



OHIO DEPARTMENT OF TRANSPORTATION

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In-Service Bridge Inspection Program Managers and Inspectors,

Bridge Inspectors are transitioning from the current Bridge Management System (BMS) and its various user interfaces to the Structure Management System (SMS). This transition will require a learning curve. The purpose of this document is to communicate the anticipated time difference so Public and Private Entities can plan how to phase in the transition after Go-Live. Note that SMS is scheduled to Go-Live the week of May 12, 2014.

The estimates are based on training classes, discussions with FHWA and inspectors who have experienced similar transitions in other States. The test site (<https://smstest.transportation.ohio.gov/login.aspx>) should be used to not only get more familiar with the new format but also to refine and get a better understanding for projected resource allocations.

All bridges will need to transition to SMS and a smaller number of bridges will require Element Level Inspection data. The structures that require Element Level data are bridges that meet the Federal >20-ft clear-span definition (NBIS) and carry mainline National Highway System (NHS) vehicular traffic. Maps of NHS routes per District are available within the Division of Planning in the Office of Technical Services for reference:

<http://www.dot.state.oh.us/Divisions/Planning/TechServ/TIM/Pages/Expanded-NHS.aspx>

Element Level data involves much more data (inventory and inspection) at a more granular level. The State must begin Element Level data collection before October 1, 2014 and complete by the second regularly scheduled inspection after October 1, 2014 i.e. before December 31, 2016.

Entities must consider how to phase in the SMS and Element Level Inspections. The following sections are grouped into “**Steps**” in such a way that staff can choose to step in smaller phases, or all at once. Note that Step 1 is required for all bridges, Step 2 and 3 are required for Element Level inspections and Step 4 is not required.

- Step 1: Continue coding Condition Rating data only
- Step 2: Continue coding Condition Rating data and adding Total Quantity data
- Step 3: Collect Element Level Inspection data including Total Quantity data
- Step 4: Collect or Download Complementary Activities

Step 1: Continue coding Condition Rating data only

Time Increase – First Year: +5-50% depending on baseline*, condition of bridge and users' comfort with new technology
Second Year: +0-25% depending on frequency of use
Third Year: +0%

Report Activities

1. This will require typing comments or, for comments in BMS, copy/pasting/editing comments from the bottom of each form in to the appropriate element box
2. Correct the mapping issues between BMS and SMS because of the Units from Element Level
3. Update the inventory to appropriately display the components you need to code

Consider modifying the deliverable to only report in the SMS (comments, photos, file upload etc.). The duplicated efforts, SMS and an In-Depth PDF report, may be redundant.

**baseline –The baseline is the duration of time it currently takes you or your staff to inspect a bridge. If your current practice is to perform systemic detailed inspections complete with access equipment, photos when warranted, quantitative comments, judiciously applied hands-on inspections or sounding techniques then the additional time required will be closer to 30% for collecting element level data. If your current practice is cursory in nature and element level data is a foreign concept then the additional time will be closer to 150% on average.*

Step 2: Continue coding Condition Rating data and adding Total Quantity data

Time Increase - First Year: +5 -50% depending on baseline, structure type, structure condition available plans and users' comfort with new technology
Second Year: +0-5% depending on frequency of use and corrections required
Third Year: +0%

Report Activities

1. This will require typing comments or, for comments in BMS, copy/pasting/editing comments from the bottom of each form in to the appropriate element box
2. Correct the mapping issues between BMS and SMS because of the Units from Element Level
3. Update the inventory to appropriately display the components you need to code
4. Add quantities to the Total Quantity box directly

AASHTO developed the Manual for collecting Element Level data. A frequently asked question from inspectors is how *exact* should the Total Quantities Be? The following excerpt is from AASHTO Manual of Bridge Evaluation 4.8.1.1 “Measurements are to be made only with sufficient precision to serve the purpose for which they are intended. Unnecessarily precise measurements lead to a waste of time and a false sense of value from the derived results.”

In light of the MBE the following are targets for the Total Quantity values for the first Inspection Cycle. It is understood that these will be refined in subsequent inspection cycles:

- Units Coded **EACH (EA)** – All **bold** box items must be exact, other non-bold boxes may be within a tolerance of 5%
- Units Coded **LINEAR FEET (LF)** – Within a tolerance of 5%
- Units Coded **SQUARE FEET (SF)** – Within a tolerance of 5%

Step 3: Collect Element Level Inspection data including Total Quantity data

Time Increase - First Year: +30% - 150% depending on your baseline, condition
 Second Year: +10-50% depending on frequency of use and
 corrections required
 Third Year: +5-25%

Report Activities

1. Update the inventory to appropriately display the components you need to code
2. Add quantities to the Total Quantity box directly
3. Complete the Quantities within each appropriate Condition State

In light of the AASHTO MBE 4.8.1.1 the following are targets for the Condition State Quantity values. It is understood that these will be refined in subsequent inspection cycles as well:

CS 1 Quantities within a tolerance of 15%

CS2 Quantities within a tolerance of 10%

CS3 Quantities within a tolerance of 5%

CS4 Quantities within a tolerance of 1%

Step 4: Collect or Download Complementary Activities

(Step 4 is not yet required but it is recommended)

Report Activities

1. Maintenance Needs +0-10% additional time as compared with BMRI
2. 4 Standard Identifier Photos with Elevation set as Default and Condition based Photos per inspection report +10-50% compared to current practice.
3. Upload Files/Plans Varies greatly depending on the number and size of files