

Scope of Services for Performing Load Rating of Bridges (PID 121600)

Project Overview:

The required services include:

- Create new system models of bridges using the AASHTO Bridge Rating program (BrR) (BrR version to be confirmed by ODOT) to the most current loading conditions; a list of bridges will be provided.
- The services shall also include acquisition and review of all related bridge plans, inventory information and the most current bridge inspection reports.

The load rating analyses shall be in accordance with State and Federal requirements and the AASHTO Manual of Bridge Evaluation.

Acquisition & Review of Data Files Collection:

ODOT will provide access to bridge plans, inventory data, inspection reports and any other information available for each bridge.

The consultant shall be required to examine ODOT's bridge drawings for the structures' design and repair/rehabilitation plans. Where the construction plans are non-existent or incomplete, the consultant shall acquire the necessary information from various ODOT resources, such as, but not limited to electronic and paper files; on-line inventory and inspection information; aperture cards; microfilm or microfiche; on-line archived ODOT Standard Drawings; request to the District Bridge Engineers and on-site measurements and observations.

Load Ratings:

The consultant shall be required to update the bridge rating files to the most current deadload and inspection conditions of the bridges prior to performing the load ratings.

The consultant shall perform the load ratings using the AASHTO Load and Resistance Factor Rating (LRFR) method for AASHTO HL93 loading (or LFR method for AASHTO HS20 loading if LRFR method requires posting of the bridge) at inventory and operating rating levels and all Ohio Legal Loads 2F1, 3F1, and 5C1; AASHTO Type 3, 3S2, 3-3, SU4, SU5, SU6 and SU7; and FAST Act Emergency Vehicles EV2 and EV3, also permit loads PL 60T & PL 65T (Ohio Legal Loads as given in the ODOT Bridge Design Manual, Section 900) at legal load rating level as per the AASHTO Manual of Bridge Evaluation, 3rd Edition and all of its interims. The bridge rating model shall be complete, error free and prepared as per ODOT formatting guidelines and QC/QA policy.

Load rating tasks may include analysis for complex bridges (Level 3 Design Elements). Midas Civil program will be ODOT's preferred 3D finite element program to be used. Pre-authorization is needed for any Midas 3D analysis. OSE and consultant project manager will communicate and make the decision together. For complex bridge for which Midas 3D analysis will be required, an Excel format load rating tool or separate single line girder BrR model for one or more controlling beam lines shall also be included in the load rating submittal for ODOT future permit analysis use.

Project Deliverables:

Deliverables will be submitted to the ODOT Office of Structural Engineering as follows:

1. An error-free, working, electronic copy of the database of all updated bridge files compatible with the ODOT specified version of AASHTO BrR program.
2. An electronic copy of each bridge's data files as exported from BrR in XML format.
3. Electronic copies of each structure's final load rating summary in "PDF" format.
4. Load rating summary form (BR100) in Excel and PDF format signed and sealed by an Ohio registered Professional engineer.

5. All data and dimensions obtained from field reviews (if field work is performed) along with digital photos of the bridges.
6. Immediate notification to ODOT OSE for any structure when it is determined that posting for reduced load capacity will be required.
7. A master Microsoft Excel spreadsheet containing all the information included in the individual summary reports.
8. Electronic (PDF) copies of the bridge plans used in creating bridge data models.

The information provided in the load rating summaries shall conform to the ODOT BR100. The rating results, in particular, must include the following: inventory and operating load rating for AASHTO LRFD HL93 loading (or AASHTO LFR HS20 loading); the rating factors of all Ohio Legal Loads 2F1, 3F1, 5C1, Type 3, 3S2, 3-3, SU4, SU5, SU6, SU7, EV2 & EV3, also permit loads PL 60T & PL 65T as per ODOT Bridge Design Manual Section 900; rating factors for all loads at the described rating levels and; the controlling legal load rating factor.

Each load rating summary shall be signed & stamped by an Ohio licensed professional engineer and shall include the full name and the Ohio PE Registration number.

Minimum Requirements:

The professional engineers stamping the load rating shall be proficient in load rating, in the use of BrR program and familiar with the load rating of the bridge performed.