

MINUTES OF AGC-DOT JOINT BRIDGE SUBCOMMITTEE MEETING

(Approved: 4/8/15)

The AGC-DOT Joint Bridge Subcommittee met on October 8th, 2014. Those in attendance were:

Greg Perfetti	Director of Field Support (Co-Chairman)
Berry Jenkins	Carolinas AGC - Highway Division Director (Co-Chairman)
Ron Hancock	State Construction Engineer
Kevin Bowen	State Bridge Construction Engineer
Brian Hanks	Assistant State Structures Management Engineer
Bill Heston	Balfour Beatty Infrastructure
Lee Bradley	Blythe Construction, Inc.
Chris Britton	Buckeye Bridge, LLC
Adam Holcomb	Dane Construction, Inc.
Don Tutterow	The Hurley Group
Chris Powers	Lee Construction Co. of the Carolina, Inc.
Randall Gattis	Sanford Contractors, Inc.
Larry Cagle	Thompson-Arthur Div., APAC-Atlantic, Inc.
Scott Hidden	Geotechnical – Support Services Supervisor
Chris Kreider	Geotechnical – Eastern Regional Operations Engineer
Randy Porter	Materials and Tests – Metals Engineer
Darren Scott	Materials and Tests – Structural Members Engineer
Paul Garrett	Structures Management Project Engineer
Paul Lambert	Structures Management Project Engineer
Bill Goodwin	Structures Management Staff Engineer
Todd Garrison	Structures Management Engineer (Subcommittee Secretary)

1. Approval of Minutes

The minutes of the August 20th, 2014 meeting were approved.

2. Bridge Program Update

Mr. Perfetti provided the committee with an update on Bridge Program funding. First, under the Strategic Transportation Initiative (STI), Federal funding for Centrally let bridge replacement projects will be reduced from approximately \$130 million per year to \$100 million in FFY 2016, \$75 million in FFY 2017 and \$50 million per year thereafter. However, State (HFB) funds will be used to fund the bridge replacement projects that are no longer federally funded. These Central let projects will still carry the B-#### designation whether State or Federally funded. Second, Division managed bridge replacement projects are estimated to total \$85 million in SFY 2015 and \$75 million in SFY 2016. Last, it is anticipated that there will be preservation projects amounting to \$10 million in FFY 2015 and \$35 million in SFY 2016. It was emphasized that the Department intends to ramp up preservation activities in order to prevent bridges from becoming Structurally Deficient and extend service life. A table providing information regarding maintenance activities with respect to bridge age was distributed. The maintenance activities range from minimal needs to major rehabilitation or total replacement. The tables that Mr. Perfetti presented during the meeting are attached on the pages following the meeting minutes.

3. NCGO – Public Education Campaign

Mr. Jenkins informed the committee of an advocacy coalition called NCGO. This coalition is composed of members representing a variety of interest groups, including but not limited to engineers, highway administrators, and legislative officials. The purpose of this coalition is to coordinate with NCDOT and educate the public on the importance of investment in transportation. The group hopes to show that funding for bridge projects, including both new construction and needed maintenance, can provide improvements to the community with respect to safety, access for schools/churches and emergency routes.

Attendees were asked to provide Mr. Jenkins with creative suggestions to ensure the success of the coalition.

4. Continuous for Live Load Bent Diaphragms

Mr. Gattis expressed his concerns to the committee regarding continuous for live load bent diaphragms for prestressed concrete girder bridges. He stated that the diaphragms require an excessive amount of formwork, are difficult and time consuming to construct due to limited access, and commonly result in cracking in the concrete deck and diaphragms before the bridge is open to traffic. He discussed a Wilmington project that contained multiple bridges with various span lengths, girder types, and skews. He suggested pouring the diaphragm full depth to the top of the bent cap in the interior girder bays instead of the standard partial depth to the bottom of the girder, as he felt this would help support this massive load of concrete once the forms are stripped.

