

DATE: March 1, 2024
 TO: Highway Structures Information System (HSIS) Users
 FROM: DTSD – Bureau of Structures
 SUBJECT: **February 2024 HSIS update**

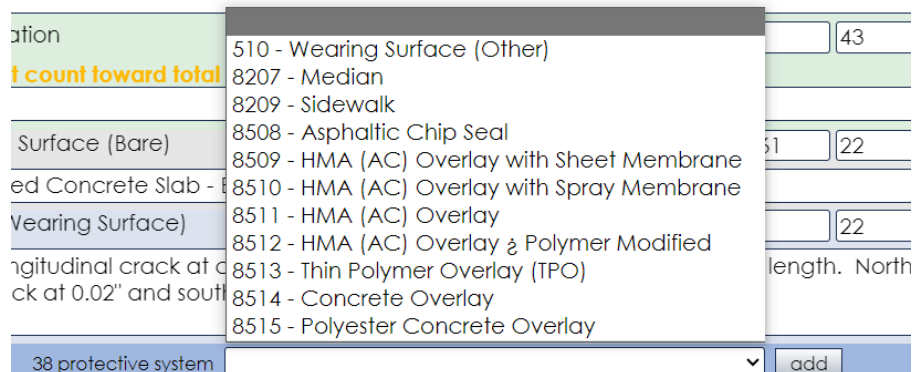
A new version of HSIS was released on 2/27/2024. The following is a list of some of the enhancements added and bugs fixed in this release. This is not an exhaustive list.

This HSIS update contains many changes related to the SNBI. If you believe something is not working correctly, if you cannot enter something you think you should be able to, or you have questions on where to find something, please contact me.

If you discover any bugs or have suggestions for enhancements, please email ryan.bowers@dot.wi.gov. If you do find a bug, please provide as much information as possible about what structure you were working on, what browser you used, if you were using a mobile device or not, items you were editing or clicking on prior to the bug occurring, etc. The more information you provide, the better chance we have at replicating the issue, determining the cause, and fixing it. Any screenshots or videos you can take are helpful.

Enhancements

- 1) New steel cross girder elements were added for use in inspections. These are 8102 Steel cross girder – closed web/box girder and 8107 steel cross girder – open girder/beam.
- 2) New asphalt wearing surface options added for use in inspections. These are 8508 asphaltic chip seal, 8509 HMA (AC) overlay with sheet membrane, and 8510 HMA (AC) overlay with spray membrane. 8512 was changed from AC overlay with membrane to HMA (AC) overlay – polymer modified.
- 3) The sidewalk and median assessments are no longer to be used. They have been replaced with elements 8207 Median and 8209 Sidewalk. These elements are added via the protective surface dropdown for decks and slabs.



The screenshot shows a web form with a dropdown menu open. The dropdown is titled 'Protective system' and lists the following options: 510 - Wearing Surface (Other), 8207 - Median, 8209 - Sidewalk, 8508 - Asphaltic Chip Seal, 8509 - HMA (AC) Overlay with Sheet Membrane, 8510 - HMA (AC) Overlay with Spray Membrane, 8511 - HMA (AC) Overlay, 8512 - HMA (AC) Overlay & Polymer Modified, 8513 - Thin Polymer Overlay (TPO), 8514 - Concrete Overlay, and 8515 - Polyester Concrete Overlay. The '8207 - Median' and '8209 - Sidewalk' options are highlighted in yellow. To the right of the dropdown, there are input fields with values like '43', '22', and '22'. At the bottom of the dropdown, there is a button labeled 'add'.

Protective system dropdown displaying 8207 Median and 8209 Sidewalk.

- 4) Defect 7000 Damage was added for use during inspections.
- 5) Text descriptions in HSIS for reinforced concrete cracking and prestressed concrete cracking defect condition states was updated.
- 6) Additional steel elements are now able to have a protective system added. Some examples are shown in the image below.

The screenshot shows a list of bridge elements in the HSIS system. Each element has a dropdown menu for selecting a 'protective system' and an 'add' button to add a new one. The elements listed are:

- 102 Steel Closed Web / Box Girder**: LF 2, =Σ 2
- 8107 Steel Cross Girder - Open Girder/Beam**: LF 0, =Σ
- 113 Steel Stringer**: LF 0, =Σ

Steel protective system is available for more elements.

- 7) Extended and reduced interval criteria were updated in HSIS to reflect NBIS requirements.
- 8) A “begin date” field was added for inspections, and the existing “date” field was renamed to “end date”. A “begin date” is required to create an inspection. An “end date” is not required to create the inspection, is required to complete the inspection, and can be entered at inspection creation if known. The same date can be entered for begin and end date.

