

## 2012 Forum – Bridge Inspection Clarifications

### GENERAL/MISCELLANEOUS

1. The NJDOT should host more National Highway Institute (NHI) training courses. It has become very difficult to attend certain courses, especially the Fracture Critical Inspection course. Most of the NHI courses in other states are private and do not allow “public” enrollment. When a Consultant hosts a course, and it gets posted on the NHI site, it is generally too late to enroll at that time.

The allotted training budget in its entirety is used every fiscal year. The Bridge Inspection Refresher Course is hosted every year, and other courses are rotated in as deemed appropriate by the NJDOT. Preference for enrollment in NHI training hosted by NJDOT is given to those Consultants who have active inspection projects with the State. NHI courses may be hosted by any Consultant firm at any time to meet current requirements.

2. A Bridge Owner must be notified when a structure needs to be taken out (upgraded) of Structurally Deficient (SD) or Functionally Obsolete (FO) classification due to “work done”. However, is there a need to inform the owner, if the structure falls (downgraded) into a SD or FO, due to worsening condition of elements?

If a structure is downgraded into SD and/or FO classification, then it is to be noted in the bridge survey report within the Conclusions and Recommendations section. There is no need to notify the Owner if the structure is downgraded due to deterioration or current condition (other than by noting this in the inspection report).

3. Can the Project Schedule be modified such that we can sort bridges by town, or by dates, or by bridge numbers, with simultaneous link changes in progress report?

The next version of the Project Schedule document will be able to be sorted by date or bridge number.

4. What is the proper procedure when the approved inspection schedule needs to be adjusted?

If a Consultant must deviate from the approved Project Schedule due to unforeseen circumstances, they must e-mail the State Project Manager prior to the change (as per the Project Schedule Approval Letter). It is important that NJDOT is aware of where Consultants are working daily in case any issues arise.

Note that the “Approved Inspection Date” field of the Project Schedule *is not* to be changed once it has been approved at the beginning of the project.

5. When recommendations/improvements are necessary, sometimes an FHWA factor is used and sometimes one is not for the same type of work. Also, for the same type of deficiencies, different recommendations are made, i.e. substandard deck geometry – recommendations have been made for both replacing the structure and widening it. Are there any precise guidelines provided anywhere when improvements need to be recommended?

Applying the FHWA length expansion factor may or may not be possible due to existing field conditions (limited space in urban area, etc.). Due to the unique conditions of each structure, there is no specific guidance as to what type of “major work” to recommend. These decisions are made by the engineer performing the evaluation and may be discussed case-by-case with the State Project Manager if needed.

6. When creating a bridge inspection cost proposal, the MS Access program many times does not print the photographs. Each report needs to be individually printed and compiled. Can NJDOT eliminate this deficiency?

The MS Access proposal program is in the process of being updated to address several deficiencies. The photograph issue is one deficiency that will be corrected in the next release.

7. When creating a bridge inspection cost proposal in the MS Access Program, in the Inspection Data tab, Inspections: Contract Intent – Inspection Type and Prime/Sub once selected should remain same to see the next Record. Right now it goes back to blank. This is very time consuming when attempting to review any information.

The MS Access proposal program is in the process of being updated to address several deficiencies. This issue is one deficiency that will be corrected in the next release.

8. One combined report is needed that NJDOT recommends for the complete cost proposal. Is it possible to generate a compiled report so we do not need to combine different files i.e.- 1st page is Total of prime, total of subs, total of all on-system, total of all off-system, total by inspection type and totals by bridges for on-system bridges followed by total of off-system bridges? If page numbers are added, it will be helpful while negotiating the contracts so we know which page we are discussing.

The MS Access proposal program is in the process of being updated to address several deficiencies. This issue is one deficiency that will be corrected in the next release.

9. We need more field / mobilization hours to account for all the time lost on Complex, FCM and urban jobs because of the strict Homeland Security notification rules, increasing Coast Guard involvement, the newer and increasing Traffic Operations requirements, the need to locate, contact and coordinate with local police forces, the typical problems dealing with subcontractors and vendors simultaneously, and the increasing amount of night work.

Traffic maintenance and security coordination have become more complicated and time consuming in recent years. Night work is an issue that affects a relatively minor percentage of jobs (railroad bridge inspections, FCM inspections, sign structure inspections, etc.). The need for additional mobilization hours must be discussed and negotiated at the beginning of the project if it is felt that the project mobilization cannot be completed within the regular number of man-hours typically negotiated for this purpose.

10. Can a county set more lenient standards that supersede NJDOT standards for guiderail requirements?

Yes, the County as the Bridge Owner sets its own standards. When a Bridge Owner does not have a standard pertaining to a specific area, then apply the NJDOT standard. This dialogue should occur in the Scope of Work meeting before work begins on the project.

11. We get conflicting guidance from NJDOT for ADT escalation for County Owned bridges. Are there any standards for ADT Escalation for State and County? Typically, Counties do not provide any guidelines, and therefore, 1% per year has been used. Please clarify.

If the County as the Bridge Owner has its own standard then you are to go by that. When a Bridge Owner does not have a standard pertaining to ADT escalation, then apply NJDOT standard of 1% escalation per year.

12. Are Consultants suppose to make a field visit (at no cost) when there is an emergency/major issue/collision damage to a bridge in their contract, noted after over 12 months but before 24 months? When we get a call, we do not have much choice then to oblige, go to field, write new Priority Memorandums, document everything, however, this extra effort is not reflected in CES scoring as a trade-off for some minor misses?

When a Consultant performs an emergency (or similar) type of inspection, they should be fairly compensated for the work performed. If extra work is performed between 1<sup>st</sup> and 2<sup>nd</sup> cycles, then the extra work should be discussed in the 2<sup>nd</sup> Cycle Scope of Work meeting to determine the best way to include the costs in the 2<sup>nd</sup> Cycle cost proposal.

13. Can the Department find a way to screen inappropriate (Out of Scope) requests to the Consultants? Typically, an NJDOT Project Manager asks his engineer to get some info of a particular bridge or look into a emergency call from field (Typically, 12 months after our contract), the engineer, instead of making a field visit, sends a e-mail to the Consultant, "Please look into this issue" and then the Consultant spends time to find information or make a field trip, etc. But this extra effort is not considered in CES score. Is there a way the Department can screen this type of "Out of Scope" Service Calls from Department personnel? Again, it is a hard call for us to decline, in fear of affecting CES Score.

Work performed out of scope must be compensated. If extra work is performed between 1<sup>st</sup> and 2<sup>nd</sup> cycles, then the extra work should be discussed in the 2<sup>nd</sup> Cycle Scope of Work meeting to determine the best way to include the costs in the 2<sup>nd</sup> Cycle cost proposal.

NJDOT recommends that Consultants do not perform any out of scope work before first having a discussion with the State Project Manager (or, *if needed*, Manager of Structural Evaluation and Bridge Management) in regards to compensation for the extra work to be completed.

14. Several times, Consultants are asked to resend a PDF report/Word file/Sketch, etc. after a final CDs of all PDF and working files are sent in. We end up spending time to retrieve and send. Why is the information not being taken off the CD that was submitted, or why are they not being uploaded on NJDOT server in a timely manner? It appears that, although, BI contracts are for 12 months, we are obliged to provide any and all services until the contract is assigned to another Consultant (24 months).

Once a Consultant has submitted the final report PDF's and Working Files, they are typically not responsible for re-submitting any of this data (unless there was a mistake in the original submission). If you are requested to provide information on your own time that has already been formally submitted to NJDOT, then please contact the Manager of Structural Evaluation and Bridge Management.

15. There is no structure number posted on a pipe culvert that is less than 5' long. Do we inspect this structure?

If a structure is 5' in length or greater and less than or equal to 20' in length, it is considered to be a "minor bridge". Minor bridges receive a structure number and are inspected as part of a State or County minor bridge inspection project. The inspection cycle for a minor bridge is typically 4 years but can vary. Structures less than 5' in length are not currently inspected under the NJDOT's current policy

## INSPECTION REPORT

16. We have been submitting “Format Reports” during the report submittal phase of each project. After receiving comments on these reports, we occasionally have been requested by the NJDOT Project Manager to revise or add to certain pages of the remaining reports after the Format Reports are approved. There should be general agreement that once the Format Reports are finalized there should be no format comments by the NJDOT Project Manager on the remaining reports.

A Preliminary Report may have different types of comments that were not applicable to any Format Report that was submitted. Additionally, it is possible that the review of Format Reports will not discover every single error. This does not mean the report writer is free to repeat mistakes that were not identified in the Format Reports throughout the remainder of a project.

17. The latest Format Report for a bridge requiring an Interim inspection is more than a letter report. This has now become a down-sized Routine report. We feel that the increased information in the Interim report is redundant when the latest routine bridge inspection report is at the Consultant’s and State’s finger tips. If no consideration is given to going back to a letter report for the interim report, than the typical 3 hours that the State gives the Consultant for the interim report needs to be increased.

The 3 hours is the typical standard for the letter-type interim report (used for agency-owned bridges). The hours for interim reports provided for NJDOT-owned structures are negotiable. The structure itself and the reasons for interim inspection play a role in the number of hours necessary to create the report and may be discussed bridge-by-bridge with the NJDOT Project Manager.

18. How are comments/error/omissions on Format Reports calculated into the cumulative percentage of error/omissions? Are they treated as regular report errors/omission, or not calculated or weighted down since they are Format Reports (since the whole idea of Format Reports is to clarify issues in the beginning)?

The percentage of errors in the CES rating system considers Format Reports to be the same as other reports. The “no resubmission of preliminary reports” standard is affected by whether or not a particular report is considered to be a “Format Report”.

19. We need consistent evaluation of reports by NJDOT. There is a need for NJDOT to set up guidelines so that there is no difference in evaluation of the reports across different reviewers. For example: for preliminary reports, we were asked to sign the reports by one reviewer whereas we were asked NOT to sign the preliminary reports by another reviewer.