Mr. Gattis asked members of Structures Management if the continuous diaphragms were first introduced to provide earthquake resistance. Mr. Perfetti explained that the main purpose of these diaphragms at interior bent locations is for joint elimination.

Structures Management will investigate and compare details from other States, as well as establish criteria for when link slabs may be used as an alternative to the continuous for live load bent diaphragms.

5. Additional Usage of Fly-Ash

Mr. Bowen stated that legislation has been passed which requires the Department of Transportation to evaluate additional uses of fly ash and report our findings back to the Transportation Oversight Committee by December 1, 2014. Fly-ash is currently required in bridge decks only in Divisions 5, 7, and 9 through 14. The Construction Unit is currently developing a proposal that would require the use of fly-ash in all bridge decks, approach slabs, and concrete pavement statewide. After some concern was expressed over current fly-ash supplies being in a constant state of flux, Mr. Hancock mentioned a possible increase in fly-ash production throughout the State, and that the use of the product in bridge decks and concrete pavement would be beneficial. He noted that the problem of alkali-silica reaction (ASR) that occurs within some concrete mixes due to certain properties of the mix components would be mitigated by the use of fly-ash. Permeability of our bridge deck concrete would decrease due to an increase in fly-ash.

The Construction Unit will evaluate our current policy on fly-ash, propose changes to meet the legislative request for additional usage, and provide us with some positive benefits at the same time. They will also evaluate current fly-ash supply issues before making the policy effective.

6. Other

Mr. Perfetti announced his promotion to the Director of Field Support. He thanked the committee for their support over the years and stated that he hoped to fill the committee Co-Chairman position soon.

7. Next Meeting

The next meeting is scheduled for December 10th, 2014 in the Structures Management Conference Room C.

Post Meeting Notes

Due to a limited agenda, the December 10th, 2014 meeting was cancelled.

Due to schedule conflicts, the February 11th, 2015 meeting was rescheduled for February 18th, 2015.

Due to inclement weather, the February 18th, 2015 meeting was cancelled.

The next meeting is scheduled for April 8th, 2015.

Bridge Program [STI & HFB] Estimate for FFY 2015-2024

FFY	Lets	STI	Lets	HFB	Lets	Total
2015	29	\$133M	-	-	29	\$133M
2016	26	\$77M	20	\$35M	46	\$112M
2017	17	\$56M	25	\$49M	42	\$105M
2018	18	\$72M	53	\$74M	71	\$146M
2019	17	\$49M	37	\$71M	54	\$130M
2020	23	\$34M	38	\$68M	61	\$102M
2021	41	\$61M	40	\$65M	81	\$126M
2022	29	\$66M	50	\$63M	79	\$129M
2023	24	\$64M	55	\$62M	79	\$126M
2024	24	\$47M	39	\$62M	63	\$109M

Strategic Transportation Initiative [STI] [Federal Aid] funding for bridge projects is being reduced over the next few years from over \$130M per year to between \$50M and \$60M per year.

About half of this money will be spent on NHS [National Highway System] route bridges and half will be spent on non-NHS route bridges.

A proposal has been put forward that would provide approximately \$100M per year to fund centrally let bridge replacement projects using State funds.

State funding is represented in the chart by the HFB designation (Highway Fund Bridge). Construction costs, only, shown.

These HFB projects are mainly former STIP funded projects that will no longer be funded using Federal funds but will be able to stay “on-schedule” via the use of Highway Fund monies.

