PROVISIONAL High-Water Mark Elevations at Selected South Carolina Department of Transportation (SCDOT) Stream Crossings for the Floods of October 2015 associated with Hurricane Joaquin

High-water mark elevations are provisional and subject to change following additional quality-assurance checks.

[U/S, upstream; D/S, downstream; HWM, high-water mark; US, United States; SC, South Carolina; I, Interstate; S, secondary route;UL upstream left; UR upstream right; DL, downstream left; DR, downstream right; E, excellent; G, good; F, fair; P poor; VP, very poor]

							Upstream left		Upstream right		
Site No.	Road	Crossing	County	SCDOT Structure Number (Main channel only, if applicable)	Latitude	Longitude	HWM number and quality	HWM elevation, ft	HWM number and quality	HWM elevation, ft	Remarks
1	I-126	Broad River	Richland	4010012640100							
							1UL1P	150.9	No HWMs		
							1UL2P	151.2			
							1UL3F	151.4			High-water mark 1UL3F was selected because it was the best mark. High-water mark 1UL1P was a wash line, and HWM 1UL2P was a poor seedline. All three HWMs agreed within 0.5 ft.
							Average	151.2	Average	Not determined	
								U/S HWM elevation, ft			
					34.013781	-81.060483		151.4			
							Downstream left		Downstream right		
							1DL1P	147.0	1DR1P	149.0	
							1DL2E	149.0	1DR2F	148.3	Used average of HWMs 1DL2E, and 1DR1P. High-water mark 1DL2E was an excellent seedline on the downstream bridge pier, and HWM 1DL1P is a poor wash line that confirms HWM 1DL2E.
							Average	148.0	Average	148.6	
								D/S HWM elevation, ft			
					34.008842	-81.060355		149.0			
							Bridge Deck elevation, ft	167.6	Downstream left corner on dowstream bridge		
							Upstream left		Upstream right		
2	I-20	Broad River	Richland	4010002000100			HWM number and quality	HWM elevation, ft	HWM number and quality	HWM elevation, ft	
							2UL1E	164.1	2UR1E	165.8	High-water mark 2UR1E was selected because it was in a protected location with ponded water (inside a concrete pipe section that was discarded). HWM 2UL1G was likely from the recession or a secondary peak.
							Average	164.1	Average	165.8	
								U/S HWM elevation, ft			
					34.052121	-81.074363		165.8			
							Downstream left		Downstream right		
							No HWMs		2DR1P	162.7	
							Average	Not determined	Average	162.7	
											High-water mark 2DR1P was a mudline on all the piers at the hydraulic exit of bridge.
								D/S HWM elevation, ft			
					34.047792	-81.073215		162.7			
							Bridge Deck elevation, ft	177.5	Right downstream corner of bridge		

							Upstream left		Upstream right		
3	I-20	Saluda River	Lexington	3210002000400			HWM number and quality	HWM elevation, ft	HWM number and quality	HWM elevation, ft	
							3UL1P	179.4	3UR1E	185.6	
							3UL2P	183.4			High-water mark 3UR1E was selected because it was the best mark. This mark was found on the side of a house on right bank; the other 2 HWMs on left bank were poor seedlines on trees.
							Average	181.4	Average	185.6	
								U/S HWM elevation, ft			
					34.026189	-81.131028		185.6			
							Downstream left		Downstream right		
							3DL1P	181.3	3DR1P	182.5	
							3DL2F	181.9			
							Average	181.6	Average	182.5	Used the average of all three HWMs. The average agrees with the highest quality mark of the group.
								D/S HWM elevation, ft			
					34.025443	-81.12835		181.9			
							Bridge Deck elevation, ft	191.6	Right upstream corner of bridge		
							Upstream left		Upstream right		
6	I-26	Saluda	Richland/Lexington	3210002600400			HWM number and quality	HWM elevation, ft	HWM number and quality	HWM elevation, ft	
							6UL1E	173.7	6UR1F	174.1	
									6UR2F	173.2	
									6UR3F	173.0	High-water mark 6UL1E was selected as the upstream elevation. All other HWMs justify the selection. High-water mark 6UL1E was excellent located inside a shed.
							Average	173.7	Average	173.4	
								U/S HWM elevation, ft			
					34.023526	-81.106601		173.7			
							Downstream left		Downstream right		
							6DL1E	168.6	No HWMs		
							Average	168.6	Average	Not determined	HWM 6DL1E was an excellent seed line on a pier at the exit of the bridge.
								D/S HWM elevation, ft			
					34.023924	-81.103157		168.6			
							Bridge Deck elevation, ft	186.4	Downstream left corner of bridge		

