

**RESOLUTION NO. 2019- 2070**

**AUTHORIZING THE SAFETY SERVICE DIRECTOR TO SIGN AN AGREEMENT WITH THE OHIO DEPARTMENT OF TRANSPORTATION ON BEHALF OF THE CITY OF FREMONT, TO ENTER INTO THE BRIDGE INSPECTION PROGRAM SERVICES FOR PID NO. 109334 AND DECLARING AN EMERGENCY.**

**WHEREAS**, the City desires to enter into a contract for the Bridge Inspection Program Services with the Ohio Department of Transportation (hereinafter referred to as ODOT) in PID No. 109334, and

**WHEREAS**, the City has determined the need for the Bridge Inspection Program Services, including, but not limited to bridge load rating calculations, scour assessments, annual bridge inspections, and fracture critical plan development, and

**WHEREAS**, the City needs the Safety Service Director to sign an agreement as a prerequisite for the City of Fremont to participate in the program at no expense.

**NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF FREMONT, STATE OF OHIO,**

**SECTION 1.** The Safety Service Director is hereby authorized to sign an agreement with ODOT for Bridge Inspection Program Services for PID No. 109334.

**SECTION 2.** This program is in the public interest; therefore, City Council hereby authorizes the Safety Service Director to give consent to the Director of Transportation to complete the Bridge Inspection Program Services.

**SECTION 3.** The State shall assume and bear 100% of all of the costs for Bridge Inspection Program Services requested by the City and agreed to by the State. Eligible Bridge Inspection Services are described in the Consultant's Scope of Services Task Order Contract. (Attached as Exhibit A)

**SECTION 4.** The City agrees to pay 100% of the cost of those features which are not included in the contract.


**SECTION 5.** The City shall cooperate with the Director of Transportation in facilitating the program.

**SECTION 6.** The City agrees that all right-of-ways required for the described program will be made available in accordance with current State and Federal regulations.

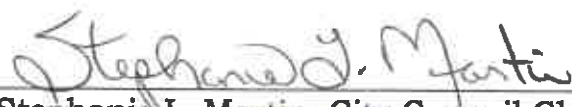
**SECTION 7.** It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this resolution were adopted in an open meeting of this Council, and that all deliberations of this Council and any of its committees that resulted in such formal action were in meetings open to the public in compliance with all legal requirements, including Section 121.22 of the Revised Code of Ohio.

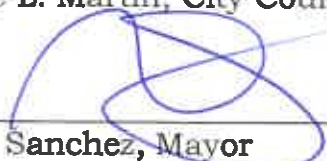
**SECTION 8.** The immediate operation of the provisions of this resolution is necessary for the immediate preservation of the public peace, health, safety and welfare of the citizens of the City of Fremont. Said emergency being the need to administer the program in a timely manner.

This resolution, provided it receives a two-thirds yea or nay vote of all the members elected to the Fremont City Council, is hereby declared to be an emergency measure and this resolution shall be in full force and effect from and after its passage by the Council of the City of Fremont, approval by the Safety Service Director, and publication and posting as required by law.

  
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Jamie Hafford  
President of Council

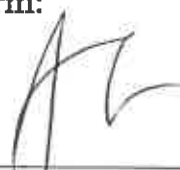
PASSED: 10-3-19  
Effective date: 10-3-19  
YEAS: 7      NAYS: 0

  
\_\_\_\_\_  
Stephanie L. Martin, City Council Clerk

  
\_\_\_\_\_  
Daniel R. Sanchez, Mayor

RES585

Approved as to form:

  
\_\_\_\_\_  
James F. Melle, Director of Law  
City of Fremont, Ohio

Approved Final Scope of Services Minutes Date: \_\_\_\_\_

**GENERAL ENGINEERING SERVICES  
Central Office, Office of Structural Engineering  
Scope of Services**

The CONSULTANT may be required to perform the following services on a task order type basis for bridges designated by regulation or by agreement as City or Village inspection responsibility. Tasks which may include but are not limited to the following:

**Task 1 - Scour Tasks**

- Task 1A - Scour Critical Assessment
- Task 1B - Scour Plan-of-Action
- Task 1C – Scour Analysis

**Task 2 - Load Rating Tasks**

- Task 2A - Field Measurements for Load Rating
- Task 2B - Load Rating Calculations