The screenshot shows the 'Inspection' form in the HSIS system. It includes a 'Cover photo' field with a bridge image, 'Inspection type' and 'Activity type' checkboxes, and 'Begin date' and 'End date' fields. The 'Inspection type' section includes options like 'Initial / inventory', 'Routine (due Sep 2024)', 'Damage', 'In- depth', 'NSTM (arm's length)', 'Special', and 'UW- dive'. The 'Activity type' section includes options like 'Critical finding', 'Deck evaluation', 'Load posted verification (dt2122)', 'Scour plan of action', 'Service', 'SIA review (due Sep 2024)', 'SNBI', 'Structural review', 'UW- profile (due Sep 2024)', and 'Vertical clearance measured'. The 'Begin date' and 'End date' fields are both set to 'mm/dd/yyyy'.

Begin data and end date fields displayed during inspection creation.

- 9) For a new bridge that does not have a routine inspection in HSIS, the “initial / inventory” inspection type is automatically selected when “routine” is checked. For an initial inspection done after rehabilitation to a bridge, routine is not automatically selected. A routine inspection is not required to be done with the initial inspection after a rehabilitation project. For more information on inspection types, please refer to the structure inspection manual:

<https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/strct/inspection-manual.aspx>

- 10) Some tabs now have an option to group together data that is the same for multiple spans, substructure units, and other items. This results in the data field being displayed only once when it is the same for each unit, simplifying data entry or review. There is a button at the bottom of the screen, above the save button, to click to group/ungroup items.

The screenshot shows the 'Inspection' tab with a menu bar including Edit, History, Interval, Structure Information, Elements, Assessments, Condition Ratings, Notes/Requirements, Documents/Images, Maintenance, and SNBI. The main content area displays two identical forms side-by-side. Each form has a 'Span material and type' section with fields for Number, Wearing surface (Concrete - low slump (C04)), Deck protective system (Coating - silane/siloxane (C02)), Deck reinforcing protective system (None (0)), Deck stay-in-place forms, Span protective system (Unknown (U)), and Deck material and type (Reinforced concrete - cast-in-place (C01)). Below this is a 'Substructure material and type' section with fields for Abutment (Cardinal), Substructure material, Substructure protective system, and Foundation protective system. To the right of these forms are 'Geometry' fields for NBIS bridge length, Curved bridge (Not curved (N)), and Maximum bridge height. At the bottom, there are 'Inspection Requirements' (NSTM inspection required) and 'Appraisal' (Approach roadway alignment) sections.

Data for each span and substructure is displayed separately.

The screenshot shows the 'Inspection' tab with the same menu bar as the previous image. The main content area displays a single form. The 'Span material and type' section is identical to the previous form. The 'Substructure material and type' section is also identical. However, the 'Geometry' fields (NBIS bridge length, Curved bridge, Maximum bridge height) are now grouped together in a single box. The 'Inspection Requirements' and 'Appraisal' sections are also present at the bottom.

“Same” items are grouped together reducing the number of fields displayed.

11) All condition ratings are now located on a new tab named “condition ratings”.

Item	File	New
Deck Condition Rating	C.01	6 Satisfactory (6) ▼
Superstructure Condition Rating	C.02	5 Fair (5) ▼
Substructure Condition Rating	C.03	6 Satisfactory (6) ▼
Culvert Condition Rating	C.04	N N/A (Nbi) (N) ▼
Bridge Railings Condition Rating	C.05	▼
Bridge Railing Transitions Condition Rating	C.06	▼
Bridge Bearings Condition Rating	C.07	▼
Bridge Joints Condition Rating	C.08	▼
Channel Condition Rating	C.09	▼
Channel Protection Condition Rating	C.10	▼
Scour Condition Rating	C.11	▼
NSTM Inspection Condition	C.14	
Underwater Inspection Condition	C.15	
Channel	N	N/A (Nbi) (N) ▼
Waterway	N	Not Applicable (N) ▼
Approach		Good- No speed reduction (8) ▼

New condition ratings tab.

12) Additional updates, such as the addition of new data fields and inspection types, were made to address NBIS and SNBI requirements. The new data fields can be found on the Condition Ratings and SNBI tabs in an inspection, and various sub-tabs of the Bridge tab.

Bug Fixes

The following bugs were fixed with this version. Additional bugs not listed below were also fixed.

- 1) “Standard” was not saving when selected from the “approach guardrail adequacy” dropdown.
- 2) New options were added to the span configuration dropdown in November 2023, but these options were not returning results when used with “assist”.
- 3) Bugs related to the new span types kept inspectors from being able to submit inspections of certain structure types.
- 4) User-created columnsets did not always work.