Complete consistency of review comments is not possible to attain. The same as it is not possible for different Consultants to write reports exactly the same way, it is likewise not possible for NJDOT to review them all the same. The purpose of this forum is to clarify certain issues in order to help with both report writing and reviews, but it is not possible for all issues of consistency to be addressed in this way. Should you feel that a review consistency issue warrants consideration at a higher level, you should contact the NJDOT Project Manager and bring it to his attention. In the cited example, the current policy is that the preliminary report is to be signed and sealed.

20. Can NJDOT develop a standardized form for Preliminary Report Comments (from State and County bridges) and subsequent Consultants responses, so as to keep a better track of comment resolution? Currently, every PM has his own unique way of sending comments back to the Consultant.

NJDOT has moved into providing report comments back to Consultants as scanned marked-up pages in a PDF. These files are stored and are easily retrievable in the future for comment resolution. Consultants are free to track comment resolution any way that fits their needs, including creating their own standard form for comment resolution if they wish.

21. The previous cycle reports are not usually formatted with the latest template provided by NJDOT and it is very time consuming to format a single report, even for very small changes. Can NJDOT create an MS Word Macro to fix very common and newly added changes to the previous reports?

The NJDOT standard allotted report-writing hours take into consideration generating a report from a blank template. Receiving the previous cycle report substantially reduces the required time even with the formatting changes that are required.

22. Does NJDOT feel as though the report submission process for the NBIS bridges will follow the same process as that of the CoMBIS reporting process with the web-based electronic format in the near future?

The NJDOT is actively moving into the database world. Ultimately it is the NJDOT's intention to have all inspection reports utilize a web-accessed database format, similar to the current CoMBIS interface, but there is no specific timeline for this progression.

23. At a junction of two highways (I-295 north/south and I-195 east/west) there are several ramps (8). How should ramps be designated in an inspection report?

The current policy for designating ramps in the structure name is to indicate what routes the ramp serves to connect. It is also helpful to include the ramp designation indicated on the as-built plans in parenthesis, if available.

Example: "Ramp Connecting I-295 SB to I-195 EB [Ramp C] over Wetlands"

24. Should we provide the statement for downgrading the condition rating from '8' to '7' or '7' to '6'?

A statement is required in the Conclusions and Recommendations "Since the previous inspection..." paragraph to indicate the change and the reason for the change.

25. When Item 59 = '5', Item 60 = '5', and Inventory Ratings = '5', then which of the following statements is correct:

"The overall condition of the structure is fair due to the superstructure, substructure and low inventory ratings"

-OR-

"The overall condition of the structure is fair due to the superstructure and substructure"

The correct statement is "The overall condition of the structure is fair due to superstructure, substructure and low inventory ratings".

26. Can additional information be included in the Conclusions and Recommendations section?

Our goal is to provide a clear and informative bridge report. In an effort to attain this goal, we provide important information in the Conclusions and Recommendations section. This information may emphasize data included elsewhere in the report or may bring attention to special conditions at a bridge. This information is to help NJDOT and successive Consultants make the best inspection and report possible. Also, this information may be required of a Consultant from a liability standpoint.

On many occasions, such data in the Conclusions and Recommendations Section has been voided by the NJDOT Project Manager. We believe that additional information in this section can be included at no harm to review procedures.

It is acceptable practice to include information not required in the bridge report if the Consultant thinks that clarifications of information are necessary. It is also appropriate for report review comments to indicate that such information is not required.

NOTE: Should situations occur as specified above, the additional time spent writing reports to include information deemed extraneous will not be considered as a valid reason for revising contract ceilings to cover cost overruns.

27. In Conclusions and Recommendations, when describing the reasons for any major items rated < '6', is it better to provide the reasons that can only affect the rating (i.e. deck-underside ) or is it necessary to list all components rated '6' or below in the corresponding section (i.e. deck-curbs, sidewalks, fencing, railing, etc.)?

It is only necessary to comment on major items that are rated six or below (Items 58, 59, 60, 61, 62 and/or BA). When describing why these components are rated six or below, only state the major reasons (i.e. for deck, state the deterioration to the top and/or underside of deck rather than curbs, sidewalks, etc.).

28. Per NJDOT's Report Template, Conclusions and Recommendations does not require photograph references (irrespective of the condition rating), please verify. Similarly, "Work Done" photographs are not required to be cross referenced in the Field Notes, please verify.

Report writers should reference photographs in the Conclusions and Recommendations as is appropriate. There is no need to reference "Work Done" photographs in the Field Notes, only in the "Work Done" section of the Structural Data sheet.

29. When a bridge is Functionally Obsolete due to Deck Geometry, how do we know the appropriate widened width to recommend? Does the Deck Geometry need to increase to a coding of '4', or to a coding of '9'? Or are we supposed to recommend to widen the bridge to comply with the current design standards?

There are several factors to consider when determining the appropriate width of the bridge deck to be recommended. Obviously, the minimum widening would need to remove the bridge from the Functionally Obsolete category (Item 68 = '4'). This is often recommended where a small change to the deck geometry can be affected without adding overall width to the structure (for example, reducing the sidewalk width). If the approach roadway is wider than the bridge deck, then it is appropriate to recommend widening to remove the bottleneck that exists. If the bridge is recommended for replacement, then it is appropriate to recommend a deck width meeting current design standards. It is understood that there are many factors that impact the final width of a bridge replacement project and it is necessary to consider these factors if known. For example, if the approach roadway width is restricted due to wetlands, the recommended bridge deck width could consider this restriction.

30. In the current format Conclusions and Recommendations section for bridges without any Priority/Monitoring recommendations, is the following statement required?

“We recommend that the following Emergency/Priority Repairs be made to retard further deterioration, preserve the structural integrity of the bridge, improve safety and extend its useful life:

“None.”

Yes, this statement is to be included to make it obvious that no Priority Repair or Monitoring conditions existed at the time of inspection.

31. Please clarify the format and required items to be filled out on the LRSS if load ratings were NOT performed during the current cycle inspection.

Nearly all sections of the LRSS are to be completed, including the locations for Load Rating Engineer and Load Rating Reviewer “Name” and “Firm”. The Load Rating Engineer “Initial” field will be left blank. The Load Rating Reviewer “N.J. P.E. No.” will be left blank, as well as the date and signature fields and the box for P.E. seal. The statement “No load rating performed this cycle” shall be included either on the signature line or within the P.E. seal box.

Note that the Project Information at the top of the LRSS (Group, Agreement No., Contract ID, and Agree/Mod. No.) relates to the project that included the rating calculations (meaning this information is NOT updated each cycle, only if the structure is re-rated).

32. The LARS LRFD output report margins do not fit on letter-sized (8.5”x11”) paper, is there any way to modify the output reports to make margins comprehensive with inspection report?

The simplest way to insert LARS output into the MS Word inspection report template is as follows:

1. Select and Copy the LARS report output text.
2. Paste the text into the proper location of the MS Word inspection report.
3. Change the text to font “Courier New” (this is a monospaced font that will allow the columns to align properly).
4. Reduce the font size as necessary. For example, a font size of 6.5 will allow the LARS Member Summary Tabular Report to fit within the standard MS Word inspection report template.

33. What is the proper way to include the new LARS ratings into the report (report & appendix)?

Refer to Sample 1 and Sample 2 under the Load Rating heading at:  
<http://www.state.nj.us/transportation/eng/structeval/downloads.shtm>

34. Can a report use photographs interchangeably between the approaches and deck to describe typical conditions on either? (i.e. poor curbs on both approaches and deck, can we use a deck photograph and say “typical on approaches”)?

As long as the same type of defect exists in the bridge and approach element, then a single photograph is acceptable. If the defect varies, such as spalling in the bridge curbs and settlement of the approach curbs, then two pictures would be required (unless both defects are shown in a single photograph).

35. We suggest that more standardized definitions of coding element conditions be used so there is more consistency in evaluating and coding elements. Some states have detailed manuals with written descriptions and photographic examples of various condition codings for each element (NYSDOT for example). Perhaps one of these can be adopted and modified through the NJDOT Design Manual, just as sections of the AASHTO Specifications are.

Photograph examples will only apply for the specific examples shown in the pictures and cannot show all possible situations. Also, a condition code must represent the entire element whereas a photograph can only show a portion of the element. Condition codes are and will remain based on the judgment of the engineer conducting the inspection. Condition codes that are based on the actual field conditions will usually be close enough to the preferred code so that it does not typically cause a problem. Problems with the condition codes are usually the result of the engineer not observing or understanding the implications of deterioration observed during the inspection.

36. Field Notes: Element Rating - We have encountered problems with Element Rating from time to time. Guidelines based on 1978 Equivalent Rating Conditions Descriptions were provided in February 2004 to be used for element rating. However, later on some projects we were told to use the General condition Ratings provided in the Federal Coding Guide (Page F43). Please provide the latest guidelines regarding Element Coding to all Consultants and In-House staff to avoid any misunderstanding on future projects.

The 1978 SI&A Coding Guide condition rating descriptions and the 2003 SI&A Coding Guide condition rating descriptions are essentially the same. The 1978 Guide specifies what repairs need to be made to correct the deficiency whereas the 2003 Guide lists various types of defects that warrant the codes. The 1978 Guide was designed to be used by an inspector (usually an engineer) that knew how to repair the deficiencies that were observed. The 2003 Guide was designed to be used by an inspector (usually an engineering technician) who could associate what he saw during the inspection with the list of defects warranting the various codes. The problem with the 2003 Guide as it relates to the element condition ratings is that the list specifies the major causes of the various codes for Items 58 (Deck), 59 (Superstructure), 60 (Substructure), 61 (Channel) and 62 (Culvert) and leaves little, or no guidance for coding the sidewalk, for example. Therefore, it is much simpler to use the 1978 Guide when determining the proper condition codes for the elements. However, the 2003 Guide should be used to code SI&A Items 58, 59, 60, 61 and 62.

