Questions and Answers on VDOT's Supplement to the AASHTO Manual for Bridge Element Inspection

No.	Date Received	Element No.	Defect No.	Element/Defect Description	page # in manual	question/comment	response	response date
1	2/26/2016	830	N/A	MSE Wall	V 26	Is ADE 830 – MSE Wall to be used in conjunction with NBE 218 – Other Abutment (there is no MSE Wall abutment in the AASHTO Manual)? It may be more appropriate to use ADE 830 just for the wingwalls (50' maximum).	The MSE wall, element 830, is intended to replace both the old CoRe elements 444 (MSE - Abutments) and 445 (MSE - Wingwall/Retaining Wall); and should not be used in lieu of or as a sub-element of 218 - Other Abutment or any other abutment element. The quantity for the MSE wall will include the portion under and parallel to the bridge and have similar break points as the wings defined in the Substructure Elements, Abutments - General section on page 64 of the manual - the 50' maximum length of wing will be measured from the controlling break point. The abutment component (for the purposes of the NBE) will include the stub or integral abutment on piles.	2/29/2016
2	2/29/2016	N/A	N/A	N/A	V 49	Under the "Totals Reported" heading for CS2, the example reads "CS2 spalling controls over CS3 cracking". In order for spalling to control over cracking, these have to be in the same condition state, so both have to be CS2 to make the statement true	The error was verified and recommend updating the manual	2/29/2016
3	2/29/2016	65	N/A	Other Slab	V 75, 79	How should we code aluminum or steel deck arches with fill?	Under Review	
4	2/29/2016	824	N/A	Reinf. Concrete WW	V 64	If we have integral (monolithic) wingwalls should we code the appropriate wingwall element? The abutment quantity captures the condition of the wingwalls per the AASHTO Manual.	Abutments with monolithic (integral) wingwalls should have the wingwall length added to the abutment quantity per the AASHTO Manual **AND** have the number of wingwalls added to each respective ADE for the wingwall element. The reason for added the ADE wingwall element was through discussions with the maintenance personnel and their need to capture the number of wingwalls (regardless of whether or not they are integral).	3/4/2016
5	2/17/2016	824	N/A	Reinf. Concrete WW	V 64	Quantity of Abutments with Integral Wingwalls include the wings (see ex. Below). Are wingwall defects added to Abutment element (w/ integral wings), or Wingwall ADE?	See Item 4 above. In addition, wingwall defects for monolithic wingwalls will be captured in both the NBE abutment element and the ADE wingwall element.	3/4/2016
6	2/22/2016	see question	N/A	see question	N/A	Is VDOT planning to collect BME's 320 – Prestressed Concrete Approach Slab, 321 – Reinforced Concrete Approach Slab, or 520 – Concrete Reinforcing Steel Protective System? They are not listed in the table on Page 3, so please confirm the Department is planning to collect them.	Elements 320, 321, and 520 are AASHTO BME's that will not be required to be submitted to FHWA; however, these elements will be collected by VDOT. The table on Page 3 lists the elements that are required to be submitted to FHWA. The manual will be clarified during the next update.	3/4/2016

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7	2/22/2016	N/A	N/A	N/A	V 50 thru 54	Do the Agency Defined Defects apply only to the VDOT Agency Defined Elements? I believe this is correct based on the relationships provided in the table on Page 8 and the language in the AASHTO manual that the NBE's can't be modified. However, the Defect Hierarchy beginning on Page 50 has caused some confusion. I assume that where the VDOT Defects are included in these lists, they only apply to the VDOT defects. Please confirm this is correct.	Yes, the Agency Defined Defects apply only to the VDOT Agency Defined Elements (ADEs). The defect hierarchy beginning on page 50 is intended to assist the inspector in determining which defect may take precedence over another when the condition states of two different defects for the same Element are the same. This will be used for VDOT defects where appropriate and AASHTO defects where appropriate. As stated previously, inspectors must use their own judgment and use this only as a guide. The manual will be clarified during the next update.	3/4/2016