Division Managed Bridge Program

Division	SFY 15	SFY 16
1	\$7.9M	\$6.2M
2	\$0.0M	\$2.1M
3	\$7.7M	\$7.3M
4	\$8.5M	\$5.6M
5	\$5.3M	\$5.0M
6	\$8.2M	\$7.1M
7	\$13.5M	\$8.9M
8	\$0.0M	\$5.6M
9	\$17.0M	\$7.4M
10	\$5.0M	\$5.5M
11	\$0.0M	\$0.0M
12	\$4.4M	\$3.1M
13	\$0.0M	\$0.0M
14	\$7.7M	\$11.5M
Total	\$85M	\$75M

Division/Central Bridge Preservation

FFY 2015 \$10M
 SFY 2016 \$35M

Express Design Build Projects

Anticipated advertisements in November 2014

Division 6: 1 contract 8 bridges (Columbus Co)
 Division 7: 2 contracts 9 bridges (Guilford Co) 8 bridges (Orange Co)

Lettings in April thru June 2015

Division 9: May have 1 or 2 contracts (to be determined)

DRAFT Bridge Information By Age							
Age	Number of Bridges	Number of SD by Age	Percent SD By Age	Totals, General Condition and Mobility Impact	Need		
0	123				NEW SOUND BRIDGE NEEDS: MINIMAL MAINTENANCE		
1	298						
2	252						
3	140						
4	146						
5	192						
6	246						
8	203						
9	249						
10	156						
11	192						
12	189						
13	169						
14	142						
15	171						
16	169						
17	173						
18	129						
19	135						
20	159						
21	159						
22	134						
23	117						
24	141						
25	99						
26	118						
27	118						
28	145						
29	103						
30	87	1	1%	Approximately 2,500 bridges are between 30 and 45 years old and are beginning to require increased maintenance. Limited service disruptions for maintenance activities are required .	SOUND BRIDGE NEEDS: PREVENTATIVE MAINTENANCE TO DELAY DETERIORATION		
31	81	2	2%				
32	101	3	3%				
33	166	6	4%				
34	195	7	4%				
35	156	9	6%				
36	152	7	5%				
37	197	22	11%				
38	187	20	11%				
AVERAGE BRIDGE AGE	39	167	26			16%	
40	134	16	12%				
41	199	28	14%				
42	171	23	13%				
43	176	38	22%				
44	202	33	16%				
45	215	36	17%				
46	312	63	20%			Approximately 4,300 bridges are between 46 and 59 year old and are in need of replacement or rehabilitation. Maintenance activities are regularly required and service disruptions expected to be increasing .	AGING BRIDGE NEEDS: REHABILITATION IN NEAR FUTURE OR REPLACEMENT REQUIRED SOON
47	295	89	30%				
48	240	67	28%				
49	217	74	34%				
50	236	87	37%				
51	388	112	29%				
52	359	140	39%				
53	409	132	32%				
54	379	126	33%				
55	304	94	31%				
56	311	82	26%				
57	321	77	24%				
58	279	91	33%				
59	258	84	33%				
60	143	66	46%	Approximately 1,600 bridges are 60 years or older and have outlived their original design life. These bridges generally require replacement. Service disruptions for maintenance until the bridges are replaced expected to be frequent .	OLDER BRIDGE NEEDS: REPLACEMENT		
61	135	53	39%				
62	186	70	38%				
63	218	82	38%				
64	172	61	35%				
65	49	23	47%				
66	44	20	45%				
67	31	14	45%				
68	9	5	56%				
69	15	4	27%				
70	4	3					
71	1	1					
72	6	3					
73	22	8					
74	66	21					
75	30	7					
76	27	8					
77	23	3					
78	37	8					
79	30	5					
80	12	3					
81	3	0					
82	10	1					
83	8	4					
84	23	6					
85	30	7					
86	17	4					
87	11	1					
88	24	3					
89	25	6					
90	21	2					
91	48	12					
92	77	10					
93	58	7					
94	37	13					
95	2	1					
96	2	0					
98	1	0					
99	2	0					
104	2	1					
105	1	0					
104	2	1					
105	1	1					

Benefits of an Extensive Preservation and Rehabilitation Program

Funding for effective preventative maintenance would **preserve** the State's sound bridges **and extend** the **period of limited disruption** for approximately 15 years



Funding for rehabilitation and preventative maintenance would **delay** the need for **replacement and the period of frequent maintenance and service disruptions**.



Goal is to **extend** the **service life** of bridges **from 60 years to** approximately **75 years**.