37. In our report Field Notes - If we have a subcomponent with a Priority Repair, do we always code the subcomponent as '4'? If that subcomponent is the main component (for example "Stringers") do we then code the component a '4'?

No. Priority Repairs are not always the result of structural deficiencies. For example, a Priority Repair would be recommended to remove loose concrete stringer encasement above a highway. However, loose encasement is not cause to code the stringer '4'. A code of '4' represents a condition that means the element being rated exhibits a potential for major rehabilitation.

38. Would you please standardize your policy for requiring approach Field Notes pages on culverts, slabs and frames, etc., with shallow fill? Many NJDOT staff ask that these forms be added; others ask us to remove them. This typically occurs on Less-than-20' jobs and County jobs where these types of bridges are usually found.

The policy is to use Deck and Approach Field Notes when SI&A Item 58 is not coded 'N' (where there is a 'deck'). When Item 58 is coded 'N' (where there is no 'deck'), then the Roadway Field Notes sheet alone should be used.



39. What is the distance limit after the bridge abutments for which components need to be evaluated? Are components beyond an approach slab evaluated?

Typically the limits for inspection of approach roadways is to the approach guiderail end terminal (or up to 50' from start of bridge maximum).

40. In the Field Notes "Substructure/Scour" sheet, should a condition rating be given for the (Scour) Findings, (Countermeasure) Condition and Debris sections even if the rating is above a '6'?

Yes, these elements all require condition ratings similar to all other elements of the bridge inspection report Field Notes. If the element condition code is above '6', then the reason for the code does not need to be specified in the Field Notes.

41. Should the Waterway Field Notes sheet have "Condition Rating" column?

Yes, but only the elements where a condition rating is appropriate, such as channel or embankment, should be coded. This should now be clear in the template inspection reports provided.

42. Are guide rail spacer blocks required to be plastic (PVC)? If the spacers are steel, should the item be coded '0'?

Typically plastic (PVC) spacer blocks meet the current standard, but there are also some standards that use steel spacer blocks on bridge mounted guide rail and in transitions. The detail shown on page SF-25 specifies steel spacer blocks. It is shown on page 70 of the Standard Details 2007.

43. Reference to the 2001 NJDOT Standard Roadway Construction Detail No. CD 612-9.2 (Pg. 51 of 129) "Modification of GR attachment to Parapet". Is there a requirement for double rail element in the leading end of guiderail?

A double rail element guide rail is required at the attachment to the parapet.

44. Do we need to put the previous underwater inspection reports in all of our reports that do not have a current underwater inspection?

Yes. The underwater inspection report should be included and the results of the underwater inspection incorporated into the current cycle report.

## SI&A CODING AND PONTIS ELEMENTS

45. We have been requested to submit PDI's for *each* report submission by certain NJDOT Project Managers. Since this is not required per the Scope of Work, we should not be required to make these submissions.

This *is* a requirement of the Scope of Work. The requirement is that PDI's be submitted when a report is submitted. Since all reports are submitted as "Final", the final PDI's must be submitted at the time of report submission (so that the information may be verified and the report accepted, rejected, etc.).

46. Due to the increase in SI&A errors in Pontis is there a system/program that is available to cross check information input into Pontis to check for errors before sending the PDI's to the NJDOT?

There is no type of data cross-checking utility available. As we move further into the database world, these data-issues will continue to decline.

47. The Pontis program, when printing a PDF document after making changes, usually defaults with certain items and it can become very time consuming and tedious to continuously check for the same items defaulting i.e. Item 54, Item 10, Item DJ, Item AH, Item AQ, Item A, deck area, Item 76, load ratings values, Item AM and adding random elements (Deck cracking smart flag, traffic impact smart flag). Can this "default" bug be fixed in the Pontis program?

These bugs cannot be addressed at this time, but will no longer be an issue once we move into an internet-based database system.

48. When we submit PDI's and the State prints the SI&A for QA/QC, certain items revert to default (even though our SI&A printout in our report shows correct data), such as Item AH or AM or BR to BU, and a few others. We get comments back saying to re-code and upload. Why is our hard copy (with correct coding) not being used for QA/QC)? Shouldn't these default corrections be made by NJDOT in-house staff into the database?

Regardless of any corrections that may be made on the Consultant-printed hard-copy, it is important that we maintain the correct information in the database. This requires that the PDI's be resubmitted. This will no longer be an issue once we move into an internet-based database system.

49. Please list the current SI&A Items that are not required to be coded by the Consultants.

Code all items as per the NJ Recording and Coding Guide, with the exception of State programming fields HB through HF: <http://www.state.nj.us/transportation/eng/structeval/downloads.shtm>

50. We were recently informed by the NJDOT that the "Project Programming" portion of the SI&A sheet (Items HB, HC, HD, HE and HF) should not be filled out by the Consultant. Are there any other SI&A or Pontis items which should not be filled out or items which should be coded differently?

The Project Programming fields are not to be coded by either Consultant or Department staff. Only Department staff that is involved with project programming should be coding these Items. All other fields identified in the SI&A Recording and Coding Guide are required to be coded.

51. According to the current version of the Straight Line Diagrams, some Ramp Identifications are changed to mainline. Do we have to change the Items 5, 7, 12, 13 and AB?

Yes, Items 5, 7, 12 and 13 must be consistent with the current version of the Straight Line Diagrams. Item AB should be in accordance with Question 23 of this document to the extent possible (character limitations may require alterations/abbreviations).

52. I am finalizing the report for 0733-160, NJ 24 Ramp D and NJ 124 over JFK Parkway. This bridge is currently coded as belonging to NJ 24 (AA = 24, 5 = 137000240, 11 = 6.99 [NJ 24 MP]). However, it carries NJ 124 EB (mainline roadway) and the NJ 24 Ramp D (ramp roadway). Would it be more appropriate to code as belonging to NJ 124 (does coding the mainline NJ 124 feature take precedence over the ramp feature)? NJ 24 is obviously the more "major" of the two state highways. Note it is identified on the NJ 124 Straight Line Diagram at NJ 124 MP 7.44.

The correct codes are:

- Item AA: b124b
- Item 5: 131001240 (on the first record sheet)
- Item 11: 0007.440

Note that the proper name for this structure would be "NJ 124 EB and Ramp from NJ 24 WB to NJ 24 EB [Ramp D] over JFK Parkway"

53. While measuring Items 10, Item 55, Item 56, if there is no shoulder on a 16'-0" wide lane, is it necessary to assume one shoulder at 4'-0" from the curb and measure the distance from that point?

The maximum lane width is 12 feet; anything beyond 12 feet should be assumed as a shoulder for the purposes of clearance measurements.

54. Clarify how to code SI&A Items 12 and 13: Highway Network and Service Classification. For example, the road is County Route and rural minor arterial system, how do we code Base Hwy Network, LRS Inventory Route and Subroute No.?

The LRS Inventory Route (Item 13A) is coded EXACTLY as shown on the appropriate Straight Line Diagram sheet, including the two (or sometimes one) underbars following the number. New Jersey never uses Subroute Numbers (Item 13B). Therefore this is always coded '00'.

Examples:

- Hunterdon County Route 611 is a Rural Minor Arterial road. Item 12 (Base Highway Network) would be coded '1' and Item 13 (LRS Inventory Route, Subroute Number) would be coded '10000611\_\_00'.
- Hunterdon County Route 601 is a Local Rural road. Item 12 would be coded '0' and Item 13 would be left blank.

55. Item 19: Detour Length – The Federal Coding Guide states that "detour route will be established following allowable criteria determined by the governing authority". Please provide guidance regarding NJDOT Criteria for determination of the detour route.

The Department has not established any specific criteria for determining detour routes for coding SI&A Item 19. The need for such criteria had never been identified previously because the relatively urbanized development in New Jersey made detours on high quality roads relatively short and easy to identify. Another issue is that the coding of SI&A Item 19 would require considerable thought and time should detailed criteria be specified. In short, we did not want inspectors spending a lot of time looking for detours that might result in changes in the detour length from 1 mile to 2 miles.

56. SI&A Item 26 is coded '14', but the Straight Line Diagram indicates STP (Non-NHS). What should Item 12 be coded?

SI&A Item 12 (Base Highway Network) is coded '1' for all highways on the NHS, urban/rural principal arterial or rural minor arterial systems and typically coded '0' for all other highways. However, when Item 26 is coded '14' (Other Principal Arterial-Urban), Item 12 is coded '1' regardless of whether or not the highway is on the NHS. Since the NHS is a defined set of highways, there are instances when lower functional classification roads (access roads to military bases, ports, etc.) are included.

57. If any part of Item 36 is coded '1', is there a need to write anything in the Field Note box?

If a code of '1' applies, then it is not required to elaborate on the configuration. If a code of '0' applies, then it is required that the elements causing the item to be "substandard" be identified.

58. Item 36A & 36B: Approach Guide Rail - Culverts with fill where the roadway guide rail is carried across the structure. Please clarify the post spacing required at the top of structure (6'-3" vs. 3'-1.5"), and whether additional posts are required in the transition zone.

Guide rail carried over a culvert as specified would not differ from guide rail carried over an embankment. As such, the proper post spacing is 6'-3" and there is no transition zone (no additional posts required).

59. Item 36B: Transition Zone - If the existing guide rail is outside the clear zone do we still need plastic spacer blocks and 1'-6" post spacing in the transition zone.

The situation described would be unusual. However, if the guide rail is outside the clear zone, there is no requirement for a guide rail at all. Being that the guide rail is not required at this location, the design could not be substandard if it lacks standard spacer blocks or post spacing.

60. Item 36D: Approach Guide Rail - End Terminal. When approach guide rail is continuous then what is the correct code for Item 36D. In the past it has been coded both ways i.e. '1' or 'N'.

The proper code in such situations is '1', indicating that the design meets standards.

