

ACEC/NCDOT
STRUCTURES SUBCOMMITTEE



Structures Conference Room C
August 7, 2023, 10:30 AM

MEETING MINUTES

1) Meeting Kick-off

- a) Meeting began at 10:30 AM
- b) New PEF Subcommittee Members were introduced
 - i) Emily Murray – Volkert
 - ii) Jeff Loftus – Moffat Nichol
- c) Previously approved and published minutes from 5-1-2023 meeting were reviewed. No additional comments were brought up.

2) Bridge Design Workshop Series

- a) The next scheduled workshop will be held on August 15, 2023 from 11:30AM-1:00PM at the McKimmon Center. Topic will be the Wando River Bridge Repairs. Kent Dickens (HDR) will be presenting.
- b) The Bridge Design Workshop tracking spreadsheet (dated 5-4-2023) was reviewed.
 - i) Target date for next workshop:
 - a. ACEC/NCDOT Joint Transportation Conference is scheduled for November 17, 2023, so November is not a good target for a workshop.
 - b. December is not a good timeframe due to holidays and exhaustion of training budget by end of year.
 - c. Best timeframe for a fall 2023 workshop would be sometime in October if possible. If not, defer to early 2024.
 - d. Based on the results of the action items listed in item (ii) below, Domenic C will summarize the options for Fall 2023 workshop topics in the next 1-2 weeks and circulate to the committee for input on choosing the preferred topic.
 - ii) Updates on current potential topics
 - a. T-051, OBD, ProjectWise, and PDN:
 - Nick Pierce presenting at NCLUG (August 21, 2023), will expose local bridge engineers about NCDOT's OBD status. Not quite ready for a lunch workshop, and may be good to pair with another topic to fill out the hour.
 - b. T-057, CMGC Delivery:
 - i. Brian H noted that the number of CMGC contracts is expected to increase as the legislature is authorizing more use of CMGC delivery, so now is a good time to have a presentation to educate

- the bridge community.
- ii. A presentation should involve Division staff (Josh Deyton, Zach Shuler in Division 14). Josh Deyton gave a presentation on CMGC at the recent NCDOT Preconstruction Workshop.
- iii. Presentation might be a tag-team effort (NCDOT as owner, PEF designer, and Contractor) to provide their various perspectives on the pros and cons of CMGC. Presentation might showcase an example project; could be that two projects are showcased to fill an hour workshop (one small bridge replacement project paired with a bigger multidisciplinary project).
- iv. Domenic C to contact Nicole B to see what she had in mind originally, then contact Division 14, etc. to see if there is interest/availability to present, and when the presentation might be ready.
- c. T-056, Harkers Island:
 - i. Construction is scheduled to be completed by October 2023 +/- . NCDOT would prefer to present after construction is completed, but we can hold as a candidate topic for the Fall 2023 workshop if other topics do not pan out.
- d. T-045, Pensacola Bay Bridge or Veteran’s Memorial Bridge:
 - i. Jake Sherman suggested a couple of years ago that WSP could provide a presentation on these projects. Projects sound interesting and applicable to NC (innovative use of precast concrete on complex coastal bridge projects).
 - ii. Liz L will check with Jake S to see if the presentation(s) are already ready (on the shelf) which would make scheduling by October 2023 easier.
- iii) New potential workshop topics:
 - a. Replacement of Alligator River Bridge – Could be a very interesting presentation topic in a few years after construction is largely complete.
 - b. National accelerated ABC projects (Volkert projects suggested by Emily M such as Lake Pontchartrain bridge widening). There are many good projects/presentations that have been highlighted in Florida International University’s (FIU’s) monthly ABC webinars and annual ABC conference.

3) **Training Opportunities**

- a) PCI Seminar update:
 - i) Last information is that Ray Clark (PCI) and Nicole Brown spoke at some point months ago; then Nicole handed off the coordination to Brad Bell. No news since then.
 - ii) The original plan was to try to schedule the workshop for Fall of 2023. However, at this point with no indication that PCI has secured a venue or potential speakers, it’s unlikely that the workshop will occur this year.
 - iii) Domenic C will contact Brad B and Nicole B for latest status and any historical notes, and then contact Ray Clark to gauge PCI interest,

- potential content, and potential venue/timing.
- b) NSBA Steel Bridge Forum:
 - i) Last Forum was October 2022. Target would be next fall (2024... late October or November).
 - ii) Goal is to have PCI and NSBA alternate workshops – NSBA one year, PCI the next year, etc.
 - iii) Domenic C will contact NSBA to start them thinking about a fall 2024 steel bridge forum in Raleigh.
 - c) NCLUG Conference:
 - i) Scheduled for August 21-23, 2023.
 - ii) Nick Pierce of SMU will lead a half-day Structures Workshop in the afternoon on Day 1, focused on NCDOT's Open Bridge and ProjectWise implementation status.
 - d) ACEC/NCDOT Joint Transportation Conference:
 - i) Scheduled for Friday, November 17, 2023.

4) **Anticipated PEF Opportunities**

- a) Selections for the next round of NCDOT SMU LSCs should be announced by 2nd week of September.
 - i) SMU will rely heavily on the LSCs.
 - ii) No further supplements are expected on the previous round of LSCs since the new LSCs will be in place soon (October).
 - iii) Number of selections and contract values for the new round of LSCs should be in line with previous years.
 - iv) Some work may be managed by PMU or Divisions but funded through SMU LSCs.
 - v) Focus will be on interstate bridges, plus replacement of timber bridges in several of the mountainous western divisions (e.g., Divisions 11, 13, 14, etc.).
 - vi) The prescreening of new projects is still ongoing. The prescreening report previously expected to come out this summer has been delayed and is expected to become available in the fall of this year. Once available, SMU will start prioritizing and assigning projects. Recently, SMU's 5-year Bridge Program has been overprogrammed, and so is not currently focused on starting new contracts, but once the new LSCs and the prescreening report are in place, new projects will start to be assigned.