**Task 3 – SMS Structure Inventory and Review**

**Task 4 – Inspection Procedures**

- Task 4A - Fracture Critical Plan
- Task 4B – Underwater Inspection Procedures

**Task 5 - Bridge Inspection**

- Task 5A – Routine Bridge Inspection
- Task 5B – Fracture Critical Inspection
- Task 5C – Underwater Dive Inspection

Services shall be conducted in accordance with the following:

- ODOT Manual of Bridge Inspection, Latest Version
- ODOT SMS Bridge and Inventory Coding Guide, Latest Version
- ODOT Bridge Design Manual, Section 900), Latest Version
- Hydraulic Engineering Circulars 18, 20 and 23
- The Manual for Bridge Evaluation, Second Edition 2013 interim with revisions, AASHTO

Publication

- Bridge Inspector's Reference Manual, FHWA NHI Publication Number: 12-049,  
Publication Year: 2012
- Underwater Bridge Inspection, FHWA Publication Number: FHWA NHI-10-027,  
Publication Year: 2010

The CONSULTANT shall maintain a project cost accounting system that will segregate costs for individual task orders. The invoicing progress reports shall be detailed enough to show the breakdown of each assigned structure indicating the status of all subtasks. Completion of the individual subtasks is necessary for reimbursement credits.

The Department will be performing an annual Quality Assurance Review (QAR) for each selected consultant in accordance with Manual of Bridge Inspection to ensure accuracy and consistency of the inspection and documentation in SMS. This typically includes an office and field review.

The project will be divided into four (4) sub-projects (SP). A CONSULTANT will be selected for each sub-project. Municipalities opted into the previous inspection program will have the option to renew their legislation. Municipalities with population greater than 50,000 people are excluded from the program. The sub-projects have the following general geographic areas, category characteristics, and maximum contract values for the municipalities with municipal inspection responsibility obtained from SMS data as of March 2019.

**Project: SP01 - District (1, 2, &3), Total Structures = 435\***

Type	L =< 20'	20' < L =< 60'	60' < L =< 200'	L > 200'	Total
<b>Single Span</b>	170	158	24	0	<b>352</b>
<b>Multi-Span</b>	21	18	29	15	<b>83</b>
<b>Culvert</b>	156	45	0	0	<b>201</b>
<b>Truss</b>	0	0	2	0	<b>2</b>
<b>Underwater Inspection</b>	0	0	0	0	<b>0</b>
<b>Fracture Critical Inspection</b>	0	4	0	0	<b>4</b>
<b>Load Rating**</b>	149	75	16	10	<b>250</b>

\* Level 1 bridge inspection structures

\*\* Tasked as budget allows w/priority for NBI bridges

**General Engineering Services Scope of Services  
Central Office, Office of Structural Engineering  
PID No. 109334**

**Project: SP02 - District (4, 11, &12), Total Structures = 270\***

Type	L ≤ 20'	20' < L ≤ 60'	60' < L ≤ 200'	L > 200'	Total
Single Span	86	86	25	0	197
Multi-Span	16	14	27	16	73
Culvert	82	36	0	0	118
Truss	1	1	5	0	7
Underwater Inspection	0	0	0	1	1
Fracture Critical Inspection	0	1	5	0	6
Load Rating**	67	35	16	5	123

\* Level 1 Bridge Inspection structures

\*\* Tasked as budget allows w/priority for NBI bridges

**Project: SP03 - District (5, 6, &10), Total Structures = 355\***

Type	L ≤ 20'	20' < L ≤ 60'	60' < L ≤ 200'	L > 200'	Total
Single Span	132	126	29	0	287
Multi-Span	7	8	35	18	68
Culvert	108	62	4	0	174
Truss	0	0	8	0	8
Underwater Inspection	0	0	1	1	2
Fracture Critical Inspection	0	0	8	1	9
Load Rating**	141	73	20	8	242

\* Level 1 bridge inspection structures

\*\* Tasked as budget allows w/priority for NBI bridges

**Project: SP04 - District (7, 8 &9), Total Structures = 426\***

Type	L ≤ 20'	20' < L ≤ 60'	60' < L ≤ 200'	L > 200'	Total
Single Span	150	125	29	0	304
Multi-Span	27	42	41	12	122
Culvert	135	93	30		231
Truss	0	1	5	1	7
Underwater Inspection	0	0	1	1	2
Fracture Critical Inspection	0	2	4	1	7
Load Rating	180	81	27	2	290

\* Level 1 bridge inspection structures

\*\* Tasked as budget allows w/priority for NBI bridges

Please note that the total number of structure types is estimated based on current SMS data query, and it may be adjusted when tasks are assigned in the future.