61. If a structure is historically significant (Item 37 = '3' or less) and also Functionally Obsolete and/or Structurally Deficient, please advise us the following: should we recommend any major rehab/widening/replacement and code the associated costs? If no, then how are Items 75, 76, 94, 95, 96, and 97 to be coded (If left coded '0', then this will cause Federal error).

To avoid a Federal error you must code all of the above Items and recommend accordingly in order to remove the structure from Functionally Obsolete and/or Structurally Deficient classification(s).

62. If Item 42A is coded for pedestrian traffic, then the Recording and Coding guide states that fencing is required (Item FN = 'Y'). Does this hold true regardless of what the structure runs over (roadway/water/railroad)?

Yes, fencing is always required where there is pedestrian traffic regardless of the type of "under" feature.

63. In regards to SI&A Item 43A, does the Department consider multi-span concrete rigid frames and multi-barrel concrete culverts to be continuous?

Yes, as per the Bridge Inspector's Reference Manual, these structures are considered continuous.

64. If the deck condition rating (Item 58) is equal or less than '4', will the structure be classified as Structurally Deficient? Will the deck be recommended for maintenance repair or major structural replacement cost? Will it require an interim inspection?

A bridge is classified as Structurally Deficient if either Items 58 (Deck Condition), 59 (Superstructure Condition), 60 (Substructure Condition) or 62 (Culvert Condition) are coded '4' or less. Also, if Items 67 (Structural Evaluation) or 71 (Waterway Adequacy) are coded '2' or less, the bridge is Structurally Deficient. The bridge would be classified as Functionally Obsolete if either Items 67 (Structural Evaluation), 68 (Deck Geometry), 69 (Underclearances, Vertical and Horizontal), 71 (Waterway Adequacy) or 72 (Approach Roadway Alignment) are coded '3' or less. Bridges that are both Structurally Deficient and Functionally Obsolete are classified as Structurally Deficient.

A code of '4' indicates that the condition element requires major rehabilitation. Therefore, if Item 58 is coded '4', the proper recommendation is for deck rehabilitation or replacement. The determination as to whether replacement is required is based on the rate of increased deterioration observed in the top of the deck and the condition of the underside of the deck. The rate of deck deterioration relates to the probable effectiveness of an attempt to rehabilitate the deck vs. replacement. The under-deck condition relates to the cost effectiveness of rehabilitation vs. replacement by assessing the percentage of the deck that will require full depth repairs. A deck coded '4' would never be recommended for 'maintenance repair'.

Interim inspections are mandatory if Items 59 (Superstructure Condition), 60 (Substructure Condition) or 62 (Culvert Condition) are coded '3' or less. Also, a mandatory interim inspection is required if Item 70 (Bridge Posting) is coded less than '5'. In addition, a bridge may be recommended for an interim inspection based on a need to monitor a specific condition, such as settlement of a pier, even though none of the mandatory conditions to warrant an interim inspection exist. However, it is unlikely that a poor deck condition could warrant an interim inspection.

65. The NJDOT and the coding manual provide guidance in evaluating the condition of a bridge deck (Item 58) when there are patches, deck repairs or areas of full depth replacement. However, it is not always clear if this patched or repaired portion of deck is considered contaminated for the coding of Item 58. Further clarification is requested, especially if a high percentage of the deck is considered “restored” by concrete repairs and the condition can only be evaluated by visual inspection due to traffic control restrictions.

If the concrete patches in the deck are a result of work completed under a deck rehabilitation or deck patching contract, the areas are considered ‘repairs’ rather than ‘patches’ when evaluating the coding for SI&A Item 58. The condition of the deck at the completion of the repair contract work is to be considered the baseline condition and any additional patching made subsequently is to be considered as ‘patching’ (contaminated). Deck patching or rehabilitation work is intended to extend the life of the bridge deck from 10 to 20 years. Therefore, it is important that any significant increases in the rate of deterioration be identified during inspections as this indicates that the repairs have reached the end of their useful life and rapid deterioration may occur in the future.

66. Is the condition rating of the substructure (Item 60) affected if there are noted defects on non-integral wingwalls, e.g. if an abutment is coded ‘7’, however, the wingwall is coded ‘5’ due to an exposed footing or severe spalling, should Item 60 = ‘5’ or remain ‘7’?

Non-integral wingwalls will not affect the Item 60 condition rating as per the current coding guide.

67. If Channel and Channel Protection are in Good condition, but scour of the streambed has exposed (or undermined) substructure footing(s), is there an effect on Item 61?

Scouring of the streambed affects the condition of the channel and impacts the coding of SI&A Item 61 (Channel and Channel Protection). Exposure or undermining of the footing would also impact the coding of SI&A Item 60 (Substructure Condition).

68. Is it correct to say that in the case of a rating done by engineering judgment, the coding of SI&A Items 63 and 65 should be ‘5’?

No, the correct coding for engineering judgment would now be ‘0’. Please closely adhere to the memorandum dated May 10, 2012 with the subject “Updates and Clarifications for Load and Resistance Factor Rating Implementation”, which is available at:

<http://www.state.nj.us/transportation/eng/structeval/downloads.shtm>.

69. In some cases for SI&A Item 68 (Deck Geometry), the output result, or code, is not consistent with the SI&A Manual. When this happens the code must be changed manually on the print-out sheet. Has NJDOT identified this to AASHTO in hopes to remedy the bug in the next version?

This is an issue with metric conversion, and FHWA is aware that this issue exists. This issue is not in the hands of NJDOT to correct.

70. Items 68 & 69: The Pontis Lite program had problems with automatic coding of these items and we used to get comments that our codes for these items do not match the ones calculated by the program and, in order to verify the accuracy of the program, hand calculations were provided in the Preliminary Report. Are the problems with the Pontis Lite program resolved? Are we still required to provide computations for Items 68 and 69 by hand, using the Tables provided in the Federal Coding Guide, and include them in the Preliminary Report?

It is required to provide computations for Items 68 and 69 by hand using the tables provided in the NJ modified version of the Federal Coding Guide and include them in the Preliminary Report.

The Pontis Lite program was developed by AASHTO to be utilized by many different agencies. Therefore, it was developed to current FHWA guidelines. The current official version of FHWA's "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges" is in metric units. Therefore, to be consistent, all data in Pontis is stored in the database as metric. Also, the Pontis Lite program performs all calculations utilizing the tables from the official Federal Coding Guide, i.e. metric. The inconsistencies between the values that Pontis calculates and the values calculated by hand are a result of rounding of values when converting from English to metric units.

71. Item 103: Repaired structure - Additional supports in place. The Federal Coding Guide states that if no further activity (except for routine maintenance) is planned, and the structure is expected to remain in place, then Item 103 shall not be coded as Temporary. If the owner has no future plans to rehabilitate or replace the structure then, as per the coding guide, Item 103 will be "BLANK". Please provide guidance regarding:

- a) Do we need to revise the load ratings for the structure by taking additional supports into consideration?
- b) If the plans for the structure are not available, do we consider the additional supports to provide load ratings based on engineering judgment?

It is unusual that the owner would provide shoring at a bridge where they have no plans for further repairs, rehabilitation or replacement. However, if the situation is observed, the repairs would be considered 'permanent' rather than 'temporary'. As such, the load capacity ratings (SI&A Items 64, 66 and State fields) would be updated to consider the effects of the repairs. If the repairs are 'temporary' (ie, shoring), then SI&A Items 64 & 66 would consider the load carrying capacity of the bridge without the temporary repairs. The State SI&A load rating fields (Items BQ thru CF) would consider the effect of the temporary repairs. This means that in either case, the load carrying capacity of the bridge considering the repairs would need to be calculated. Likewise, if the load ratings are based on engineering judgment, they would consider the repairs similarly.

72. If a bridge has never been reconstructed, should Item 106 be coded 0000? If there has been reconstruction, should Item 106 be coded with the year (example: 1982)?

Yes.

73. If a bridge that is non-scour critical has footings exposed, but does not require a Priority Repair (could be handled during regular maintenance) do we still code Item 113 = '4' (Needs Action)?

Coding SI&A Item 113 = '4' indicates that there is scour present that has exposed the footings of a non-scour critical bridge and requires attention. This makes the recommendation of a Priority Repair mandatory. If the same situation exists but the scour does not require attention (SI&A Item 113 = '5'), then a regular maintenance action can handle backfilling the scour.

74. Can NJDOT clarify the conditions when SI&A Item 113 should be coded '7' or '8'?

In order for SI&A Item 113 to be coded '7', scour countermeasures must be in place at the bridge and the bridge cannot be considered scour critical as per the scour assessment. Often, the code of '7' was incorrectly used to shade between codes of '6' and '8'. A code of '8' should be used when countermeasures are present and it is known that they have been designed in accordance with HEC-23.

75. If in response to a previous cycle Priority Repair recommendation, loose rip-rap is placed to cover the exposed footing, and is serving its intended purpose, should Item 113 remain coded '5' or upgraded to '7' or '8'?

On a non-scour critical bridge, Item 113 may be upgraded to '7' as long as the loose rip-rap is fully protecting the footing. Item 113 *may not* be upgraded to '8' unless scour countermeasures have been designed as per HEC-23.

76. A bridge is considered scour critical (Stage II completed and 113 = '3') and is also Structurally Deficient, so if the costs are given for complete replacement should the Stage II Scour Countermeasure costs be included in total cost? New bridge will be designed by HEC-18/HEC-23, etc.?

If the bridge replacement is scheduled in the near future (3 years or less), then the bridge would be recommended for continued monitoring during/after severe flood events and the new bridge will be designed in accordance with HEC-18 and not considered scour critical. If the bridge replacement is not scheduled within the next 3 years, then a separate recommendation should be included for installing scour countermeasures on the existing bridge.

77. If a bridge is determined to be scour critical based on a previous Scour Report, how should Item 113 be coded if scour measures were subsequently installed, however, they are determined to be inadequate or some of the rip-rap has washed away? If the rip-rap is adequate at one substructure unit, but somewhat inadequate at another unit, how should Item 113 be coded?

