

Municipal Bridge Inspection **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, Village, or Metro Parks inspection responsibilities. Bridge Inspection services may include but are not limited to the following:

Task 1 - Scour Tasks:

- Task 1A - Scour Assessment
- Task 1B - Scour Plan-of-Action
- Task 1C - Scour Appraisal (SNBI)
- Task 1D - Channel Bed Measurements
- Task 1E - Channel Photos

Task 2 - Load Rating Tasks:

- Task 2A - Field Measurements for New Load Rating
- Task 2B - Load Rating New Calculations
- Task 2C - Load Rating Update Calculations
- Task 2D - Field Measurements/Verifications for Gusset Plates
- Task 2E - Load Rating of Gusset Plates New Calculations
- Task 2F - Load Rating Update of Gusset Plates
- Task 2G - Load Rating Assigned or Judgement

Task 3 – AssetWise Tasks Structure Inventory and Review, Including New SNBI Fields:

- Task 3A - Structure Inventory and Review for SNBI Implementation
- Task 3B - Bridge Files and Plans Research & AssetWise Uploads

Task 4 – Inspection Procedures Tasks:

- Task 4A - Nonredundant Steel Tension Member (NSTM) Plan & Procedures
- Task 4B - Underwater Inspection Procedures

Task 5 - Bridge Inspection Tasks:

- Task 5A – Initial Inspection
- Task 5B – Routine Inspection
- Task 5C – Underwater Inspection
- Task 5D – Nonredundant Steel Tension Member (NSTM) Inspection
- Task 5E – Damage Inspection
- Task 5F – In-Depth Inspection
- Task 5G – Special Inspection (Mechanical, Electrical, Other)
- Task 5H – Ohio Cursory Safety Inspection
- Task 5I – Scour Monitoring Inspection

Scope of Services
Central Office, Office of Structural Engineering
PID No. 126928
Muni Bridge Inspection SP04

Services shall be conducted in accordance with the following references:

- ODOT Manual of Bridge Inspection, Latest Version (2025 Manual)
- ODOT Bridge Design Manual, Section 900), Latest Version
- FHWA Specification for the National Bridge Inventory, March 2022 SNBI Publication
- FHWA Specification for the National Bridge Inventory Bridge Elements (SNBIBE), Published January 2014
- Hydraulic Engineering Circulars 18, 20, and 23
- The Manual for Bridge Evaluation, Third Edition 2018 interim with latest 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 Department will be performing an annual Quality Assurance Review (QAR) for the selected consultant in accordance with Manual of Bridge Inspection to ensure accuracy and consistency of the inspection and documentation in AssetWise. This typically includes an office and field review.

Municipalities opted into the previous inspection program will have the option to renew their legislation. Municipalities with populations greater than 50,000 people are excluded from the program. Unless declined by the local agency, ODOT is taking the initiative to transition all the municipal inventory of SNBI data into AssetWise, which may include updating the load rating for newly added vehicles.

The project has the following general geographic areas, category characteristics, and maximum contract values for the municipalities with municipal inspection responsibility obtained from AssetWise data as of July 2026.

Total bridge count for opted in municipalities geographically located in Districts (7, 8, & 9) managed under SP04 = 578

Task Type	L ≤ 20'	20' < L ≤ 60'	60' < L ≤ 200'	L > 200'	Total
Single Span Inspection	43	86	30	1	160
Multi-Span Inspection	1	6	47	13	67
Culvert Inspection	163	121	3	0	287
Truss Inspection	3	0	9	5	17
NSTM Inspection	0	1	3	1	5
Underwater Inspection	0	0	2	1	3
Cursory Safety Inspection	2	25	30	7	64
BrR Data File Available	94	139	83	13	329
Load Rating	37	2	1	0	40
Assetwise Inventory	209	238	110	21	578

Please note that the total number of structure types is estimated based on current AssetWise data queries, and it may be adjusted when tasks are assigned in the future which may include newly found orphan bridges.

UNDERSTANDING

1. Inspections shall be completed by firm's prequalified full-time staff according to ODOT's Manual of Bridge Inspection & Inventory. During this agreement, ODOT will establish a new list of bridge inspectors that must qualify for the national registry in accordance with FHWA.

2. Task orders are intended for maintaining compliance with the FHWA requirements, Ohio Revised Code, and ODOT policy manuals. Deadlines set by the task orders shall be respected. The consultant shall keep the inventory and inspection records current in AssetWise. All open reports must be approved within 30 days of the inspection date.

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. Additionally, all deliverable files shall be uploaded to AssetWise.