5) **Technical Topics**

- a) Recent revisions to manuals, standards, etc.
 - i) Emergency Vehicle (EV) load rating policy, with updated LRFR Standard Drawings and revisions to the Structure Design Manual:
 - Policy Memo was released on 6-15-2023.
 - SMU has noticed that some recent designs are not rating satisfactorily for Design and Legal Loads when rated by SMU; in

those cases, SMU has to contact the PEF to have them provide their calculations and/or verify their rating calculations. SMU stressed that any and all assumptions associated with the initial design load rating should be stated on the LRFR drawing (e.g., if a bridge is designed as continuous for live load it should be so stated on the LRFR drawing).

- ii) Link slab revisions to the Structure Design Manual
 - Policy Memo was issued on June 15, 2023.
 - Includes revised pour sequence guidance for link slabs
- b) Upcoming revisions to manuals, standards, etc.
 - i) FIB Girder Standard Drawings and design guidance are coming soon.
 - ii) Sound barrier walls designs for wall heights up to 30' with new wind loads are coming soon.
 - Note: When faced with possible sound barrier walls on bridges... Be aware that per NCDOT policy, attachments to bridges are not preferred. There are no published standards for sound barrier walls on bridges. If necessary to attach something to a bridge (sound barrier walls, utilities, etc.), contact SMU for latest guidance.
 - Note: Availability of various bridge mounted sound barrier wall panel thicknesses has changed recently.
 - iii) Updates to Chapter 12 (Miscellaneous) to address revisions to corrosion design policy are on hold.
 - iv) Updates for the 2024 Standard Specifications are coming very soon.
 - Structures notes and standards should be updated by October 2023.
 - Approach fill standards and policies have been updated by the NCDOT Roadway Design Unit and Geotechnical Engineering Unit. NCDOT SMU is currently working on aligning the affected SMU standards (BAS standards) with the updated Roadway and Geotechnical standards and policies.
- c) Digital Delivery, OBD/Open X, and ProjectWise implementation
 - i) Liz L mentioned that there are various tiers of Microstations software, with various capabilities, limitations, and costs, and asked what NCDOT was going to require PEFs to use.
 - Open Bridge Designer (OBD) is top tier (and most expensive) and includes Open Bridge Modeler and the various LEAP and RM Bridge analysis and design software. OBD is geared toward bridge engineers.
 - Open Bridge Modeler (OBM) is also sold separately as a standalone package for producing 3D models without integration to the analysis and design software. OBM is geared more toward CADD staff.
 - Bentley Connect is the newer version of V8i geared toward general CADD use. Bentley Connect is geared toward any CADD user.
 - Open Roads Designer is for roadway design.
 - The choice of which tier/package is also complicated by how they function within the managed workspace.

- ii) NCDOT's policy on OBM, OBD, etc.:
 - NCDOT SMU's goal is to get to the Modeler level.
 - Historically SMU has not dictated design software... so by that historical approach only the plans would be required to be in Open Bridge.
 - SMU will talk with internal staff (Nick Pierce and James Hawke) to better understand the issues associated with the various packages and provide feedback to the PEFs.
- iii) See notes under Section 3.c. of these minutes regarding Open Bridge and ProjectWise presentations at the upcoming NCLUG Conference (August 21, 2023).
- iv) Nick Pierce of SMU is a member of the NCDOT Digital Delivery Steering Committee. NCDOT's plans for Digital Delivery implementation are still a work in progress, so SMU is not ready to comment on them yet. Watch for more updates in the future.
- v) NCDOT has updated to OpenBridge V10.12.
- vi) ProjectWise implementation:
 - Ultimate goal is to have PEFs working in NCDOT's ProjectWise (CAD work only, not analysis/design programs).
 - ACEC sent a survey recently to engineering community about using NCDOT ProjectWise.
 - NCDOT's ProjectWise folders have security measures to control access. These are similar to control of access to NCDOT SharePoint... only people who have been authorized access to a specific project can access the ProjectWise folders for that project.
- d) Research project updates
 - i) Integral abutment research wrapped up in July. Final report not received yet.
 - ii) Ongoing Strut and Tie research has had its schedule extended to end of 2024.
 - iii) SMU is currently reviewing Research Needs Statements for FY2025 research projects; the projects will be advertised soon. Structures-related research projects include:
 - Galvanized pipe piles.
 - Strut and tie design with FRP material.

6) **Open Discussion/Other Topics**

- a) Brian H shared photos of a bridge where drainage on the bridge deck was flowing to the approach slab and then flowing over the 4" sloped curb under routine storm conditions and washing out the approach fill. The bridge had Concrete Barrier Rail ending at the end of bridge and transitioning to guardrail on the approach slabs with standard attachment details. Brian is coordinating with other units to see if it would be possible to use vertical curb instead of the sloped curb in situations like this.

7) **Meeting Wrap-up**

- a) Main NCDOT SMU point of contact for coordinating logistics for these ACEC/NCDOT Structures Subcommittee meetings is Trey Carroll.
- b) Upcoming Meeting Schedule
 - i) November 6, 2023, 10:30 AM – 12:00 Noon
 - ii) February 5, 2024, 10:30 AM – 12:00 Noon
 - iii) May 6, 2024, 10:30 AM – 12:00 Noon
- c) Meeting ended at 12:00 noon.