

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

Research Administration Use Only

	REQUISITION NUMBER 1950	DUE DATE 4/4/2016	TIME DUE Noon est
MDOT PROJECT MANAGER Peter Jansson	JOB NUMBER (JN)		CONTROL SECTION (CS)
DESCRIPTION Bridge Structural Analyses for Staged Construction and Constructability Reviews			
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-\$149,999)	<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"/>	<input checked="" type="checkbox"/>	<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 must be a Michigan university. 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 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: Bridge Structural Analyses for Staged Construction and Constructability Reviews

OR Number: OR15-181

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

Bid Sheet and 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: Bridge Structural Analyses for Staged Construction and Constructability Reviews
OR#: 15-181

LOCATION: Statewide

WORK DESCRIPTION: Research on Bridge Structural Analyses for Staged Construction and Constructability Reviews

ANTICIPATED START DATE: October 1, 2016

ANTICIPATED COMPLETION DATE: June 30, 2018

MDOT RESEARCH PROJECT ADMINISTRATION MANAGER:

Peter Jansson
6333 Lansing Road
Lansing, Michigan 48917
E-MAIL: mdot-research@michigan.gov

GENERAL INFORMATION:

1. PROBLEM TO ADDRESS

Typical highway bridge design requires accounting of stresses in structural elements at the strength or service limit states, which assume the elements are fully constructed per project specifications. There is often a need to analyze structural elements during the various stages of construction for loadings or stresses that are not present in the finished, in service structure. Staged or part width construction can present many challenges that create stresses on the structure that need to be quantified, such as differential deflections, diaphragm connections, beam capacity and out of plane bending due to wet concrete deck load, overhang check for rotation or bracing needs, etc. Bridge removal sequences, shoring, and temporary supports can also impact project costs, timelines, and durability if not properly accounted for. To provide continued support to field offices, Bridge Field Services would like calculation templates developed to address common constructability analyses, review stresses, and verify design assumptions at each stage of bridge construction to prevent overloading of structural elements during construction. Structural elements considered for analysis include: Girders, decks,

diaphragms, cross frames, stiffeners, bearings, and any other elements that transmit construction loading.

2. RESEARCH OBJECTIVES

1. Identify the most important construction issues/cases to be addressed.
2. Identify key components of constructability reviews for MDOT bridge projects.
3. Provide analysis templates.
4. Provide manuals and guides with examples.
5. Provide implementation recommendations.

3. URGENCY AND IMPLEMENTATION BENEFIT TO MDOT

Deliverables will be distributed to MDOT personnel and accompanied by a training workshop. Bridge Field Services will benefit by being able to conduct comprehensive constructability reviews before construction and respond quickly to common construction issues utilizing structural analysis verifying element stresses. Design staff will benefit by having a systematic approach to analyzing structural elements during the various stages of construction for loadings or stresses that are not present in the finished, in service structure.

4. RISKS OR OBSTACLES TO RESEARCH

The researcher may have difficulty developing templates that can be applied to common issues on bridges with varying characteristics. The number of templates, applicable cases, and variables may be difficult to ascertain. The challenge will be to develop guidelines that are flexible enough to apply to the broad range of structural situations encountered.

5. DESIRED QUALIFICATIONS IN AN INVESTIGATOR(S)

The ideal team would include both an experienced bridge designer from a bridge design and construction review firm to develop design guidelines that address common situations, and an experienced Principal Investigator from a University to develop MathCAD templates, document methods, and conduct training. No specific qualifications in statistics are required. Researcher should have knowledge of bridge design and bridge construction, including common bridge types owned by MDOT.

There is no statistical qualification requirement for this proposal.

CONSULTANT RESPONSIBILITIES:

1. Review of literature and state-of-the-art practices.
2. Survey MDOT Design, Field Services, and Construction staff and review of typical MDOT bridge project plans and construction methods.

3. Select common design and construction review scenarios that need documented guidelines. Identify a subset of the common scenarios that need a MathCAD analysis template.
4. Develop frameworks to address the common scenarios and the MathCAD templates. Evaluate the templates and guidelines and identify ranges/limits of use.
5. Develop a standalone constructability review and staged construction design guidelines document including a MathCAD analysis template and users guide. Submit a beta version of the MathCAD template and guidelines to MDOT for a 6 month review process. Revise the MathCAD template and guidelines in response to MDOT concerns. Conduct an educational workshop for design engineers and bridge construction staff.
6. Produce final research report.

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

DELIVERABLES:

Deliverables will include analysis templates in MathCAD format for typical construction cases with a user's guide, guidelines for reviewing plans for constructability and designing plans for staged construction, educational workshop, and a research report documenting the project methods and recommendations.

MDOT RESPONSIBILITIES:

MDOT will provide project plans, proposals, and fabrication submittals. MDOT will also provide site visits to active construction sites if necessary. MathCAD template testing and guidelines review will be conducted by MDOT.

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 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 (QA/QC) 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	\$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)									\$0.00
Provide a separate table itemizing costs.									\$0.00
Out-of-State Travel (Prior approval required)									\$0.00
Provide a separate table itemizing costs.									\$0.00
Sub-Total Travel					\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

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