Item 113 codes of '4' through '7' are not applicable for scour critical bridges. The installation of scour countermeasures on a scour critical bridge would result in the coding of SI&A Item 113 being revised to '8' only if the design is in accordance with HEC-23. If installed countermeasures are not in accordance to HEC-23, then the scour critical bridge is to remain coded '3' or lower. Item 113 should be coded based on the most critical substructure unit.

78. If a substructure footing is exposed or revealed from an underwater inspection, should Item 113 be coded '4' or '5' regardless of the Scour Report?

Yes. If the foundation is exposed and **the bridge is not 'scour critical'**, SI&A Item 113 must be coded either '4' or '5'.

79. If a structure over a waterway has been rehabilitated, are we required to go against the state scour evaluation file and upgrade Item 113 and remove all scour evaluation data in Pontis?

No, continue to use the State scour evaluation unless scour countermeasures have been designed (as per HEC-23) and installed.



80. Spalls are on underside of the deck. For State Item BF, are remarks C, D & E (for Item 58) also applicable, or are they for top of deck spalls only?

Codes C, D & E for Item BF [Remarks on Item 58 (Deck)] are for use in identifying spalls in the top of the deck only. Code R should be used to identify spalls in the underside of the deck.

81. Will item DA (Description of Proposed Improvements) be back on the SI&A?

It is not being considered at this time.

82. Painting Items GD thru GO: If an existing steel or concrete encased steel structure is widened using weathering steel girders, how do we code Paint items? Do we need to code for the existing steel structure or widened weathering steel structure, or complete two paint inspection forms in Field Notes? If we have to complete two forms, then which information is to be included on the SI&A sheet (i.e. for steel structure or weathering steel)? Also, if the superstructure is of Weathering Steel only, then do we need to code Item GC - Date of Paint Inspection as the ends of the beams are painted?

The Painting Items (Items GD thru GO) can only be coded to represent the overall condition of the bridge paint. Regardless of any differences in paint condition for sections of the bridge, an overall rating must be developed that best represents the condition. If the paint conditions cannot be represented accurately by one set of Field Notes, then two should be used (this should be avoided if possible). Although the example compares painted steel vs. weathering steel (painted section only), it is not unusual for different sections of larger bridges to exhibit varying degrees of paint deterioration.

83. How is the deck area calculated (on Sheet 1 of the SI&A)?

The deck area is roughly calculated by multiplying SI&A Items 49 (Structure Length) and 52 (Deck Width Out-to-Out). This field can be used to roughly cross check the Pontis deck element quantity when the deck slab extends to the fascia girder. Many older bridges lack a deck slab below the sidewalk and the field cannot be used as a cross check in those cases.

84. For structures comprised of adjacent Prestressed concrete voided slab beams with a bituminous overlay paved directly on top (no separate slab or integral concrete deck structure exists), please clarify the proper coding for Items 43, 58, 59, 107, and AU.

The coding is as follows for adjacent Prestressed concrete voided slab bridges:

- Item 43 - 501 Prestressed Slab
- Item 58 - Code condition for top of slab
- Item 59 - Code condition for underside of slab
- Item 107 - 02 Concrete Precast Panels
- Item AU - 5 Prestressed Concrete Voids Slab

85. If an Arch (or a Rigid Frame) is under fill and the headwalls do not extend above the roadway, do we code the SI&A as a Culvert or as an Arch?

Please closely adhere to the memorandum dated March 12, 2012 with the subject "Clarification on Culvert Definition and Proper SI&A and Pontis Reporting", which is available at <http://www.state.nj.us/transportation/eng/structeval/downloads.shtm>. This policy is very important in order to comply with Federal coding requirements.

86. Does NJDOT agree with the following SI&A codes?

- For a concrete box culvert without fill: Item 58 = N, 59 = N, 60 = N, 107 = 1 and the Pontis Element 013 is not applicable. **Agree**
- For a concrete box culvert with fill: Item 58 = N, 59 = N, 60 = N, 107 = N and the Pontis Element 013 is not applicable. **Agree**
- For a concrete box culvert without fill and with overlay: Item 58 = N, 59 = N, 60 = N, 107 = 1, 108 = 600 and the Pontis Element 013 is not applicable. **Agree**

Please closely adhere to the memorandum dated March 12, 2012 with the subject “Clarification on Culvert Definition and Proper SI&A and Pontis Reporting”, which is available at <http://www.state.nj.us/transportation/eng/structeval/downloads.shtm>. This policy is very important in order to comply with Federal coding requirements.

87. If a bridge is under construction at the time of inspection, say lanes taken out and quantities of elements removed, do we alter Pontis to reflect that condition, or just leave all the same and say “under construction” in report?

Do not update Pontis elements/quantities until construction is complete. Clearly mention the status of construction in the inspection report.

88. If the Pontis Element Approach Slab is coded 321 (Reinforced Concrete) and it is later overlaid with bituminous concrete, do we keep this element?

Yes, since there is no element specifically for an Approach Slab overlaid with Bituminous Concrete. If approach slabs exist (as per plans or visual determination), then Element 321 must be coded in Pontis, even if the slabs are not actually visible due to an overlay. The evaluation of the condition is based on the condition of the overlay as it is affected by the underlying concrete.

89. Coding for Item 43B is ‘19’ for a frame culvert. What Pontis element would we code for this culvert?

The Pontis element would be #241 (Reinforced Concrete Culvert) if the culvert is reinforced concrete. Exceptions would be for large frames over highways, railroads or larger streams. In those cases where SI&A Item 43B is coded ‘07’, the correct Pontis element would be #144 (Reinforced Concrete Arch) if the frame is reinforced concrete.

90. Coding of Deck Item 58 on the SI&A vs. Pontis coding of Item 070 (Deck with bituminous overlay). The SI&A cannot be downgraded due to defects in the overlay, however Pontis does allow a lower condition state due to potholes. This creates inconsistent coding. Can DOT give a recommendation on how to handle this situation?

The condition of the overlay does not directly affect the coding of either SI&A Item 58 or the Pontis deck element. However, the condition of the overlay as it reflects the condition of the underlying concrete does affect the coding of both items. This means that a pothole in the overlay representing a deck spall in the concrete below would impact the coding. However, rutting of the overlay would not. The inconsistency between the coding of these items involves a situation where a deck in poor condition has been overlaid with bituminous concrete where no repairs were made to the concrete deck prior to the overlay. This situation occasionally occurs when an overlay is placed over a poor deck to temporarily improve ride-

ability. In this instance, since the overlay is in good condition, the Pontis deck element would be coded in Condition State 1 whereas SI&A Item 58 would be coded '4' (poor condition).

91. How do we code Elastomeric Bearings in Pontis?

Code elastomeric bearings as Element No. 310.

92. When you find severe rust in a few areas of the superstructure, do we code SI&A Item BG and Pontis Elements 363 and estimate section loss 1/16”?

Section loss should not be estimated, it should be measured. Once actual measurements are made, an engineering judgment as to the losses must be made due to the typical variability of section losses. Element 363 needs to be coded if any Condition State for a steel element is '4' or '5' or in a situation where an area of section loss has been cleaned and painted. Use the same criteria as for Element 363 when coding Item BG.

93. We have a bridge where the bituminous concrete wearing surface has been removed from the deck in one of the four spans. The deck for all spans consists of a reinforced concrete slab with a bituminous concrete wearing surface with Pontis element coded as "013 Concrete Deck - Unprotected w/AC Overlay". However, the wearing surface was removed from one of the spans, exposing the bare concrete deck, since the previous inspection. In this case, should there be two separate deck elements, "012 Concrete Deck - Unprotected and Bare" and "013 Concrete Deck - Unprotected w/AC Overlay" to represent the two different deck surfaces? Or should there be only one deck element, "013 Concrete Deck - Unprotected w/AC Overlay", to represent the majority of the deck surface?

According to the Pontis coding instructions and past standard practice, the entire deck area should be coded as one (1) element only, which would not be a true representation of this situation. Please advise.

There should be two separate bridge deck elements (Pontis Element Nos. 012 & 013) and quantities coded accordingly. The quantity for each deck element must be coded in the same Condition State and not divided.

94. If a structure has the following bridge railing elements, which Pontis elements are to be coded?

- Parapet with two aluminum rails on top.
- W-beam guide rail along the curb that protects the sidewalk.

There should be a single code for the bridge railing. This means that if the concrete parapet has two aluminum rails and the w-beam guide rail acts as a single combined bridge railing unit, then Pontis Element #333 (Bridge Railing--Miscellaneous) should be used to represent the combination system. If there is a w-beam guide rail system mounted along the curbline and the concrete parapet/two aluminum rail system is mounted outside the sidewalk, then the bridge railing is the w-beam guide rail system and the concrete parapet/2 aluminum rail system is a pedestrian railing. In this situation, Pontis Element #334 (Bridge Railing--Metal--Coated) should be coded for the bridge railing and the pedestrian railing system should not be coded in Pontis.

95. Pontis fascia beams: Did NJDOT consider adding a sub-element to differentiate the condition of the Fascia beams vs. the Interior beams? Over time, the fascia beams show more deterioration as they are exposed to the natural elements. Also, there are no Pontis Elements for Noise walls and Chain link Fence carried by the structure.

No, we did not. The need for additional Pontis elements requires consideration of the value gained vs. time consumed to collect the information. Although fascia girders often do deteriorate at a different rate than interior girders, we do not feel that the additional information would warrant the time spent collecting the additional data. The same reasoning applies to chain link fencing and noise walls (carried by bridges). The idea behind Pontis is to collect sufficient information about the major components of the bridge in order to predict the rate of deterioration for various bridge types within the overall network of bridges. There is no intent to collect information about every component of a bridge or to identify every component that can deteriorate at a different rate as separate elements.