8	2/22/2016	N/A	6504	Wheel Track Rutting (Asphalt Plug Joint)	V 50	In the Defect Hierarchy on Page 50, there is a defect 6504 – Wheel Track Rutting (Asphaltic Plug Joint). I can't find this defect listed anywhere else. Has this been eliminated?	The plug joint elements (841 and 842) have been removed for VDOT's ADEs; along with the removal of these items, defect 6504 should have also been removed and will be removed when the manual is updated.	3/4/2016
9	2/17/2016	515	N/A	Steel Protective Coating - Bearings	N/A	Bearing device has protective coat in SF unit, how to calculate the area for bearing device?	It should be based on a calculated surface area of the painted/coated surface of the bearing. A quick estimate of surface area should be made for each type of bearing for each bridge; a range between 4 to 8 SF has been found to be reasonable depending on the height.	3/4/2016
10	2/17/2016	various	N/A	Approach Slabs	N/A	Approach slab's unit is SF, could we use curb to curb width multiply by say 20' long without referring to the plan?	It is recommended to use the plan or field measured quantities; as there are many bridges with approach slabs only covering the travel lanes and are not full width.	3/4/2016
11	2/17/2016	N/A	N/A	N/A	N/A	Do we have ADE element for stay in place form?	No; however, per the AASHTO Manual for Bridge Element Inspection "… deck top and bottom surfaces that are not visible shall be assessed based on the available surface area ... or indicators in the materials covering the surfaces".	3/4/2016
12	2/17/2016	various	N/A	Wing Walls	V 18 thru 25	The unit for Wingwall is Ea. Is it correct?	Yes.	3/4/2016
13	2/17/2016	N/A	N/A	N/A	V 75, 79	For Bebo Arch bridges, do we use Core Element 144?	Under Review	
14	2/17/2016	N/A	various	various	N/A	There is no requirement to collect defect now. So can we delete the defects that was converted by the system? We are updating BrM from the consultant NBE summary sheet that don't have defect items.	Yes, defects that have been converted and provided may be deleted. However, it is important to note that the elements themselves do not have condition states associated with them; and defects must be considered to place an appropriate quantity in each condition state for each element. Please keep in mind that defects will be required during subsequent inspection cycles.	3/4/2016
15	2/17/2016	N/A	7000	Damage Defect	N/A	The damage defect (7,000). Is this similar to the Coating? where the quantity does not need to add up to the parent.	Correct, when the damage defect is coded the specific damage caused by the impact will be captured in each respective condition state under the appropriate defect entry (i.e. distortion, cracking, spall). As such, the damage defect quantity does not feed into the parent element condition states; however, the defect caused by the damage will.	3/21/2016
16	2/23/2016	various	6000	Scour Defect	various	In BrM if you have scour under culvert and scour under channel do you use both or which one do you use?	You would use both.	3/4/2016

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17	3/1/2016	various	6000	Scour Defect	N/A	Additionally, the question was asked in Fredericksburg if you have scour at the culvert inlet or outlet along the opening (transverse to the length of barrel) how do you represent this since the element is LF. Is the LF measurement along the length of culvert or along the length of the opening (width)?	The quanitities and element orientation for the defects must match the element; in this case the defect quantity would be measured along the length of the culvert.	3/4/2016
18	2/23/2016	515	N/A	Steel Protective Coating	N/A	Should BME 515 be coded for corrosion resistant reinforcing steel such as MMFX, solid stainless and stainless clad? Are you aware if VDOT has used any galvanized rebar in the past?	BME 515 should not be used for reinforcing steel; it should only be used for steel NBEs, BMEs, and ADEs. See also Item 26 below.	3/4/2016
19	2/23/2016	515	N/A	Steel Protective Coating	N/A	When we had the class for BrM element inspection 18 months ago, someone giving instruction on paint elements said we would get a chart (like the sample in participant workbook) to go by on all beam and maybe girder sizes for calculating surface area. Did anything ever developed on that.	AISC has a section detailing surface areas and box areas for W shaped beams (case A gives surface area without the top flange included) which may be multiplied by the beam length to get surface area. For built-up members, one would have to calculate the painted/coated surface. Further consideration will be given to providing future tools for calculating these quantities.	3/4/2016
