Instructions for performing a hydraulic study for ODOT bridge when site is located in a FEMA zone AE

The study will be performed using ODOT survey for your HECRAS cross sections and the Q 2 - Q 500 as found using current ODOT standard methods. This is the data that will appear on the plans.

<u>CHECK RUN</u> - An additional profile will be run through all three geometries using the FEMA FIS Q 100 with the boundary condition being the known water surface elevation as interpolated from the FIS to your beginning cross section. This "check run" is the water surface elevation that we use to compare to the open channel run (if no bridge existed in the FEMA FIS study) or the existing run (if there was a bridge in the FEMA FIS study) to get a zero rise. This data will be provided in an additional line in the comparison table, not in the hydraulic summary.

In the case where a zero rise cannot be achieved using this method, bridge division will request the detailed study from FEMA, and a CLOMR will be completed. A CLOMR or use of any FEMA modeling will only be accepted and only be paid for if you have been requested by this office to do so.

We do not use the FEMA detailed study to design ODOT on - system bridges

We do not use the FEMA FIS flows or water surface elevations for the hydraulic data that is put on ODOT plans

Example: This location has a zero rise over existing therefore no CLOMR

	price of the							
Discharges (CFS)		Computed Water Surface Elev. (FT)						
		Existing 3-36' I-BM Spans		Backwater	Proposed 75'-45' Type III PCB Spans		Backwater	
		Low Beam (ft) =	987.90		Low Beam (ft) =	985.68		
857	970.48	970.82		0.34	970.81		0.33	
1780	973.34	973.68		0.34	973.56		0.22	
2680	975.36	975.76		0.40	975.53		0.17	
4160	977.61	978.16		0.55	977.81		0.20	
5380	978.86	979.64		0.78	979.15		0.29	
6710	980.01	981.12		1.11	980.52		0.51	
8588	984.02	984.86		0.84	984.57		0.55	
10700	983.29	983.88		0.59	984.45		1.16	
		Overtopping Elev (ft) =	990.02		Overtopping Elev (ft) =	990.02		
		Overtopping Q (cfs) ≈	>10700		Overtopping Q (cfs) ≈	>10700		
		Overtopping Freq (yr) ≈	>500		Overtopping Freq (yr) ≈	>500		
	857 1780 2680 4160 5380 6710 8588	857 970.48 0pen Channel 857 970.48 1780 973.34 2680 975.36 4160 977.61 5380 978.86 6710 980.01 8588 984.02	es (CFS) Dpen Channel Existing 3-36 Spans Low Beam (ft) = 857 970.48 970.82 1780 973.34 973.68 975.36 975.36 975.36 975.36 975.64 5380 976.85 979.64 6710 980.01 981.12 8588 984.02 984.88 10700 983.29 983.88 Overtopping Elev (ft) = Overtopping Q (cfs) ≈ Overtopping Q (cfs) ≈ Overtopping Overtopping Q (cfs) ≈ Overtopping Q (cfs) ≈ Overtopping	ss (CFS) Dpen Channel Existing 3-36' I-BM Spans Low Beam (ft) = 987.90 Low Beam (ft) = 987.90 Low Beam (ft) = 987.90 857 970.48 970.82 1780 973.34 973.68 2680 975.36 975.76 4160 977.61 978.16 5380 978.86 979.64 6710 980.01 981.12 8588 984.02 984.86 10700 983.29 988.88 Cvertopping Q (cfs) ≈ Dvertopping D (cfs) ≈	Signer Open Channel Existing 3-36' I-BM Spans Backwater Low Beam (ft) = 987.90 Backwater Low Beam (ft) = 987.90 0.34 1780 973.34 973.68 0.34 2680 975.36 975.76 0.40 4160 977.61 978.16 0.55 5380 978.86 979.64 0.78 6710 980.01 981.12 1.11 8588 984.02 984.86 0.84 10700 983.29 983.88 0.59 Overtopping Elev(ft) = 990.02 0 0vertopping Q (cfs) ≈ >10700 >10700	Se (CFS) Open Channel Existing 3-36' I-BM Spans Backwater Proposed 75'-45 PCB Spans Low Beam (ft) = 987.90 Low Beam (ft) = 987.90 Low Beam (ft) = 0.34 970.81 857 970.48 970.82 0.34 970.81 0.34 970.81 1780 973.34 973.68 0.34 973.56 0.40 975.53 2680 975.36 975.76 0.40 975.53 977.81 5380 978.86 979.64 0.78 979.15 6.710 980.01 981.12 1.11 980.52 8588 984.02 984.86 0.84 984.57 979.94 984.457 10700 983.29 983.88 0.59 984.457 91.070 Overtopping Elev (ft) = Overtopping Elev (ft) = 0vertopping Elev (ft) =	Se (CFS) Open Channel Existing 3-36' I-BM Spans Proposed 75'-45' Type III PCB Spans Low Beam (ft) 987.90 Low Beam (ft) 987.90 Low Beam (ft) 987.90 1730 973.34 970.82 0.34 970.81 1780 975.36 975.76 0.40 975.53 2680 975.36 975.76 0.40 975.53 4160 977.61 978.16 0.55 977.81 5380 978.86 979.64 0.78 979.15 6710 980.01 981.12 1.11 980.52 8588 984.02 984.86 0.84 984.45 Overtopping Elev (ft) = 990.02 Elev (ft) = 990.02 Overtopping C (cfs) ≈ >10700 0vertopping Q (cfs) ≈ >10700 0vertopping 2 >10700	