96. Is a Smart Flag required for spalls in deck overhangs?

Yes, Pontis Element 359 (Soffit of Decks and Slabs) would be coded.

97. Pontis Soffit Smart Flag (Element 359): Soffit smart flag is for the entire underside of the deck, however, what about where SIP forms are used and the exposed portion of deck at the overhangs exhibits transverse cracks with efflorescence. Did NJDOT consider adding a sub-element to cover this situation?

No, it was not deemed to be warranted.

## LOAD RATING

98. What direction is NJDOT going as it relates to the load ratings of New Jersey's bridges? We understand that when Federal and State requirements change, so does the methodology of the way the bridges are to be load rated. Has there been a decision made as to what rating software is going to be the so-called 'standard' and ultimately what does NJDOT want to achieve out of the load rating program?

The NJDOT is moving into LRFR analysis for bridges as per Federal requirements. All bridges are to be load rated using LRFR and either LFR or ASR as applicable. Currently, load ratings are to be reported as per the design methodology. At this time, the primary load rating software to be used, whenever possible, is the current version of Bentley's LARS Bridge.

99. With constant updates to LARS bridge modeler, when should ratings be submitted and relevant SI&A Items updated to avoid spending extra time in rerating and coding inaccurate information?

LARS is becoming more stable but will continue to be updated with future releases. Load ratings shall be performed in the most recent version of LARS at the time the report is submitted to the State.

100. The Scope of Work for ratings currently states: .... All members of the structure must be rated. The term "unique member" will be used to classify a member with different section properties (but not variations in spacing, skew, etc). The number of unique members will be considered during negotiating of rating hours. Both the "As-Built" and "As-Inspected" ratings must be reported for all members. ...

It is our experience that the single most distinguishing characteristic between "unique members" is the length of the member. When "copying and pasting" members, the length of the member affects nearly ALL of the LARS "tabs". (i.e. Structural Configuration, Member Shape Description, Deadload Description, Lateral Bracing and Stiffeners, Shear Reinforcement). To facilitate an accurate and successful negotiation, it must be explicitly stated that the length of a member is included in the "section properties" affecting a classification of a "unique member" and not the variations. Otherwise coming to a consensus will become increasingly difficult.

There are certain modeling techniques which can be used to make it easy for Consultants to copy a member and change its length. Bentley is in the process of developing a Wiki article and accompanying .bmd file to aid Engineers in this purpose.

101. In LARS Bridge Modeler concerning steel members, there are no inputs for section modulus or moment of inertia in the interface. How do you recommend rating built-up / defective members accurately without these parameters (currently the built-up option only involves cover plates and defect / hole option is problematic)?

The current version of LARS allows the independent input of web, top flange, and bottom flange elements.

When a defect is modeled in LARS, make sure to indicate the positioning in the Rating Position Location, so LARS will run calculations for the section properties at the exact location of the defect.

102. How do you recommend rating older rolled steel members in LARS with the variable flange thicknesses at web and edges?

The current version of LARS contains many of the older rolled steel members with variable flange thicknesses at the web and edges in the standard shape library. If the shape is not contained within the library, it is the load rating engineer's task to assume a comparable section. At this time, LARS does not allow users to input flanges of varying thickness from web to edge.

103. How can varying stiffener spacing be modeled in LARS if the changes in spacing do not correlate with the diaphragm spacing?

The current version of LARS allows the lateral bracing spacing and stiffener spacing to be input independently.

104. If for whatever reason a member cannot be accurately rated in LARS, what procedure should we follow in communicating this to NJDOT and/or can other software be used **only** in this case?

For bridge types that cannot be rated using the current version of LARS software, discuss the situation with the NJDOT Project Manager. The use of other load rating software, when required, needs the prior approval of the NJDOT Project Manager.

105. What specific LARS output reports are you seeking and for which specific (controlling, as-built, as-inspected) members?

Refer to Sample 1 and Sample 2 under the Load Rating heading at:

<http://www.state.nj.us/transportation/eng/structeval/downloads.shtm>

106. For the load rating sample reports provided online on the NJDOT Structural Evaluation Website (9999999\_2011... & 8888888...), why are the As-Built and As-Inspected Inventory LRFR ratings for standard vehicles Type 3, 3S2, 3-3 showing “---“ instead of numerical values generated by the LARS Program (need values for SI&A Sheets)?

LRFR methodology does not differentiate between Inventory/Operating ratings for legal loads, but rather provides a single rating factor used to determine if posting is required for the given vehicle. If LRFR ratings are to be reported in the SI&A, then the Inventory values for the legal loads will be left blank (Items BS, BT, and BU).

## PRIORITY REPAIRS

107. Do ALL Priority Repair letters require a sketch? If so, is a typical/generic sketch adequate? Or does the sketch have to be specific to Priority conditions found in the field?

Every Priority Repair does not require a sketch, but a sketch is often the clearest way to identify the location of a defect. For instance, if recommending to replace a damaged guiderail end terminal in-kind, it may be sufficiently clear to state verbally that the damaged end terminal is in the “southwest corner”, provide clear photograph documentation, and no sketch will be necessary. If a Priority Repair is recommending the patching of deck spalls in various spans of a long bridge, a sketch will often be more appropriate and clear rather than verbally stating the location of each spall. Because of the great variety of Priority recommendations, the NJDOT has no general guidance as to which Priority Repairs require a sketch.

108. What kinds of details are required for each Priority Repair? For example, in some situations some Priority Repairs need additional information such as bearing calculations.

Every Priority Repair requires a detailed verbal description of the defect, its location, and its extent. It requires “general photographs” showing the defect location(s) and “close-up photographs” showing the extent of the defect(s).

Due to the varying nature of Priority defects and the varying levels of severity, the requirements of Priority Repairs cannot be defined for the limitless scenarios. Priority Repairs need to contain enough detail so that the extent of the problem and the necessary repair action is clear to the Bridge Owner. In cases where a repair may require a level of design that is beyond the Scope of Work, speak with the State Project Manager before proceeding.

109. What is the extent of effort required to provide details for a repair (w/o design) when a Priority is written, e.g. for a temporary support, repairing holes in a web, or for installing flange plates? How can a temporary support column size given without running design calculations? For very tall supports, how should we decide on brace points for a 4-leg temporary support frame without running calculations? When we provide a general schematic, we are asked to provide all details, member sizes, bolt spacing, etc.

Time for several detailed Priority Repair recommendations is built in to the standard report hours given across a project. Not all bridges will require the amount of time that is granted, and this extra time is to be used for more time-consuming structures. In cases where a repair may require a level of design that is beyond the Scope of Work, speak with the State Project Manager before proceeding.

110. The NJDOT listing of “Priority Repair Categories” refers to the following priorities and time frames for performance of the repairs:

- Emergency (within 3 days)
- Priority 1 (High - within 30 days)
- Priority 2 (Medium - within 3 months)
- Priority 3 (Low)

Engineering judgment is used to decide if a condition observed during the inspection which is not in the NJDOT listing requires a Priority Repair and the urgency of the repair. We recommend that the NJDOT update this listing and provide additional examples of conditions which may require Priority Repairs.

The Priority Repair Categories are accurate as stated above. Also, the need for the bridge inspector to use engineering judgment to categorize the conditions observed in the field is also accurate. We do not believe it is possible for a listing of all, or even most, Priority Repair conditions to be included in Structural Evaluation’s policy so that staff can choose the appropriate category from the list. The basic evaluation process requires the judgment of the engineer. This is one of the most basic reasons why the Department uses engineers to conduct inspections rather than the engineering technicians used by most other States. However, we understand that the need to use good judgment also leaves the possibility of differences of opinion between engineers. Because of this possibility, both Consultant and Department staff need to understand that there is not necessarily a right or wrong answer when judgment is used. There are instances where one engineer will consider deterioration to warrant a Priority 1 Repair and another will think it’s a Priority 2 Repair. This is not to say that categorizing a large piece of loose encasement above an active travel lane can be correctly categorized as a Priority 2 Repair. However, valid differences in judgment must not be used to downgrade the performance evaluation of Consultants.

111. Will CES for the Consultants be affected if Consultant is advised by NJDOT to change a Priority E to a P1 or vice-versa and Priority 2 to P1, or vice-versa?

If a Consultant is required to raise a Priority level (none to P2, P2 to P1, P1 to E), there will be an adverse affect on the CES rating unless the Consultant justifies the reasoning behind the original level assigned. If a Consultant is asked to reduce a Priority Level (E to P1, or P1 to P2), there will typically be no affect on the CES rating. The exception would be if it is clear that a Consultant is abusing this scenario and issuing Priority Repairs at a higher level than necessary; this may affect the Management side of the CES rating.

112. Many Priority calls such as settled curbs, scaled balustrades and fallen trees in the channel are not included in the Priority Repair Procedure memorandum dated January 2, 2008. Could you provide a more descriptive list of example and samples for E, P1 and P2 Priority Repairs?

Engineers are hired to perform field evaluations and use sound engineering judgment when making recommendations. There are limitless situations (see questions below) that may require a Priority Repair; NJDOT cannot identify and standardize all of these. Use the Priority Repair Procedure as basic guidance; do not rely on it completely.



113. Is a Priority Repair recommendation required to install a sidewalk-mounted or balustrade-mounted guiderail, when a balustrade shows signs of deterioration/severe scaling (coded 5 or above)?

This is a good example of an instance that requires the judgment of the engineer performing the field evaluation. Not all scenarios can be generalized. The engineer must make the determination if the existing condition presents a safety issue. Specific conditions at the bridge site will have an effect in this determination.

114. Typically in the past, we have written a Priority when a sidewalk is settled 3 inches or more; is this an acceptable range? Is a Priority Repair recommendation required to be written if only curb is settled, 3" or more?

Again, site conditions play a major factor in this determination. The level of pedestrian use plays an important role in judging how much settlement is acceptable before safety comes into question. There are no standard "cutoffs" for when settlement begins to warrant Priority action.

