

**SEP-14 Work Plan
Michigan Department of Transportation
Variable Scope Contracting
Job No. 106329, Grand Region
November 14, 2016**

Introduction

The Michigan Department of Transportation (MDOT) proposes to use variable scope contracting for an ITS and Environmental Sensor Station project at various locations within Muskegon and Ottawa Counties in the Grand Region.

Purpose

The purpose of this variable scope contract is to construct at least twenty (20) to twenty-three (23), ITS/environmental sensor stations and the Fiber Optic Network within the current available project budget. If additional funding becomes available prior to advertising the project, MDOT may add additional sites. See Attachment B for the location of the project sites, as well as the preliminary list of what sites will be included with the minimum bid, which sites are included in the variable scope portion of the project, and which sites will be added if additional funding becomes available.

NEPA Document

The project has been classified as a Categorical Exclusion. The project description in the document is expected to be "RWIS Phase I".

STIP

The project will be described in the STIP as "RWIS Phase 1". Sites designed but not built as part of this project are part of the statewide RWIS evaluation and planned or programmed with the Grand Region Phase II RWIS project as funding becomes available. The sites all have independent utility and will all function independently.

Scope

The project budget is approximately \$4,000,000 and will be funded with a mix of federal and state funds. MDOT anticipates that at least twenty (20) ITS/Environmental Sensor Station sites and the Fiber Optic Network can be installed with this funding level. An additional three (3) ESS sites are desired within the region located in Muskegon and Ottawa Counties, and this level of funding may be sufficient to complete a portion of the remaining desired sites. ESS Sites include items such as atmospheric equipment, pavement condition sensors, cabinets, power, communications and other miscellaneous devices to provide a working system. Recent bid history on similar work has had significant variances making estimating difficult. Variable Scope contracting will allow the possibility for more than three (3) ESS sites to be installed if the bids are below the available budget.

Procurement Process

The project is anticipated to be divided into 4 sections for contractors to bid on.

Section 1 in the Schedule of Items will include the work needed to install ITS/ESS sites 1 through 20 and the Fiber Optic Network. Section 1 is the minimum amount of work that can be bid, and bids can be submitted in this section above the \$4,000,000 budget.

Section 2 in the Schedule of Items will include the work needed to install ITS/ESS sites 1 through 21 and the Fiber Optic Network. Bids will only be accepted for this section if the bid price is equal to or less than the available budget (\$4,000,000).

Section 3 in the Schedule of Items will include the work needed to install ITS/ESS sites 1 through 22 and the Fiber Optic Network. Bids will only be accepted for this section if the bid price is equal to or less than the available budget (\$4,000,000).

Section 4 in the Schedule of Items will include the work needed to install ITS/ESS sites 1 through 23 and the Fiber Optic Network. Bids will only be accepted for this section if the bid price is equal to or less than the available budget (\$4,000,000).

Contractors will only be allowed to bid on one Section. The selection of the contractor will be based on the following criteria:

1. Work Completed: The selected contractor will be the one that can complete the most work.
2. Price: If two or more contractors are tied after applying criteria 1, the tied contractor's price will be considered. The contractor with the lowest price will be the selected contractor.
3. Best and Final Offer (BAFO): If two or more contractors are tied after applying criteria 2, MDOT will request a BAFO from the tied contractors. The contractor with the lowest price will be the selected contractor.
4. Random Selection: If two or more contractors are tied after applying criteria 3, MDOT will draw a name from a container to determine the selected contractor.

Example Bids are shown in Attachment A. A Special Provision from a similar FPVS project is included in Attachment C. MDOT anticipates using this special provision as a starting point, and will modify it based on the budget and the number of sites in the final contract. If there are significant changes to the Special Provision, MDOT will obtain approval from the FHWA-Michigan Division prior to advertising the project.

Schedule

The project is scheduled to utilize FY 2016 funds, and be let in January, 2017. Construction will occur in 2017 through June of 2018.

Evaluation

To evaluate the success of this innovative contracting method, MDOT will assess the completed work under the contract compared to a typical design-bid-build project. To accomplish this, MDOT will estimate the amount of work that would be expected to be constructed using the budgeted dollar amount. Estimating will be performed by using traditional estimating methods based on recent bidding history.

Industry reaction will also be measured by comparing the bids on similar contracts to the number of bids received on the fixed price variable scope contracts, as well as comments and suggestions from Michigan's contracting industry.

Reporting

MDOT will prepare and submit a report to the FHWA within 6 months of the project's completion. The report will contain information on how to access the project's unique contract language, an overall evaluation to determine if this innovative contracting method provided more value for the dollar than traditional contracting methods along with any recommendations for improving the process.