- a) CONSULTANT shall timely perform all applicable updates to ASSETWISE with new or revised information for structure inventory data, inspections, photos, scour, NSTM, underwater dive reports, field measurement sketches, 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, NSTM 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 and emails related to this Task Order shall be submitted to Central Office, Office of Structural Engineering. All bridge safety concerns must be sent to ODOT PM to determine the appropriate plan of action.

- 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 ASSETWISE.

Services to be furnished by CONSULTANT may include:

TASK 1 - SCOUR TASKS

Task 1A – Scour Assessment - The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection which will be updated in 2024. Deliverables

include field notes, and the latest revision of the Scour Critical Assessment Checklist. Channel photos or cross sections may be tasked under this item if assigned. This task will be assigned on a limited basis in lieu of filling out the SNBI Scour Appraisal form on AssetWise.

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 in 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 the 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) or HL93 loading for both inventory and operating levels, and for the Ohio Legal Loads including the special hauling vehicles (2F1, 3F1, and 5C1, SU4, SU5, SU6, SU7, AASHTO Type 3, AASHTO Type 3S2, Type AASHTO Type 3-3, EV2, and EV3) at the operating level. The CONSULTANT shall try to complete the load rating analysis utilizing BrR first. Then hand calculations, finite element modeling, or spreadsheets if BrR is not applicable. Field evaluation and engineering judgement shall be the last resort if analysis is not possible. The BrR analysis file, other load rating files, and the latest BR100 shall be included with the submittal to OSE.

The inventory and operating rating factors shall be coded as per the most recent version of the ODOT Bridge Inspection Manual and the BDM Section 900. Update ASSETWISE SNBI 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. BR100 shall have the comments and assumptions box filled out providing as much practical description as possible.

AASHTO Load and Resistance Factor Rating (LRFR) shall be utilized for all structures designed for HL93 loading starting October 2010. ODOT aims to load all structures in LRFR. If the bridge requires posting in LRFR and the design loading was not for HL93, the rater may use the LFR method.

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 shall utilize the standard posting sign, such as R12-H6 (5 Trucks plus Double Silhouette). Posting head signs shall be installed at the nearest intersection.

TASK 3 – ASSETWISE STRUCTURE INVENTORY AND REVIEW

The scope of this task includes a review of the structure inventory data prior to performing the inspection. in ASSETWISE. The CONSULTANT shall field verify this data to update if needed. If changes are necessary, the scope of this task shall include completing and filling out all empty fields for SNBI in AssetWise. The inventory fields must be accurate and error free according to FHWA's Error Checker. The CONSULTANT shall refer to the Inspection Manual for inventory coding details. During this agreement, the consultant is anticipated to populate all fields necessary for compliance with FHWA. All bridges will be checked for errors including the non-NBI type.

TASK 4 – INSPECTION PROCEDURES

Task 4A – The NSTM Plan and inspection procedures 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 fatigue 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 the format of the procedures file. The diving team shall fill out or update the latest form and upload it on ASSETWISE prior to performing the actual dives. Please contact OSE for a copy of a blank form if not uploaded on ASSETWISE at the time.

TASK 5 – BRIDGE INSPECTION

Task 5A – Initial Bridge Inspection – Perform the initial inspection shortly before or after the bridge is opened to traffic. It is very similar to the routine inspection except it is in general the components are in new condition. Initial inspections are for newly constructed or rehabilitated bridges.

Task 5B – Routine Bridge Inspection (ASSETWISE 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 21st 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. The consultant shall probe the channel around the footing in water to determine depth of scour and report the date in AssetWise.

Task 5C – Underwater Dive Inspection – Perform Underwater/ In-Water inspection of substructure units according to the cycle shown in ASSETWISE. Emergency underwater inspections 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.

Task 5D – Nonredundant Steel Tension Member (NSTM) Inspection - Perform a fracture critical field inspection of fracture critical items. The CONSULTANT shall update the NSTM 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 5E – Damage Inspection – This unscheduled unique type is ordered when the bridge suffers structural damage due to natural disasters, fire, earthquake, flood, vehicular hit, etc.

Task 5F – In-Depth Inspection – This is usually scheduled at 60 months for major and complex bridges or when a bridge reaches a poor 4 condition to determine severity of component degradation or section loss. This usually results in an updated load rating.

Task 5G – Special Inspection – This is usually performed to focus on more specific components or location at a different interval than the routine inspection. Mechanical and Electrical are special inspections with a usual frequency set at 60 months.

Task 5H – Ohio Cursory Inspection – a safety inspection can be under this category. This may include RR over highways, closed, or pedestrian over highway bridges.

Task 5I – Scour Monitoring Inspection – This can be done after highwater or flooding events, such as submerging the bridge or reaching the bottom of the superstructure to determine the extent of foundation undermining. It can be scheduled on as needed basis.