South Carolina Department of Transportation

NON-CONFIDENTIAL DESIGN-BUILD QUESTIONS
Bridge Package 20 - Contract ID 5462320 - Chesterfield, Fairfield, Lancaster, and York Counties

FINAL RFP - ROUND 1

Date Received: 9/14/2023 Meeting Date: 9/19/2023

					SCDOT	
Question No.	Category	Section	Page / Doc No.	Question/Comment	Response	Explanation
1	Attach_B	Hydraulics		This question or request for clarification is centered around the Lancaster S-292 bridge. In our hydraulic investigations we have discovered some issues that likely need to be addressed with an Addendum. Bridge Impacts The bridge is in a FEMA Flood Zone AE and is part of a designated Floodway. The water surface elevation at the bridge is controlled by the downstream backwater from Cane Creek. The conceptual model does not include FEMA data or the downstream controlling backwater. When these are included in the model the controlling water surface (WSE) rises from 435 feet to approximately 440 feet. Our preliminary assessments indicate this rise in WSE could require a new bridge length in excess of 750 feet with the low chord at that 440-foot elevation. Roadway Impacts In addition to the issues above, the existing conditions model indicates overtopping on S-292 for multiple storm events with the worst case being approximately 4-feet of overtopping during 100-year storm event. The FEMA Flood Insurance Study also indicates significant flooding both downstream and upstream of this bridge location. The hydraulic model provided for the conceptual design does not eliminate the overtopping of S-292 when the backwater from Cane Creek is incorporated. Since S-292 does not fall under low volume criteria, overtopping is not allowed at this location. The low point on the centerline of S-292 is approximately 775 feet south of the existing bridge end and it has an elevation of 433.5. To prevent overtopping, the roadway embankment would need to be raised past this location and the shoulders would need to be above the 440-foot elevation mark. Schedule Impacts Obtaining the necessary FEMA model will take several months if one exists. If no model exists, one will need to be created and will require extensive upstream and downstream surveys of the floodway. This up-front modeling will need to be completed and accepted by FEMA prior to beginning any design efforts for this location, putting the 780-day project completion schedule in jeopardy. The required roadway and bridge embankment needed here would also result in a CLOMR/LOMR process which would add several more months to the project schedule. Summary In conclusion, without a change in hydraulic requirements for this location, there would be major impacts to the project limits, adjacent driveways, property access, and right of way. There would also be a significant risk for scope, cost, and schedule escalation. To avoid these impacts, this location will require either a Design Variance, or an addendum to allow both pressure flow at the bridge and overtopping on S-292.	Revision	The answer is forthcoming.

Post Office Box 191
Columbia, South Carolina 29202-0191

Phone: (803) 737-2314
TTY: (803) 737-3870

2	Attach_A	Exhibit 4f	Page 5 / Section 2.3	RFP indicates *"Use of discrete elements or rigid inclusions for soil shear strength loss (SSL) mitigation using area replacement ratio, shear modulus ratio, and shear stress reduction methodology are not permitted. Additionally, methods proposed to mitigate soil SSL that do not include densification or excess pore pressure reduction are not permitted."* Will the use of stone columns, pile supported embankments or vibro-compaction be accepted as methods to mitigate soil SSL?	No_Revision	Yes, depending on the design methodolgy used. Design methodology prohibited by the RFP may not be used. If the ground improvements are specifically being used to mitigate soil SSL i.e. no SSL occurs, then the design methodolgy used shall demonstrate that the appropriate densification or drainage can be achieved. If the ground improvements are specifically being used to mitigate the effects of soil SSL, i.e. SSL occurs and discrete elements are used to structurally resist the effects of displacement caused by soil SSL, then the design methodology shall demonstrate the appropriate structural resistance can be achieved.
3	Attach_A	Exhibit_3	Page 1 / Bottom of Page	RFP states *"For the S-292 bridge site provide a clearance envelope 8 feet high by 15 feet wide to accommodate a future greenway. The clearance envelope shall be placed on the southern end of the bridge outside of the bridge end fill and outside of the channel."* It also states *"S-292 (Plantation Road) shall accommodate the future construction of the Lindsay Pettus Greenway as outlined in the scope of this project."* What offsets need to be considered between the Greenway and the toe of fill and between the Greenway and the top of channel banks? Does the envelope mentioned in the scope of work include full typical dimension of the Greenway to include shoulders, or does the 15' only cover the concrete portion of the path?	Revision	15' encompasses the full typical width. Envelope needs to be provided for the entire limits of SCDOT R/W around all sides of the embankment slope to allow for future construction of the greenway. Grading of the future pathway is not a requirement.
	Attach_A	Exhibit_4a	Page 5 / Section 2.14			
4	Attach_B	Survey	S1086_York	Survey data for S-1086 has survey beginning at station 40+00 with the existing bridge around station 55+50.00. Conceptual plans have the existing bridge at station 35+50.00. While we understand conceptual plans are for information only, please confirm technical proposal plans should follow the same stationing as the survey data.	No_Revision	Confirmed, use survey data stationing.
5	PIP	Environmental	Delineated Waters	The delineated waters shape files indicated the waters around the causeways on Chesterfield S-296 are considered Open Waters and not Wetlands or Streams. If these areas are impacted as part of design, and the controlling regulatory agency deems the area impacted as streams or wetlands requiring mitigation, will SCDOT consider an allowance, or provide relief for the necesssary credits? This is a risk to carry considering a final determination would not be made until post award.	No_Revision	Mitigation for open water impacts are expected to be addressed by wetland mitigation credits. Exhibit 6 criteria will apply.
6	Attach_A	Exhibit 4e	Page 3 / Section 2.2.1.3	Please clarify correct AEP event for Freeboard.	Revision	Exhibit 4e will be revised.
7	RFP	3	Page 9 of 40 / Section 3.8.1	Would SCDOT consider revising the maximum number of ATCs from 7 to 10?	Revision	Yes.
8	Attach_A	Exhibit_3	1	For S-292, is the gauge on the west side of the bridge to be replaced? What are the requirements?	No_Revision	PCDM-21- AD office will start coordination with SCDOT support office.
9	Attach_A	Exhibit_3	1	For S-998, are the gauge and solar panel on the south side of the bridge to be replaced? What are the requirements?	No_Revision	PCDM-21- AD office will start coordination with SCDOT support office.
10	Attach_A	Exhibit_4a	3	Section 2.7 states "Develop vertical curves, grades, and clearances in compliance with SCDOT Roadway Design Manual." For the non-Low Volume Bridge Sites, is SCDOT requiring grade adjusted stopping sight distance for grades 3% or greater?	No_Revision	No. Grade adjustments are a design consideration where practical, not a requirement for these bridge replacement sites.

