

Appendix A. Design rainfall temporal distributions for 24 hour rainfall events having average return intervals of 1 to 100 years by De Groot and Menoes (August 14, 2020)

Table A1. Comparison of the peak flows from the flood frequency analysis to the peak flows predicted using the NRCS Type 2, 24 hour rainfall temporal distributions and the Hydrosphere 24 hour rainfall temporal distributions for Coshocton Watershed 172.

Coshocton Watershed 172		Area		43.6 acres			
forested watershed		CN		72			
		Tc		29 minutes			
ARI years	24 hour rainfall inches	Peak flow from flood frequency analysis cfs	Peak flow using NRCS Type 2 cfs	Percent difference from flood frequency	Hydrosphere temporal pattern version number	Peak flow using Hydrosphere temporal pattern cfs	Percent difference from flood frequency
100	5.90	127	112	-12.3	0	117	-7.9
50	5.12	85	87	2.7	1	82	-2.7
25	4.43	56	66	18.6	2	56	0.9
10	3.62	31	43	38.7	3	33	4.8
5	3.08	20	30	50.3	4	20	-0.5
2	2.47	10	16	59.6	5	9	-9.1
1	2.06	6	8	37.7	6	4	-37.7

Table A2. Comparison of the peak flows from the flood frequency analysis to the peak flows predicted using the NRCS Type 2, 24 hour rainfall temporal distributions and the Hydrosphere 24 hour rainfall temporal distributions for Coshocton Watershed 177.

Coshocton Watershed 177		Area		75.6 acres			
primarily grassland and cultivated		CN		82			
		Tc		26 minutes			
ARI years	24 hour rainfall inches	Peak flow from flood frequency analysis cfs	Peak flow using NRCS Type 2 cfs	Percent difference from flood frequency	Hydrosphere temporal pattern version number	Peak flow using	
						Hydrosphere temporal pattern cfs	Percent difference from flood frequency
100	5.90	336	278	-17.3	0	294	-12.5
50	5.12	236	228	-3.3	1	217	-8.1
25	4.43	164	184	12.6	2	157	-4.2
10	3.62	99	135	35.7	3	101	2.1
5	3.08	66	102	54.3	4	67	1.5
2	2.47	37	68	84.5	5	39	4.6
1	2.06	26	47	81.6	6	22	-12.9

Table A3. Comparison of the peak flows from the flood frequency analysis to the peak flows predicted using the NRCS Type 2, 24 hour rainfall temporal distributions and the Hydrosphere 24 hour rainfall temporal distributions for Coshocton Watershed 196.

Coshocton Watershed 196		Area		303 acres			
		CN		84			
primarily agricultural with steep slopes		Tc		33 minutes			
ARI years	24 hour rainfall inches	Peak flow from flood frequency analysis cfs	Peak flow using NRCS Type 2 cfs	Percent difference from flood frequency	Hydrosphere temporal pattern version number	Peak flow using	
						Hydrosphere temporal pattern cfs	Percent difference from flood frequency
100	5.90	1061	1005	-5.3	0	1033	-2.6
50	5.12	782	831	6.2	1	775	-0.9
25	4.43	571	678	18.8	2	570	-0.1
10	3.62	368	502	36.4	3	377	2.5
5	3.08	257	387	50.7	4	257	-0.1
2	2.47	150	264	76.1	5	152	1.6
1	2.06	91	186	104.1	6	91	0.1

Table A4. Comparison of the peak flows from the flood frequency analysis to the peak flows predicted using the NRCS MSE 24 hour rainfall temporal distributions and the Hydrosphere 24 hour rainfall temporal distributions for Coshocton Watershed 172.

Coshocton Watershed 172		Area		43.6 acres					
forested watershed		CN		72					
		Tc		29 minutes					
ARI years	24 hour rainfall inches	Peak flow from flood frequency analysis cfs	NRCS MSE temporal pattern version number	Peak flow using NRCS MSE cfs	Percent difference from flood frequency	Hydrosphere temporal pattern version number	Peak flow using Hydrosphere temporal pattern cfs	Percent difference from flood frequency	
100	5.90	127	2	128	0.4	0	117	-7.9	
50	5.12	85	4	81	-4.5	1	82	-2.7	
25	4.43	56	5	53	-4.5	2	56	0.9	
10	3.62	31	6	31	0.3	3	33	4.8	
5	3.08	20	6	22	9.1	4	20	-0.5	
2	2.47	10	6	12	17.2	5	9	-9.1	
1	2.06	6	6	6	0.0	6	4	-37.7	

Table A5. Comparison of the peak flows from the flood frequency analysis to the peak flows predicted using the NRCS MSE 24 hour rainfall temporal distributions and the Hydrosphere 24 hour rainfall temporal distributions for Coshocton Watershed 177.

Coshocton Watershed 177		Area		75.6 acres					
		CN		82					
primarily grassland and cultivated		Tc		26 minutes					
ARI years	24 hour rainfall inches	Peak flow from flood frequency analysis cfs	NRCS MSE temporal pattern version number	Peak flow using NRCS MSE cfs	Percent difference from flood frequency	Hydrosphere temporal pattern version number	Peak flow using Hydrosphere temporal pattern		
							cfs	Percent difference from flood frequency	
100	5.90	336	2	315	-6.3	0	294	-12.5	
50	5.12	236	3	233	-1.1	1	217	-8.1	
25	4.43	164	4	169	3.2	2	157	-4.2	
10	3.62	99	6	95	-4.4	3	101	2.1	
5	3.08	66	6	72	8.9	4	67	1.5	
2	2.47	37	6	48	30.7	5	39	4.6	
1	2.06	26	6	33	29.3	6	22	-12.9	

Table A6. Comparison of the peak flows from the flood frequency analysis to the peak flows predicted using the NRCS MSE 24 hour rainfall temporal distributions and the Hydrosphere 24 hour rainfall temporal distributions for Coshocton Watershed 196.

Coshocton Watershed 196		Area		303 acres					
		CN		84					
		Tc		33 minutes					
primarily agricultural with steep slopes								Peak flow using	
		Peak flow from flood frequency analysis cfs		NRCS MSE temporal pattern version number		Peak flow using NRCS MSE cfs		Percent difference from flood frequency	
		24 hour rainfall inches				Hydrosphere temporal pattern version number		Hydrosphere temporal pattern cfs	
ARI years								Percent difference from flood frequency	
100	5.90	1061	3	1044	-1.6	0	1033	-2.6	
50	5.12	782	4	776	-0.7	1	775	-0.9	
25	4.43	571	5	551	-3.5	2	570	-0.1	
10	3.62	368	6	366	-0.4	3	377	2.5	
5	3.08	257	6	284	10.3	4	257	-0.1	
2	2.47	150	6	194	29.4	5	152	1.6	
1	2.06	91	6	137	50.4	6	91	0.1	