### **UNDERSTANDING**

1. Inspections shall be completed by firm's full-time staff prequalified with ODOT for Level 1 bridge inspection according to the Manual of Bridge Inspection.
2. Task order are intended for maintaining compliance with the FHWA 23-Mertics, Ohio Revised Code, and ODOT policy manuals. Deadlines set by the task orders shall be respected.
3. All reports and records compiled under this agreement shall become the property of the City or Village and shall be housed in the City or Village. ODOT shall receive an electronic copy of plans, analysis files, reports and other items mentioned below.
  - a) CONSULTANT shall perform all applicable updates to SMS with new or revised information for structure inventory and appraisal data, inspections, scour, fracture critical members, and load ratings.
  - b) CONSULTANT shall submit copies of all reports and calculations electronically, or in hard copies when requested, to the City or Village for inclusion in their bridge records.
  - c) This includes, as applicable, a printed copy of the inspection report, Scour Plan-of-Action, Fracture Critical Plan, load rating report, gusset plate analysis, inspection procedures, and field measurement notes, digital pictures as well as a reproducible digital data file (.pdf, .doc, .xml, and .xls formats).
4. Copies of all transmittal letters related to this Task Order shall be submitted to Central Office, Office of Structural Engineering.
  - a) When required, CONSULTANTS shall locate the original construction plans, as-built, and shop drawings from archive locations specified by the municipality and upload them onto SMS.

**Services to be furnished by CONSULTANT may include:**

### **TASK 1 - SCOUR TASKS**

**Task 1A – Scour Critical Susceptibility NBIS Item 113) -** The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection. Deliverables include field notes, a completed Scour Critical Assessment Checklist as per Appendix I of the 2014 Manual of Bridge Inspection, and any other reference material needed for the bridge

owner to properly maintain their bridge files. Channel photos or cross sections maybe tasked under this item if assigned.

**Task 1B - Scour Plan-of-Action** - The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection Appendix H for the scope of this task. Deliverables include a completed Scour Plan-of-Action, field notes, calculations, and any other reference material needed by bridge owner to maintain bridge files.

## **TASK 2 – LOAD RATING TASKS**

**Task 2A - Field Measurements for Load Rating** - Should no plans exist or if additional information is required, each main member shall be field measured for load rating. The condition of the member should be noted on the field documentation. All measurements shall be included in the load rating report.

**Task 2B - Load Rating Calculations** – A bridge carrying vehicular traffic shall be rated to determine the safe load carrying capacity. The CONSULTANT shall review existing bridge plans and inspection reports and other inspection information such as photographs and estimates of section loss for bridge members and connections. The analysis for existing structures shall be performed for AASHTO HS20-44 [MS 18] (truck, lane, & military) loading for both inventory and operating levels, and for the four Ohio Legal Loads including the special hauling vehicles (2F1, 3F1, 4F1, and 5C1, SU4, SU5, SU6, SU7, EV2, and EV3) at operating level. The CONSULTANT shall try to complete the load rating analysis utilizing BrR (Virtis) at first. Hand-calculations or Spreadsheets if BrR is not applicable. The BrR analysis file, other load rating files, and BR100 shall be included with the submittal to OSE.

The inventory and operating ratings shall be coded as per the most recent version of the ODOT Bridge Inventory Coding Guide. Update SMS Inventory with the load rating results and upload BR100 pdf file.

The electronic deliverable shall include if applicable an Excel spreadsheet or other files used for analysis for each bridge which shall include the member areas, member capacities both with and without section loss, influence lines (can be the ordinates or graph of the lines), dead loads and dead load stresses in members, live loads and live load stresses in members for all truck loadings and the load ratings of the members. Truck loadings to be used for the ratings are specified in BDM Section 900.

The Load Rating Report shall be prepared by a registered or non-registered engineer and it shall be checked, signed, sealed and dated by an Ohio Registered Professional Engineer.