Attachment A

Example Schedule of Items
(Actual Schedule of Items are more extensive)

Section 1: ITS/Environmental Sensor Station Installation: Sites 1 - 20				
Pay Item	Quantity	Unit	Price	Total
Mobilization	1	LS		
Conduit, Directional Bore, 1, 3 inch	5000	Ft		
Environmental Sensor Station Tower	20	Ea		
Atmospheric Sensor	20	Ea		
System Integration and Testing	1	LS		

Section 2: ITS/Environmental Sensor Station Installation: Sites 1 - 21				
Pay Item	Quantity	Unit	Price	Total
Mobilization	1	LS		
Conduit, Directional Bore, 1, 3 inch	5500	Ft		
Environmental Sensor Station Tower	21	Ea		
Atmospheric Sensor	21	Ea		
System Integration and Testing	1	LS		

Section 3: ITS/Environmental Sensor Station Installation: Sites 1 - 22				
Pay Item	Quantity	Unit	Price	Total
Mobilization	1	LS		
Conduit and Wire	6000	Ft		
Pole	22	Ea		
Environmental Sensors	22	Ea		
Integration	1	LS		

Section 4: ITS/Environmental Sensor Station Installation: Sites 1 - 23				
Pay Item	Quantity	Unit	Price	Total
Mobilization	1	LS		
Conduit, Directional Bore, 1, 3 inch	6500	Ft		
Environmental Sensor Station Tower	23	Ea		
Atmospheric Sensor	23	Ea		
System Integration and Testing	1	LS		

Bid Example 1					
Contractor Name	Bid Results			Acceptable Bid?	Comments
	Section 1	Section 2	Section 3		
A1 Contractors	\$4,200,000			Yes. Section 1 bids can be higher than \$4,000,000	
B2 Contractors		\$3,900,000		Yes. Section 2 and 3 bids must ≤ \$4,000,000	
C3 Contractors		\$3,300,000		Yes. Section 2 and 3 bids must ≤ \$4,000,000	
D4 Contractors		\$3,950,000		Yes. Section 2 and 3 bids must ≤ \$4,000,000	
E5 Contractors	\$3,900,000			Yes	
F6 Contractors			\$3,900,000	Yes. Section 2 and 3 bids must ≤ \$4,000,000	
G7 Contractors		\$4,300,000		No. Section 2 bids cannot exceed \$4,000,000	Non-responsive bid
H8 Contractors			\$4,220,000	No. Section 3 bids cannot exceed \$4,000,000	Non-responsive bid
I 9 Contractors	\$4,000,000	\$250,000		No. You cannot bid on more than 1 section.	Non-responsive bid
J 10 Contractors			\$3,750,000	Yes. Section 2 and 3 bids must ≤ \$4,000,000	Selected Contractor: Criteria 1

Bid Example 2					
Contractor Name	Bid Results			Acceptable Bid?	Comments
	Section 1	Section 2	Section 3		
A1 Contractors	\$4,900,000			Yes. Section 1 bids can be higher than \$4,000,000	
B2 Contractors		\$3,800,000		Yes. Section 2 and 3 bids must ≤ \$4,000,000	
C3 Contractors		\$3,700,000		Yes. Section 2 and 3 bids must ≤ \$4,000,000	
D4 Contractors		\$3,600,000		Yes. Section 2 and 3 bids must ≤ \$4,000,000	Selected Contractor: Criteria 2
E5 Contractors	\$4,500,000			Yes	
G7 Contractors		\$4,200,000		No. Section 2 bids cannot exceed \$4,000,000	Non-responsive bid
H8 Contractors			\$4,201,000	No. Section 3 bids cannot exceed \$4,000,000	Non-responsive bid
I 9 Contractors	\$3,400,000	\$250,000		No. You cannot bid on more than 1 section.	Non-responsive bid

Bid Example 3					
Contractor Name	Bid Results			Acceptable Bid?	Comments
	Section 1	Section 2	Section 3		
A1 Contractors	\$4,900,000			Yes. Section 1 bids can be higher than \$4,000,000	
B2 Contractors		\$3,800,000		Yes. Section 2 and 3 bids must ≤ \$4,000,000	Criteria 3: Request BAFO
C3 Contractors		\$3,800,000		Yes. Section 2 and 3 bids must ≤ \$4,000,000	Criteria 3: Request BAFO
E5 Contractors	\$4,500,000			Yes	
G7 Contractors		\$4,100,000		No. Section 2 bids cannot exceed \$4,000,000	Non-responsive bid
H8 Contractors			\$4,100,000	No. Section 3 bids cannot exceed \$4,000,000	Non-responsive bid
I 9 Contractors	\$3,400,000	\$250,000		No. You cannot bid on more than 1 section.	Non-responsive bid

Attachment B: Site Locations

The following locations are currently anticipated to be included in the minimum bid:

Site #	Location	City/Township	Full/Partial
Fiber Optic Network	US-31, Sternberg Rd to Laketon Ave.	Muskegon	Full
1	US-31 at Jackson	Grand Haven	Full
2	US-31 at M-104	Spring Lake	Full
3	US-31 at Van Wagoner	Ferrysburg	Full
4	US-31 south of E. Pontaluna Rd.	Norton Shores	Full
5	US-31 at E. Sternberg Rd.	Norton Shores	Full
6	US-31 at I-96 (ESS Site #2)	Norton Shores	Full
7	US-31 at Broadway	Norton Shores	Full
8	US-31 at E. Laketon Ave.	Muskegon Township	Full
9	US-31 at Bus -31 N (ESS Site #3)	Muskegon Township	Full
10	US-31 south of M-120	Muskegon Township	Full
11	US-31 at M-120/Holton Rd.	Muskegon Township	Full
12	I-96 at Fruitport Road	Fruitport Township	Full
13	I-96 at Fruitport Rest Area	Crockery Township	Full
14	I-96 at 112 th Ave.	Crockery Township	Full
15	I-96 at 96 th Ave.	Polktown Township	Full
16	M-120 at BUS-31	Muskegon	Full
17	MPSCS Tower #6404 at 12791 68 th Ave.	Allendale	Full
18	I-96 at Leonard	Grand Rapids	Full
19	I-96 at M-44 (Node #7)	Grand Rapids	Full
20	I-96 at 48 th Ave. (ESS Site #1)	Boston Township	Full

The following locations are currently anticipated to be in the variable scope portion of the project:

Site #	Location	City/Township	Full/Partial
21	US-31 at Holton\Whitehall Rd/US-31 (ESS Site #4)	Whitehall Township	Full
22	US-31 at Harbor Island Dr. (ESS Site #5)	Grand Haven	Full
23	I-196 at 32 nd Ave. (ESS Site #6)	Jamestown Township	Full

Attachment C: Example FPVS Special Provision

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
**PREPARATION, DELIVERY, AND CONSIDERATION OF BIDS ON FIXED PRICE
VARIABLE SCOPE PROJECTS**

1 of 2

The Department will receive and compare bids according to the process described in this special provision to determine the low Bidder for this project.

Delete subsection 102.03, on page 16 of the Standard Specifications for Construction, in its entirety and replace it with the following:

The Department will use the process described in the Special Provision for Preparation, Delivery, and Consideration of Bids on Fixed Price Variable Scope Projects and the modifications to the Standard Specifications for Construction contained therein to determine the low Bidder for this project.

Add the following after the second paragraph in subsection 102.05, on page 17 of the Standard Specifications for Construction:

Do not bid on more than one Section. Bid on all pay items listed in the Section being bid, and leave the pay items in the other Sections blank. When bidding electronically in Bid Express, deselect all pay items with a fixed unit price in the Sections not being bid. Bids will be considered non-responsive if 2 or more Sections are bid, or if all pay items in the Section are not bid. Sites 1 through 8 are identified in the plans.

Bids for Section 0001: Sites 1 through 20 and the Fiber Optic Network – can be submitted at any price.

Bids for Section 0002: Sites 1 through 21 and the Fiber Optic Network – must be less than or equal to \$4,000,000. Bids greater than this dollar amount will be considered non-responsive.

Bids for Section 0003: Sites 1 through 22 and the Fiber Optic Network– must be less than or equal to \$4,000,000. Bids greater than this dollar amount will be considered non-responsive.

Bids for Section 0004: Sites 1 through 23 and the Fiber Optic Network– must be less than or equal to \$4,000,000. Bids greater than this dollar amount will be considered non-responsive.

Delete subsection 102.06.A.1, on page 17 of the Standard Specifications for Construction, in its entirety.

Delete the first paragraph of subsection 102.13, on page 21 of the Standard Specifications for Construction, in its entirety and replace it with the following:

The low Bidder will be determined based on the following criteria.

A. The Bidder that bids the most work will be the low Bidder. For the purposes of determining the bid, Section 0004 is considered more work than Section 0001, Section 0002 or Section 0003, and Section 0002 is considered more work than Section 0001.

B. In the event two or more Bidders are tied after subsection 102.13.A is evaluated, the Department will evaluate the price bid by each of the tied Bidders. The Bidder with the lowest price will be considered the low Bidder.

C. In the event that two or more Bidders are tied after subsection 102.13.B is evaluated, the Department will request an adjusted bid price from each of the tied Bidders. Adjusted bid price cannot be greater than the original price bid. The Bidder with the lowest adjusted price will be the low Bidder.

D. In the event that two or more Bidders are tied after subsection 102.13.C is evaluated, the low Bidder will be determined by drawing names from a container. The following rules apply:

1. Each of the tied Bidders will provide a representative to witness the drawing. The representative must have the authority to sign an agreement.
2. The names of the tied Bidders will be written on separate and identical pieces of paper and be placed in a container provided by the Department.
3. A representative of the Department will draw a single piece of paper from the container. The Bidder that is drawn from the container will be the low Bidder. The drawing constitutes the final decision of the Department and is not subject to further contest or appeal.