115. On a concrete/timber pile bent, what percentage of piles should be significantly deteriorated, for a Priority to be generated for Pile Jacketing. e.g. out of 8 piles if 2 pile shows advance scaling with rebar showing, will this require a Priority?

This is another judgment call to be made by the engineer in the field. Factors such as pile location, pile environment, material, etc. all play a role in the decision. There are too many factors involved to provide a standard.

Note that if even just a single pile of a pile bent has advanced scaling with exposed reinforcement, it typically would warrant a Priority (to prevent further deterioration).

116. Can the Department clarify if it wants Priority Repair Letters based on the SI&A Item 113 scour rating of '3' and '4' in addition to actual field conditions that would warrant said letter?

If the Department wants Priority Repair Letters based on the Scour Report Item 113 rating of '3' and '4', it should be put in writing and also included in the SOW. In this way, the letters will be sent with the reports and will not have to be requested by the Project Manager.

Clarifications are as follows:

- SI&A Item 113 = '4': This code represents a situation where the bridge foundation is stable for assessed or calculated scour conditions, but that action is required to protect exposed foundations. Since repairs are required in order for this code to be appropriately used, it is necessary for a Priority Repair to be recommended. If a Priority Repair is not required, then '4' is not the appropriate code. Note that the code of '4' only applies to bridges that are non-scour critical.
- SI&A Item 113 = '3': This code represents a situation where the bridge foundation is not stable for assessed or calculated scour conditions. There may or may not be any actual scour at the bridge. However, if scour is present, this scour is a serious matter due to the fact that the bridge is 'scour critical' and a Priority Repair would usually be recommended.
- SI&A Item 113 = '2': This code represents a situation where the bridge is scour critical and extensive scour is present. The presence of extensive scour on a scour critical bridge will always warrant a Priority Repair, possibly an Emergency.

- SI&A Item 113 = '1': This code represents a situation where the bridge is scour critical and failure is imminent. This situation would warrant an Emergency Repair, possibly closing the bridge until such time as the repair can be effected.
- SI&A Item 113 = '0': This code represents a situation where the bridge has failed and is closed to traffic.

117. Is a Priority Repair recommendation required when bridge is not scour critical and only top of footing is exposed and Item 113 = '5'?

If a footing of a non-scour critical bridge is exposed but not undermined, it is at the inspector's discretion whether the condition warrants a Priority. If the inspector, based on conditions at the bridge, thinks that the existing condition exhibits no serious threat to the structure, then no Priority recommendation is required. However, there will be instances when there is no undermining observed but the inspector believes that the exposure is significant and warrants a Priority. Since the conditions leading to footing exposure vary so much from bridge to bridge, this issue typically cannot be generalized with the exception of the two conditions listed above.

Code Item 113 as '5' when there is footing exposure *without* Priority recommendation and '4' when there is footing exposure *with* Priority recommendation. Note that the codes of '4' and '5' only apply to bridges that are non-scour critical.

Note that the following cases *always* require a Priority Repair recommendation:

1. Exposed footing with evidence of undermining, including minor undermining
2. Scour critical bridges that have any footing exposure (with or without undermining)

118. If Pontis Element 361 (Scour Smart Flag) is coded in Condition State 2, is a Priority Repair required?

A Priority Repair is not required in such instances. However, if SI&A Item 113 is coded '4', then a Priority Repair is required.

119. Is a Priority Repair recommendation required when an approach guiderail is not attached to the bridge parapet (not detached or damaged, but just short of the parapet as the as-built condition)?

Yes, this typically would warrant a Priority recommendation.

120. When the deck surface has spalls, do we need a Priority Repair letter?

Priority Repairs for patching deck spalls are typically required when spalls extend below the top mat of reinforcement or if rebars are protruding upwards.

121. Consider the case of a bridge that is load posted due to section loss to the superstructure or substructure. A rating analysis has been performed in a previous cycle inspection report that takes into account this section loss. The proper load posting signage based on this load rating is in place at the bridge. No additional section loss has occurred since the load rating analysis was performed.

Included with the definition of a Priority 2 repair is the statement "major defect in the superstructure, substructure, or deck, which if not repaired in the near future (within 3 months) may cause a load restriction". The confusion arises when the defect has already caused the bridge to be load posted. Is it necessary to make a repair within the 3 month time frame since the member in question will no longer be overstressed, provided that the posting is being followed.

Should a recommendation be made that areas of section loss be repaired on a Priority 1 or Priority 2 basis, depending on location, severity, etc.

-OR-

Since the proper load posting signs are in place at the bridge, a Priority 1 or Priority 2 Repair is not warranted. However, based on the condition rating of the superstructure, substructure and/or due to low inventory ratings, a major recommendation for rehabilitation or replacement will be given in the inspection report.

The situation expressed warrants a priority action. The action was to either load post the bridge in order to reduce the weight of the vehicles using the bridge to match the load carrying capacity or to repair the bridge so that it can carry unrestricted loads and load posting is not required. In this instance, a decision was made to post the bridge for load restrictions. As long as no further section losses require lowering of the current weight restrictions, no further priority action is necessary. However, a recommendation for rehabilitation or replacement would be made if warranted.

## CoMBIS

122. Some State Project Managers are deleting structures from our projects that are CoMBIS structures (these are smaller structures consisting of multiple pipes that add up to 5' or more – some of these structures are multiple pipes of 3' to 4' in diameter) – These structures would at least be “visual” inspections. Are Project Managers using different guidelines?

The standard criteria for what qualifies for inclusion in CoMBIS is available online at <http://www.state.nj.us/transportation/eng/structeval/countyculvertinsp.shtm>

Refer to “Culvert Definition” and “Standards for Inspection”.

All qualifying structures that meet the standards for inspection, and are located in the Towns covered by your CoMBIS contract, are to be included in the inspection effort.

If a structure that meets the standards for inspection is not included in current contract, due to it being discovered too late in the Part II process, then it shall be specifically flagged to be included in a future contract.

123. When we create an inventory inspection (Cycle 0) in CoMBIS....if you choose “Inventory Data” as shown on the opening screen, the program does not allow you to create a Priority Repair or view and print photos. Can we choose “Regular Inspection” instead? Do we include photos in a Cycle 0 inspection? What submissions are made in a Cycle 0 inspection (does the report go to County and State?) (Note: we are assuming all Inventory inspections are called Cycle 0 – is that assumption correct?)

Cycle 0 inspection reports are only created in cases when the structure included on the original bridge list *will not* be included for a full/visual (first cycle) inspection. Only in this case will a Cycle 0 report be created and the data submitted to the Bridge Owner/State for review.

When there is going to be a first cycle inspection performed during the Part II effort, Consultants are to create a regular inspection report (Format A) during the inventory (Part I effort). However, **DO NOT SUBMIT THE REPORT IN THE SYSTEM** at this time. In addition to other benefits, by creating a regular report at this time it gives you the capability of generating a Priority Repair from within the system.

(Note: A new report has been created, the “Inventory Summary Sheet” PDF report, which gives you an easy way to check that the Inventory data is complete and correct. Submit a hard copy to the Bridge Owner for review if they are not yet on the CoMBIS system.)

124. For a Cycle 1 inspection CoMBIS will not create a PDF of the entire report (we can create a PDF of individual sections), What do we do?

If this issue has not been resolved by the publication of this document, please use the “Report Bugs, Issues & Suggestions” form available at <http://www.state.nj.us/transportation/eng/structeval/countyculvertinsp.shtm>

125. CoMBIS Program: If you “create” a cycle 1 report earlier than the actual inspection date then that “create” date shows up as the inspection date on the Pontis sheet – you may have to tie the inspection date on the Pontis sheet in with item 90.

If this issue has not been resolved by the publication of this document, please use the “Report Bugs, Issues & Suggestions” form available at

<http://www.state.nj.us/transportation/eng/structeval/countyculvertinsp.shtm>

126. When CoMBIS generates Sheet 1 (Structural Data), the Dates of Fracture critical inspection, underwater inspection, special testing and elec/mech inspection automatically appear. Any way to not have them automatically show up on page 1.

If this issue has not been resolved by the publication of this document, please use the “Report Bugs, Issues & Suggestions” form available at

<http://www.state.nj.us/transportation/eng/structeval/countyculvertinsp.shtm>

127. Item 36B transition – The transition code automatically codes the “curbs and sidewalks” and not the actual transition. Should it code the actual transition?

If this issue has not been resolved by the publication of this document, please use the “Report Bugs, Issues & Suggestions” form available at

<http://www.state.nj.us/transportation/eng/structeval/countyculvertinsp.shtm>

128. Does the State have a sample Cycle 1 report already done in CoMBIS that you can give the Consultants?

Yes, “Sample Bridge over Sample River” is now available to Consultants as a read-only complete inspection report, under “Sample Asset” in the “All” tab.

129. Many of the CoMBIS bridges are culverts and cannot be rated in LARS. Do we leave the Load rating Summary and Load Rating tabs in the CoMBIS report blank or provide ratings using engineering judgment?

Bridges that cannot be load rated in LARS, either due to the structure type, a lack of plans, or other reasons, are to be load rated using engineering judgment.

130. What should be inserted in to the Historical Information section of the CoMBIS report? After completing Phase II Inspections the reports to be generated in CoMBIS are 1<sup>st</sup> Cycle however, due to a lack of information and plans the historical information is unavailable.

Ideally the information identified in the Historical Information section would include when and under what agency the structure was built; when and by whom any subsequent alterations were made; the nature and extent of subsequent alterations; and the historical significance of the structure, if applicable. If the bridge has no plans available and a Bridge Owner has indicated that they have no additional historical information, then the report writer may indicate that “no historical information available for this structure at this time”.

131. The “CoMBIS guidelines for inventory level data collection” says to always code Item 13 – The Fed. Manual says code item 13 only if item 12 is ‘1’. What should we do?