11	Attach_A	Exhibit_4a	3	Section 2.7 states “In no case shall a K value be less than the existing.” If the existing K value exceeds the K value for the design speed, is SCDOT still requiring the existing K value be met?	Revision	If the existing K value exceeds the minimum K value for the design speed, the proposed K value can be reduced to meet the minimum requirements of the design speed (not the 15 mph range allowed on low volume bridge replacements). For example, if the existing vertical curve has a K value of 68 & the design speed is 40 mph, a proposed K value of 64 is acceptable. RFP will be revised to clarify.
12	Attach_A	Exhibit_4a	3	Section 2.7 states “For the low volume bridge replacement sites, if the existing K value is within 15 mph of the design speed retain or improve the K value….In no case shall a K value be less than the existing.” For S-531, the As-builts show a K value of 61, and the Project Information Package Conceptual Roadway Plans are using K values of 53 and 50. Was there an exception to the criteria, to use a K value less than the existing, approved for this site?	Revision	The plans provided in the PIP are for information only. K values should not be less than the existing conditions, except when the existing K value exceeds the design speed (not 15 mph allowable range) minimum requirements. RFP will be revised to clarify.
13	Attach_A	Exhibit_4a	3	Section 2.7 states "Develop vertical curves, grades, and clearances in compliance with SCDOT Roadway Design Manual" and "Do not use spline grades." The Project Information Package Conceptual Roadway Plans appear to show a grade break up to 0.5% at the project tie ins (for S-130, S-296, S-998, S-1086) with no vertical curve. Is SCDOT allowing this grade break?	No_Revision	The plans provided in the PIP are for information only. Smooth transitions should be provided to tie into the existing grades. Vertical PI with no curves are not allowable.
14	Attach_A	Exhibit 4e	3	Section 2.2.1.3 Freeboard states "Shall not be less than 2 feet between the Low Chord elevation and the proposed 2% AEP (25 year event) for full criteria sites." It appears the wrong text was struck through, and 4% AEP should be listed in the final version. Please confirm.	Revision	Exhibit 4e will be revised.
15	PIP	Roadway	1	For S-296, the Project Information Package Conceptual Plans show 4% superelevation on the bridge and 6% on both roadway approaches. Is there an approved design exception to reduce the superelevation across the bridge?	Revision	RFP has been updated to address this specific location and the use of an adjusted superelevation to meet bridge SE requirements.
16	Attach_A	Exhibit_3	1	Exhibit states "For the S-292 bridge site provide a clearance envelope 8 feet high by 15 feet wide to accommodate a future greenway. The clearance envelope shall be placed on the southern end of the bridge outside of the bridge end fill and outside of the channel." Please clarify if envelope needs to be provided directly beneath the bridge or also around all sides of the embankment slope, particularly in the south-east quadrant.	Revision	Yes, envelope needs to be provided for the entire limits of SCDOT R/W around all sides of the embankment slope to allow for future construction of the greenway. Grading of the future pathway is not a requirement.