							Upstream left		Upstream right		
7	I-77	Congaree	Richland	3210007730500			HWM number and quality	HWM elevation, ft	HWM number and quality	HWM elevation, ft	The average of the HWMs on the right bank were selected for the upstream elevation. The left upstream HWMs were located on trees around a ditch in the middle of some farm fields. Those HWMs could have come from receding water levels in the ditch. A Level Three survey was done at this site, therefore, high-water mark elevations are reported to the nearest foot.
							7UL1P	128	7UR1F	135	
							7UL2P	128	7UR2P	135	
							Average	128	Average	135	
								U/S HWM elevation, ft			
					33.935865	-81.019087		135			
							Downstream left		Downstream right		
							7DL1E	134	7DR1G	124	HWM 7DL1E was selected. HWM 7DR1G must be from secondary peak. A Level Three survey was done at this site, therefore, high-water mark elevations are reported to the nearest foot.
							Average	134	Average	124	
								D/S HWM elevation, ft			
					33.932106	-81.017341		134			
							Bridge Deck elevation, ft	Not determined	All temporary benchmarks were set (1) below the bridge on the floodplain or (2) approximately 1,000 ft upstream from the bridge.		
							Upstream left		Upstream right		
13	US1/378	Congaree River	Richland/Lexington	4020000100100			HWM number and quality	HWM elevation, ft	HWM number and quality	HWM elevation, ft	High-water mark 13UL1E is a seedline on the inside of old pump house in the Columbia Canal Park. The HWM was found inside where water had equalized and was ponded.
							13UL1E	146.4	13UR1G	145.7	
							Average	146.4	Average	145.7	
								U/S HWM elevation, ft			
					33.998494	-81.0529		146.4			
							Downstream left		Downstream right		
							No HWMs		13DR1E	144.4	High-water mark 13DRE is a seedline on the abutment side of first bridge pier from right abutment.
							Average		Average	144.4	
								D/S HWM elevation, ft			
					33.995744	-81.050687		144.4			
							Bridge Deck elevation, ft	163.7	Downstream Right corner of Bridge		

							Upstream left		Upstream right		
25	US 21/176/321	Congaree River	Richland/Lexington	3220002100800			HWM number and quality	HWM elevation, ft	HWM number and quality	HWM elevation, ft	
							Gage Height	144.8	No HWMs		
							Average	144.8	Average	Not determined	
											Used the peak gage height for USGS gaging station 02169500, Congaree River at Columbia, SC.
								U/S HWM elevation, ft			
					33.993056	-81.05		144.8			
							Downstream left		Downstream right		
									25DR1E	143.3	
							Average		Average	143.3	
											HWM 25DR1E is an excellent seedline on downstream pier on right side of bridge.
								D/S HWM elevation, ft			
					33.987851	-81.046707		143.3			
							Bridge Deck elevation, ft	159.4	Right upstream corner of bridge.		
							Upstream left		Upstream right		
34	US 601	Congaree River	Richland/Calhoun	0920060100300			HWM number and quality	HWM elevation, ft	HWM number and quality	HWM elevation, ft	
							34UL1P	92.0	34UR1P	90.2	
							34UL2P	92.3	34UR2P	90.2	
							Average	92.2	Average	90.2	
								U/S HWM elevation, ft			Used average elevation of HWMs on the left bank.
					33.756811	-80.648798		92.2			
							Downstream left		Downstream right		
							34DL1P	91.7	34DR1P	89.6	
							34DL2P	91.4	34DR2P	91.4	
							Average	91.6	Average	90.5	Used average of high-water HWMs 34DL1P, 34DL2P, and 34DR2P, which agree within 0.3 ft.
								D/S HWM elevation, ft			
					33.752738	-80.64523		91.5			
							Bridge Deck elevation, ft	Not determined	Temporary benchmarks were not located near bridge.		