

KYTC Division of Bridge Maintenance / ACEC-KY Bridge Subcommittee Partnering Meeting

May 2nd, 2019, 10:00 AM – 11:30 PM
Room 311

Minutes

These minutes provide an outline of discussions at the Division of Bridge Maintenance, Division of Structural Design, and ACEC Bridge Sub-Committee partnering meeting held at the Transportation Cabinet Office Building. Those in attendance were:

Josh Rogers	KYTC Division of Bridge Maintenance
Erin Van Zee	KYTC Division of Bridge Maintenance
Bart Asher	KYTC Division of Structural Design
Joseph Van Zee	KYTC Division of Structural Design
Carl Van Zee	KYTC Division of Structural Design
Aaron Stover	Michael Baker International
David Rust	Palmer Engineering
Bryan Reid	Lochner
Scott Ribble	Burgess and Niple
Steve Goodpaster	AEI
Wendy Harper	WSP

Discussion topics included:

1. **Purpose** – This meeting was requested by the Sub-Committee to continue the dialog with the Division of Bridge Maintenance (DOBM). The goal is to exchange feedback on bridge Design and Maintenance issues that could be addressed or avoided in future projects, resulting in more economical, easier to construct, and longer lasting bridges.

2. **Division of Bridge Maintenance Discussion Topics**

Status of Metrics (Inspection / Load Rating / Scour) – KTC is finishing load testing on some culverts. BRASS software was erroneously showing a bunch of culverts as failing. KTC is performing an envelope load test (they have done 3), and the rating factor is coming out 5-6. Erin said it is the walls that were failing in BRASS and they felt the modeling wasn't accurate.

PCAs were finished at the end of last year. Cross sections will continue to be prepared as needed as part of the routine inspection contract. A next date has been added related to cross sections in BrM.

When performing routine inspections of overpass bridges, inspectors should be noting deck patches on the top and any deterioration of the deck on the underside to note any potential for falling concrete. If there are dark spots or efflorescence be sure to bring it to the attention of the District Bridge Engineer ASAP.

3. Division of Structural Design Topics

Type 3 rail should no longer be used. Sepias for the new MASH compliant barrier will be posted to KYTC highway design standards. The preferred barrier is a 40" single-slope barrier, crash tested for TL-4 loading. There is also an option for a 36" barrier with a metal rail that could be used if sight distance is an issue. Any project let after 12/2019 should use the new barrier. *(Refer to TM 19-01)*

KYTC is getting rid of the Type 2 rail on side by side box beam bridges. Bridging KY Program has been using a Midwest guardrail system in place of the Type 2.

The price of Class A concrete, Class AA concrete, and Rebar has gone up 50% on recent lettings.

4. Follow-up from last meeting

- a. Coatings – Masonry and Deck Sealing** – Maintenance did a pilot project on about 50 bridges in D11 for deck sealing. There is a special note, but there is some confusion about the material specifications. DOBM is meeting soon with KTC to determine the specifications and may refine the required saturation rates.
- b. Maintenance Pilot Program** – DOBM has completed 2 projects in D9 and another in D3 to replace seals. Material prices have been good, and this has led to inhouse sealing of joints. D9 is looking at additional group of projects. Any time the DOBM is resealing joints they are specifying EMSEAL joints. They have been eliminating the sliding plates and replacing with strip seals.
- c. Updates to TAMP / Maintenance Practices** – KYTC is working toward an updated TAMP by June as required. The percentage of poor structures went up a little since they included culverts in the deck area. Full life cycle costs have not been fully incorporated, and additional project costs for Design/ROW/Utilities is needed.

5. New Topics

a. Field Inspection Observations

- 1. Integral End Bent Diaphragm cold joints Integral End Bents** –Discussed the potential for some seepage at the joint on integral end bents. DOSD

stated that there should be a good bond at that joint, so it shouldn't be happening, but we could specify leaving it roughened. Some plans already specify this.

- 2. Back to Back Barriers** – Accelerated deterioration has been noted on some bridges with back to back barriers. Current detailing practice would be for an open joint. Group discussed potential sealing of the joint, but no recommendations were made.
 - 3. Piers adjacent to Roadway** – The piers adjacent to the roadway and under joints have been shown to be prone to deterioration from salt spray. DOBM indicated that they are painting the pier caps/piers on rehab projects. Consultants may recommend using epoxy coated reinforcing steel in piers that are susceptible to salt spray during the Stage I Preliminary design submittal. DOSD will indicate the recommendations are accepted in the review comments for that submittal.
- b. Problems with Bridge Joints** – DOBM has seen an increased rate of issues with joints on design-build jobs failing due to improper construction and is concerned about the level of construction oversight for these issues. On I-24 over the Tennessee River the finger joints were replaced with modular joints. DOBM prefers the joints to be anchored to the steel instead of in the concrete block in the diaphragm. KY-90 was a good detail.
 - c. BrM Element Level Deterioration inconsistencies** – Improvements in BrM have been seen in each cycle of inspections. ACEC did raise concerns that BrM still is allowing defects which do not correspond to the element to be entered. This can lead to inconsistencies in the inspection records. For example, steel cracking (Defect 1010) can be selected on concrete elements instead of Defect 1130 for RC cracking or Defect 1110 for PSC cracking.

There is not currently an appropriate element for aggradation in culverts. Districts use a variety of elements to capture this condition. It is recommended that a new ADE be created to promote consistency across inspectors.

KYTC plans to add a new field for bridge replacement data and the date for the next inspection.

- d. Updated Manual for Bridge Element Inspection** – It was noted that an updated MBEI was released a few weeks prior. No significant revisions were noted.

- e. **NHI Training / Refresher** – KYTC will over the two-week NHI training in the fall and the fracture critical class later this year. They are also considering the NHI Substructure design class.
- f. **Cathodic Protection** – DOBM wouldn't mind utilizing cathodic protection on future projects but is concerned it may be costly. Concerns were raised about specifying proprietary systems and sole source providers. It was noted that ODOT has a supplemental specification and it is priced per square foot. KYTC would like to see KTC get involved to act as an independent tester. Any new material that is not in the spec requires a special note and materials would have to test every different product. It was also noted that Florida has a specification and an approved product list that KYTC could use as an example.

6. Future Meetings

- a. **Partnering Conference Planning Meeting with DOSD** – The ACEC Bridge Subcommittee offered assistance with soliciting presentations and topics for the Partnering Conference. Carl Van Zee recently put out a call for Abstracts. The two groups will wait and see the response to see if additional presenters need to be identified.
- b. **Meeting with Division of Construction (Dec. 2019)** – It was agreed by all in attendance that having KYTC Bridge Preservation in attendance at this meeting would further benefit the collaboration effort. ACEC will extend invitation in 2019.
- c. **Spring 2020** – The group agreed to meet again in the Spring of 2019.