20	2/24/2016	515	N/A	Steel Protective Coating	N/A	If there is a galvanized W-beam in front of a painted steel railing is the square foot for coating counted for both? The assumption would be that square foot of coating would be needed for both (because we have W-beam in front of concrete rails and square foot of coating would be coded there).	Yes, the rail system would have square footage for both included in BME 515; however, the quantity for metal railing would only be the length x 2 sides and would not be doubled on each side for the original rail + the w-beam rail (as this example would be considered a metal bridge railing system).	3/21/2016
21	2/25/2016	811	N/A	Beam/Girder End	V 14	The new BrM will not allow beam ends for the girders (107) and stringers (113); it will only take the element (811) one time. I understand that this is to determine if the girders are deteriorating faster at the ends. However, often stringers also deteriorate at a different rate at the ends than along their length. Can this element be used for stringers or just girders? Since BrM did not let him input 811 twice I guess it can only be entered once per bridge?	At this time, element 811 is intended to only be used for beams/girder ends.	3/21/2016
22	2/27/2016	811	N/A	Beam/Girder End	N/A	I've looked through the drop down and the two manuals and can't find the sub-element, though, as an element, sub-element or defect	The ADE for beam ends is 811. At this time this is not a sub-element to other NBEs, BMEs or ADEs; and is intended to stand alone to allow for an assessment of beam ends (for both steel and concrete beams). Additionally, the beam element quantities will still capture the last 5 feet at each beam end. The BrM software will be reviewed for consistency with the VDOT manual.	3/21/2016
23	3/3/2016	886	N/A	Beam Girder End Protective Coating	V 46	886 Beam Girder End Protective Coating says unit of measure is Each in book but says square foot in software. Which one is right?	The beam end units (ADE 886) should be EA per the VDOT manual. The BrM software will be reviewed for consistency with the VDOT manual.	3/21/2016
24	3/3/2016	854	N/A	Channel	V 44	854 Channel is to be used for all channels or just channels with stream control devices?	ADE 854 should be used for all channels.	3/4/2016

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25	3/3/2016	515	N/A	Steel Protective Coating - Bearings	A B-12	When using 515 Steel Protective Coating for Bearings, there is an example in the MBEI on Page B-12 that says estimate surface of each bearing as 12 SF. Is this correct?	A quick estimate of surface area should be made for each type of bearing for each bridge; a range between 4 to 8 SF has been found to be reasonable depending on the height. In the example, a large truss bearing may very well have an estimated 12 SF of surface area per bearing. See also Item 18 above.	3/4/2016
26	3/3/2016	520	N/A	Concrete Reinforcing Steel Protective System	A 3-179	Is 520 Concrete Reinforcing Steel Protective System to be used only for the Deck?	Under Review	
27	3/2/2016	520	N/A	Concrete Reinforcing Steel Protective System	A 3-179	What reinforcing steel protective systems will be captured? Element Commentary states "may include rebar coatings, cathodic protection, or sother similar protection methods."	Under Review	
28	3/2/2016	854	N/A	Channel	V 53	Scour is not included in the Defect Hierarchy for Channel.	Recommend updating the manual.	3/4/2016
29	3/2/2016	N/A	various	various	various	Need a definition of 'tolerable limits' for various defects (i.e. settlement, scour)	Under Review	
30	3/2/2016	N/A	6000	Scour Defect	various	Should scour be at the top of the hierarchy; be an element by itself; or be treated similar to the Damage Defect - 7000?	The scour defect at the top of the hierarchy is acceptable for assessment and maintenance purposes. Scour that has been arrested or deemed tolerable is placed in CS2; between tolerable and critical in CS3; and critical in CS4. In most, if not all cases, the scour must be addressed prior to repairing surface concrete; and we must remember that defects (especially in the case of overlapping defects) are used to assign an element's condition state.	3/21/2016