For CoMBIS structures, code as stated in “CoMBIS Guidance for Inventory Level Data Collection”

132. New field M145 states “This field defines the total vertical opening available, at the larger of the end openings, if there is no silting or other obstruction in a culvert with a man-made bottom, or the design clearance in a structure with a natural stream bed.” If no plans are available and field observation reveals a lot of silt build-up, how do we determine the design clearance or vertical opening? If we are unable to it determine the design clearance should we leave this field blank?

Leave blank if this value cannot be determined.

133. For CoMBIS bridges - can we code Item 113 ‘6’ if we do not have any information on scour?

No bridge shall receive a code of ‘6’ for Item 113. If there is no evidence of scour present, or there are countermeasures in place known to be designed in accordance to HEC-23, code Item 113 as ‘8’. If there are scour countermeasures in place that *are not* designed in accordance with HEC-23 (or it is unknown as to how the countermeasures were designed), code Item 113 as ‘7’. If scour is present but no Priority Repair is warranted, code Item 113 as ‘5’. If scour is present and a Priority Repair is warranted, code Item 113 as ‘4’ or below.

134. When submitting a Priority Repair letter in CoMBIS if a drawing/sketch is attached to the Priority letter it does not get attached in the Priority e-mail that is sent to the Bridge Owner. What should be the proper way/procedure to submit the drawings/sketches? Are sketches needed/required for CoMBIS structures?

Sketches must be attached to the Priority Repair as an image file (.tif, .png, etc.), and will then be included in the PDF that is generated and sent to the Bridge Owner as part of the Priority notification.

## DRAWINGS AND SKETCHES

135. Continuing problems with CADD requirements are occurring, costing us valuable time in redrafting work that was approved for the previous Consultant. This includes information on the soundings, knowledge of footing locations (where no time is given to research this), and requests for new CADD such as cross sections, when we were told in 2003 not to include this anymore. Can you please standardize what you want for CADD soundings, clearances and other sketches? Also, CADD drawings for soundings are supposed to be in Microstation format since 1994 for all Consultants, but many CADD drawings are still being done in AutoCAD, which requires a conversion to Microstation by us. Some conversions leave out tables, borders and parts of the drawings, and to correct this additional work is required but never included in the contract. All Consultants that send their CADD drawings to NJDOT should be using Microstation and if AutoCAD is used it should be rejected by NJDOT and the drawings redone accordingly.

This issue has been one of our historical problems. The issue involves the degree of review time that needs to be consumed by NJDOT to assure that the drawings are done correctly. While we understand that some details in the drawings are found later to not be consistent with the requirements, drawings that show the important aspects of the inspection can and do get approved. The difference between AutoCAD and Microstation drawings are not apparent based on a review of the drawing print. Once final files are submitted, it is too late to have the files revised from AutoCAD to Microstation, but this will impact the Consultant's CES rating if the use of AutoCAD drawings was not pre-approved. Because this is an ongoing problem, Consultants must be aware of the propensity and review the previous CADD files to identify issues that are incorrect so that appropriate time can be negotiated to correct the problems.

The preferred drawing format for Structural Evaluation is MS Visio. Sketch templates available on the Downloads website should be utilized where possible.

136. Can the Department create a standard requirement or waive the requirement to show underside of the deck elevation and the foundation elevation on CADD drawings when a Consultant is not provided with (or it does not exist) the existing as-built drawings?

The underside of deck elevation should always be provided on sounding drawings. The elevation can be based on a local datum related to the sounding elevations. Foundation elevations cannot be shown unless plans are available. However, there are many instances where the foundation elevations are not shown and plans are available that it is inappropriate to provide a waiver. Whenever foundation elevations are not shown on the sounding drawing, the situation should be identified during the proposal development phase and corrected during the report preparation phase. If foundation plans are unavailable, this fact should be identified on the sounding for future reference.

Note that any time plans are requested (such as for load rating purposes), the elevations on the sounding sketches should be added/verified as necessary.

137. The CAD drawings for many bridges over waterways are not drawn to the standards outlined in the Underwater Manual. (Occasionally the drawings are not in Microstation format, though this is required by DOT.) Is it the intention to keep 'updating' the previous drawings or to change them to the proper standards?

The intention is to change the drawings to meet the proper standards.

138. Report production needs to be consistent across different Consultants so that these reports are consistent when transferred to the next cycle of inspections. For example: Consultants write maintenance recommendations in the Conclusions and Recommendation section, which is not required according to the new reduced format. We received sketches prepared using different software such as Microsoft Visio or Bentley Microstation or Autodesk AutoCAD. These sketches should be standardized.

Some Consultants retained the maintenance repair recommendations that they had written in their first cycle reports in the second cycle reports as it was easier for them to do so than to delete them. For a new Consultant, the previous cycle repair recommendations would need to be reviewed for accuracy and, as such, it would be less effort to delete them from the new report being written. Sounding and underclearance sketches that do not meet Department standards are a recurring problem. During the proposal preparation phase of a project, inconsistencies with Department standards in the drawings should be identified and resources proposed to eliminate the inconsistency. What is not acceptable is failure to review the drawings at the beginning of the project and then stating that the previous Consultant did not do them properly when the problem is identified during reviews.

139. The report format indicates how the soundings and clearance plan are to be drawn. Yet it is a fact that previous sketches are drawn to several different formats/standards.

For example: for a roadway over roadway bridge, the clearances are shown on two elevations and no plan views. Should we change these to comply with the current format? Or, as long as they depict the intended purpose, will they be acceptable?

The drawings should conform to current standards. If the previous cycle drawings do not conform, the problem should be identified during the proposal development phase of the project and corrected during the report writing phase. If drawings that do not meet current standards are deemed to be acceptable during the project negotiations, then revisions are not required.



## PDF/SDMS

140. In an effort to better control the project budget, would it be possible to maintain the same PDF format procedure throughout the project duration?

The PDF procedure to be used is the one in effect at the time the work (PDF or indexing) is actually performed. Should this present a problem, the situation should be brought to the attention of the Department's Project Manager for resolution. However, we feel that the PDF procedure does not usually change radically during the short period when reports are being finalized. A significant change regarding the procedure for indexing reports has occurred. However, this was necessitated by the impending change from the old BDMS to the new SDMS (Structural Document Management System).

141. The electronic files (PDF) format would require a lot less effort if it can be done one report at a time after the comments are received from the bridge owner and the final report is being created. To 'PDF' all reports for a project at the end becomes a major undertaking. Why are the BDMS/SDMS requirements constantly changing?

The PDF/indexing requirements to be used are those in effect when the work is being done. If the work is spread over several months, the risk of a change while the work is being done is greater. However, a Consultant may wish to accept this risk. Our position is that if the Consultant accepts the risk, we will not consider requests for changes in the agreement ceilings necessitated by the need to redo work to comply with the standards in effect when the work is submitted.

We try to limit changes to the BDMS/SDMS to the extent possible. A major change was required to the indexing of reports when we switched from the BDMS to the SDMS which was unavoidable. The BDMS viewed several different files as a 'report' (ie, Report Summary, Calculations, Photos, etc.), the SDMS looks at a 'report' as a seamless document consisting of different files. Other smaller changes in the specifications are usually the result of clarifications identified by the Consultants/vendors actually doing the work.

142. In general, Consultants have to follow the scope that is in place during the negotiation of the Contract. For example, the reduced scope was not implemented on any on-going contract. (Same for typed Field Notes). Then why are the Consultants being forced to comply with PDF version 6 for all on-going or *almost* complete projects without any additional compensation?

Since reports are typically not PDFed until near the end of the project, usually more than a year (sometimes considerably more) will have passed since the scoping meeting. Considering how quickly technology advances, it was determined years ago that it was not prudent to freeze time where some technology is involved. This is why we have the requirement that you utilize the current version of the SDMS Specifications in place when the work is actually performed. Although we carefully consider the impact any change of our Specification will have on the consulting community, we cannot always eliminate those impacts entirely.

This being said, please note that Acrobat Version 6 was verbally recommended starting in late 2004, and was identified as the Standard in our July 2005 broadcast e-mail. Therefore, by now, this should not be a surprise. When we speak of Acrobat 6 being the "standard," what we are saying that this version of the software for which we have provided descriptions and tools for document creation, and is the version of software we use to measure whether you have produced files that comply with our specifications. We have found that Consultants using Acrobat version 5 often did not produce compliant files (partly due to

the difficulty of setting some internal settings), and as we do not have a copy of Acrobat version 7 we cannot test this version, nor can we provide any guidance or tools for complying with our standards.

143. Why does the Department not warn the Consultant Community that the PDF requirements are being revised, so do not spend our hours to prepare and send any PDF's? (instead of sitting at State for 3-6 months). Why does the Department take over 3 to 5 months to approve Format PDF? Why is Consultant Community required to keep revising to Comply with each revised version without any compensation?

When we have the ability to provide lead time to the Consultant Community, or provide for a staged implementation, we try to (Version 3.0 was a notable exception). However, with the shift to Version 3.0 of the SDMS Contractors Specifications, we expect the PDF specifications will be relatively stable for the foreseeable future.

We are aware of the long time frames referred to and are taking steps to improve the situation.

On the Consultant's side, we have tried to make the Specifications as clear as we can (including providing a checklist that points back to each section of the specifications in order to make it as easy as possible for someone relatively unfamiliar with our specification to check their work against the requirements). Some Consultants have taken the time to prepare a proper PDF CD, including performing good quality assurance on the files and CD, while others have not been nearly as thorough in their approach.

Also, as we do require Consultants to use the specifications in place when the work is actually performed, we have tried to be aware of when the files were actually created to be sure we apply the correct version of the specifications to them.

144. Why is the Consultant Rating affected if the PDF does not conform to the latest version, while the Department itself keeps finding bugs in its version?

Consultants are expected to submit proper PDF documents as these will be the version of the document referred to when seeking detailed information on a bridge inspection. Paper copies serve other (legal) purposes.

The few bugs we did find in version 3.0 of the specifications have now been corrected.