									\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
(role of individual)														
Name of individual														
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
rate & hrs									\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
(role of individual)														
Name of individual														
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
rate & hrs									\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
(role of individual)														
Name of individual														
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
rate & hrs									\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
(role of individual)														
Name of individual														
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
rate & hrs									\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Sub-Total Salary & Wages									\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	

FRINGE BENEFITS -- MUST COMPLY WITH OMB CIRCULAR A-21

Indicate Employee, appropriate negotiated rate for each and description of who the rate applies to.
 (e.g. - Sam Smith, 25%, Summer Faculty. The rate is negotiated between the university and it's cognizant agency

Name									
(Rate Description)									
(% rate)	FY1	FY2	FY3	FY4	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Name									
(Rate Description)									
(% rate)	FY1	FY2	FY3	FY4	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Name									
(Rate Description)									
(% rate)	FY1	FY2	FY3	FY4	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Name									
(Rate Description)									
(% rate)	FY1	FY2	FY3	FY4	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Name									
(Rate Description)									
(% rate)	FY1	FY2	FY3	FY4	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Name									
(Rate Description)									
(% rate)	FY1	FY2	FY3	FY4	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Name									
(Rate Description)									
(% rate)	FY1	FY2	FY3	FY4	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Sub-Total Fringe Benefits					\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

SUBCONTRACTOR -- MUST COMPLY WITH OMB CIRCULAR A-21

A copy of the subcontractor's budget must be attached. An MDOT approved subcontract is required for subcontractor costs in excess of \$25,000 prior to payment of invoices that contain subcontractor work. List all subcontractors on a separate line.

Subcontractor Name & Amt.									\$0.00
Subcontractor Name & Amt.									\$0.00
Sub-Total Subcontractor					\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

TRAVEL -- MUST COMPLY WITH OMB CIRCULAR A-21

Must be in accordance with IDS contract requirements.

In-State Travel (Destinations within Michigan)

Provide a separate table itemizing costs.

									\$0.00
--	--	--	--	--	--	--	--	--	--------

Out-of-State Travel (Prior approval required)

Provide a separate table itemizing costs.

									\$0.00
--	--	--	--	--	--	--	--	--	--------

Sub-Total Travel					\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
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SUPPLIES -- MUST COMPLY WITH OMB CIRCULAR A-21 (Few items not allowed are: computers, printers, monitors, fax machines, printer paper, toner cartridges, pens, pencils, legal pads, clips, rubber bands, post-it notes, books, notebooks, binders, folders, diskettes, postage stamps, chairs, office furniture, calendars, paper punches, business cards, staplers, waste cans, etc.)

Provide details if cost exceeds \$2,000. Individual line items in excess of \$1,000 require a detailed explanation regardless of total cost

(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
Sub-Total Supplies		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

CAPITAL EQUIPMENT -- MUST COMPLY WITH OMB CIRCULAR A-21 - Purchased specifically for this project

List items with a value in excess of \$500. Equipment in excess of \$5,000 requires prior approval.

(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
Sub-Total Equipment		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

OTHER EXPENSES -- MUST COMPLY WITH OMB CIRCULAR A-21 (Few items not allowed are: memberships in professional & scientific organizations, local telephone lines, cell phones, etc.)

Any project expense which does not fall into another category. Provide detailed explanation of the expense and applicable breakdown of costs (e.g. graduate student tuition).

(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
(Description)						\$0.00
Sub-Total Other Expenses		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Total Sub-Totals \$0.00 \$0.00 \$0.00 \$0.00 \$0.00

INDIRECT COSTS -- MUST COMPLY WITH OMB CIRCULAR A-21

Indirect cost rates are negotiated between the university and it's cognizant agency. Indicate the type of negotiated indirect rate used and the percentage (e.g. On Campus Research, 52%)

(Type)	(%)								
		FY1	FY2	FY3	FY4				
Enter \$ Amt per FY						\$0.00	\$0.00	\$0.00	\$0.00
Total Indirect Costs						\$0.00	\$0.00	\$0.00	\$0.00

TOTAL PROJECT COSTS \$0.00 \$0.00 \$0.00 \$0.00 \$0.00

UNIVERSITY MATCHING FUNDS \$0.00

TOTAL MDOT PROJECT COSTS \$0.00 \$0.00 \$0.00 \$0.00 \$0.00