31	3/1/2016	801	N/A	Sidewalk	V 9	The software has ADE 801, Sidewalk, units as LF; however, the VDOT manual shows it as SF.	ADE 801 units have been changed in the software to SF to match the VDOT manual and the needs of the maintenance section.	3/4/2016
32	3/2/2016	39	N/A	PSC Slab	various	NBE 39 – PSC Slab should be deleted from BrM	There is not a NBE Element 39 in the AASHTO Manual for Bridge Element Inspection, so it should be deleted from the BrM.	3/21/2016
33	3/2/2016	103	N/A	Aluminum Box Girder	various	NBE 103 – Aluminum Box Girder should be deleted from BrM	There is not a NBE Element 103 in the AASHTO Manual for Bridge Element Inspection, so it should be deleted from the BrM.	3/21/2016
34	3/2/2016		7125	Steel Thru Truss excl Bot	various	Defect 7125 – Steel Thru Truss excl Bot should be deleted from BrM	There is not a defect 7125 in the AASHTO Manual for Bridge Element Inspection or the VDOT Supplement, so it should be deleted from the BrM.	3/21/2016
35	3/2/2016	801	N/A	various	various	ADE 801 – Sidewalk units are LF in BrM and SF in the VDOT Manual	See Item 31 above.	3/4/2016
36	3/2/2016	886	N/A	various	various	ADE 886/886 – Beam End Protective Coating units are SF in BrM and EA in the VDOT Manual	See Item 23 above.	3/21/2016
37	3/7/2016	various	1080	Delamination/Spall/Patched Area	A D2.3	Do you want honeycomb coded as a spall or as abrasion/wear?	Honeycomb should be coded as Defect 1080, Delamintaion/Spall/Patched Area.	3/21/2016
38	3/7/2016	various	various	various	various	Do you want cracks with leaching and/or rust stains coded as efflorescence/rust stains or cracks? Does it depend on the size of cracks versus the amount of eff/rs and vice versa?	It would depend on the size of crack versus the amount of efflorescence. Whichever warrants the higher condition state should be coded. If they both warrant the same condition state, then the Defect Hierarchy beginning on page 50 of the VDOT Supplement should be used.	3/21/2016

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39	3/7/2016	510	various	Wearing Surface	V 79	I can't find Wearing Surface 882 or 884 (Protected Asphalt or Rigid Overlay), only Add Protective Systems, 510, Wearing Surfaces, with no specificity of type or material.	The wearing surface ADEs (elements 881 thru 885) have been removed from the VDOT Supplement. Wearing Surfaces will be coded using Element 510 to record the condition of the wearing surface plus Federal Item 108 to record the type of wearing surface.	3/21/2016
40	3/8/2016	330 & 331	various	Bridge Railing	V 72	The consultant inspection for this bridge coded the railing as 330 - Metal Bridge Railing and 331 - Reinforced Concrete Bridge Railing. I've been told by some that they are coding this as 333 – Other Bridge Railing. Elem 333 is what we used in PONTIS. The manual isn't clear as how to handle this.	Correct. Element 333 is no longer used for combination or miscellaneous bridge railing. The combination railing for this example should be coded as both 330 and 331. See page 72 of the VDOT Supplement for an example.	3/21/2016
41	3/16/2016	845	2399	Joints	V 39	The VA Supplement to the AASHTO Manual for Bridge Element lists ADE 845, Joint Effectiveness. This element defines the effectiveness of expansion joints. There are two condition states for this element. Since there is a Joint Effectiveness defect (with the same two condition states as 845 Joint Eff.) that is used with the Joint BMEs, are we to list both?	The AASTHO BMEs for Joints (elements 300 thru 306) should not have defect 2399, Joint Effectiveness, as a defect. Defect 2399 is only to be used for Virginia's ADE 845, Joint Effectiveness. Both the joint BME (LF) and ADE (Ea) should be collected. The ADE is intended to identity how many joints a structure has and whether or not it is leaking; the BME collects the total LF of joint on a structure and the condition of each LF of joint, but one cannot determine how many joints are affected.	3/21/2016
42	3/16/2016	515	N/A	Steel Protective Coating	A 3-177	Should BME 515 – Steel Protective Coating be used for coated metal culverts	Yes; however, it is recommended to only use Defect 3440, Effectiveness, for steel culvert coatings.	3/21/2016
43	3/18/2016	various	N/A	various	various	If you have many lines of cracking the linear feet can add up to greater than the abutment height or width. However the limit is the length. How do you input this information and adequately described the problems. Similar issues with linear footage/square footage on both sides of a pier.	Under Review	