The Load Rating Report shall explain the method used to calculate the load rating of each bridge.

AASHTO Load Factor Rating (LFR) shall be utilized for all bridges not designed by Load and Resistance Factor Design. AASHTO Load and Resistance Factor Rating (LRFR) shall be utilized for all structures designed for HL93 loading starting October 2010.

Load Rating Report Submittal to the City or Village shall include:

- a. Two (2) printed copies and one electronic pdf copy of the Load Rating Report for each bridge.
- b. Final summary of inventory and operating ratings for each member and the overall ratings of the structure shall be presented for each live load truck. An acceptable format is ODOT form BR-100.
- c. Analysis program input files. Both input and output files shall be submitted when programs other than BrR or spreadsheets are used.
- d. All calculations related to the load rating.
- e. If applicable, the weight limits posting recommendations including a copy of the standard posting sign; such as R12-1 (24" x 30"), R12-H5 (30" x 48"), and R12-H7 (30" x 30").

### **TASK 3 – SMS STRUCTURE INVENTORY AND REVIEW**

The scope of this task includes a limited review of the structure inventory data in the ODOT SMS. In general, the CONSULTANT shall review specific existing ODOT bridge inventory records (as provided by the City and approved by ODOT) of the designated bridge. The CONSULTANT may download the inventory report, which contains inventory data for each bridge on file with ODOT from the ODOT website. The CONSULTANT shall verify this data and determine if the ODOT SMS structure file information needs changing. If no changes are necessary, then no SMS inventory needs to be filled out. If changes are necessary, the scope of this task shall also include completing and filing inventory updates (and supplements, as needed) in SMS. The CONSULTANT shall refer to the ODOT Office of Structural Engineering Inventory and Coding Guide of SMS for inventory coding details.

### **TASK 4 – INSPECTION PROCEDURES**

**Task 4A – Fracture Critical Plan** – A Fracture Critical Member Plan and inspection procedure shall be developed and updated. For more details, refer to Chapter 4: Inspection Types in the Manual of Bridge Inspection. It shall include:

1. Sketches of the superstructure with locations of all fatigue and fracture prone details identified.
  - a. Use framing plan or schematic with detail locations labeled and a legend explaining each labeled item on the scheme.



- b. Use an elevation view for trusses.
  - c. Classify similar fatigue/fracture prone details as types (e.g. end of partial cover plate).
2. A table or location of important structural details indicating:
  - a. Type of detail (e.g. end of partial cover plate, short web gap, etc.)
  - b. Location of each occurrence of detail
  - c. AASHTO Fatigue Category of detail
  - d. Identify retrofits previously installed
3. Risk Factors Influencing the inspector access.

Photos and sketches shall be properly referenced. The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection for additional details on the scope of this task.

**Task 4B – Underwater Inspection Procedures** – An underwater inspection procedure shall be developed. For more details, refer to Chapter 4: Underwater Inspections in the Manual of Bridge Inspection. Please note that ODOT has recently revised Appendix F of the inspection manual. The diving team shall fill out or update the new form and upload it on SMS prior to performing the actual dives. Please contact OSE for a copy of a blank form if not uploaded on SMS at the time.

## **TASK 5 – BRIDGE INSPECTION**

**Task 5A – Routine Bridge Inspection (SMS Input)** - Perform a routine field inspection of the structure to determine the general condition. The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection for additional details on the scope of this task. Section 1111 of the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) modified 23 U.S.C.144, requires Ohio to report bridge element level data for NBIS bridges on the National Highway System (NHS) to FHWA. A condition rating or element level inspection will be assigned. This task includes: Condition Rating Inspection for non-NBI structures, Condition Rating Inspection for NBI structures, and Element Level Inspection for NBI classified as NHS.

**Task 5B – Fracture Critical Inspection** - Perform a fracture critical field inspection of fracture critical items. The CONSULTANT shall update the FCM inspection procedure with current photos and descriptions. The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection for additional details on the scope of this task.

**Task 5C – Underwater Dive Inspection** – Perform Underwater/ In-Water inspection of substructure units according to the cycle shown in SMS. Emergency underwater inspection may arise for specific structures over the duration of the contract period. Work shall be done in accordance with the reference manuals and inspection procedure. Scour risk shall be evaluated after field and data collection.