

Appendix 3-D

Flood Hydrograph Development

Revised September 2026

If you require assistance accessing this information or require it in an alternative format, contact the Michigan Department of Transportation's (MDOT) Americans with disabilities Act (ADA) coordinator at Michigan.gov/MDOT-ADA.

Table 3-D-1. Rainfall Distribution by County (Watkins et al., 2026)

County	Rainfall	County	Rainfall	County	Rainfall
Alcona	MSE3	Gratiot	MSE4	Monroe	MSE3
Alger	MSE3	Hillsdale	MSE3	Montcalm	MSE3
Allegan	MSE3	Houghton	MSE4	Montmorency	MSE4
Alpena	MSE3	Huron	MSE3	Muskegon	MSE4
Antrim	MSE3	Ingham	MSE3	Newaygo	MSE4
Arenac	MSE3	Ionia	MSE3	Oakland	MSE3
Baraga	MSE4	Iosco	MSE3	Oceana	MSE4
Barry	MSE3	Iron	MSE4	Ogemaw	MSE3
Bay	MSE3	Isabella	MSE3	Ontonagon	MSE4
Benzie	MSE3	Jackson	MSE3	Osceola	MSE3
Berrien	MSE3	Kalamazoo	MSE3	Oscoda	MSE3
Branch	MSE3	Kalkaska	MSE3	Otsego	MSE3
Calhoun	MSE3	Kent	MSE4	Ottawa	MSE4
Cass	MSE3	Keweenaw	MSE4	Presque Isle	MSE4
Charlevoix	MSE3	Lake	MSE3	Roscommon	MSE3
Cheboygan	MSE4	Lapeer	MSE3	Saginaw	MSE3
Chippewa	MSE3	Leelanau	MSE3	Sanilac	MSE3
Clare	MSE3	Lenawee	MSE3	Schoolcraft	MSE3
Clinton	MSE3	Livingston	MSE3	Shiawassee	MSE3
Crawford	MSE3	Luce	MSE3	St. Clair	MSE3
Delta	MSE3	Mackinac	MSE3	St. Joseph	MSE3
Dickinson	MSE4	Macomb	MSE3	Tuscola	MSE3
Eaton	MSE3	Manistee	MSE3	Van Buren	MSE3
Emmet	MSE3	Marquette	MSE4	Washtenaw	MSE3
Genesee	MSE3	Mason	MSE4	Wayne	MSE3
Gladwin	MSE3	Mecosta	MSE3	Wexford	MSE3
Gogebic	MSE4	Menominee	MSE4		
Grand Traverse	MSE3	Midland	MSE3		
		Missaukee	MSE3		

Table 3-D-2. Unit Hydrograph PRF 300 – Lower Peninsula and Eastern Upper Peninsula, WinTR-55 Input

0	0.2943	0.6201	0.8458	0.9656
1	0.9736	0.9085	0.8217	0.7257
0.629	0.5369	0.4527	0.3776	0.3122
0.2561	0.2087	0.1691	0.1363	0.1093
0.0873	0.0695	0.0551	0.0436	0.0343
0.027	0.0212	0.0166	0.0129	0.0101
0.0078	0.0061	0.0047	0.0037	0.0028
0.0022	0.0017	0.0013	0.001	0.0008
0.0006	0.0005	0.0003	0.0003	0.0002
0.0002	0.0001	0.0001	0.0001	0.0001
0				

Table 3-D-3. Dimensionless Unit Hydrograph PRF 300 – Lower Peninsula and Eastern Upper Peninsula

Time (non-dim)	Flow (non-dim)
0.0	0.0000
0.2	0.2943
0.4	0.6201
0.6	0.8458
0.8	0.9656
1.0	1.0000
1.2	0.9736
1.4	0.9085
1.6	0.8217
1.8	0.7257
2.0	0.6290
2.2	0.5369
2.4	0.4527
2.6	0.3776
2.8	0.3122
3.0	0.2561
3.2	0.2087
3.4	0.1691
3.6	0.1363
3.8	0.1093
4.0	0.0873
4.2	0.0695
4.4	0.0551
4.6	0.0436
4.8	0.0343
5.0	0.0270

Time (non-dim)	Flow (non-dim)
5.2	0.0212
5.4	0.0166
5.6	0.0129
5.8	0.0101
6.0	0.0078
6.2	0.0061
6.4	0.0047
6.6	0.0037
6.8	0.0028
7.0	0.0022
7.2	0.0017
7.4	0.0013
7.6	0.0010
7.8	0.0008
8.0	0.0006
8.2	0.0005
8.4	0.0003
8.6	0.0003
8.8	0.0002
9.0	0.0002
9.2	0.0001
9.4	0.0001
9.6	0.0001
9.8	0.0001
10.0	0.0000

Figure 3-D-1. Dimensionless Unit Hydrograph PRF 300 – Lower Peninsula and Eastern Upper Peninsula

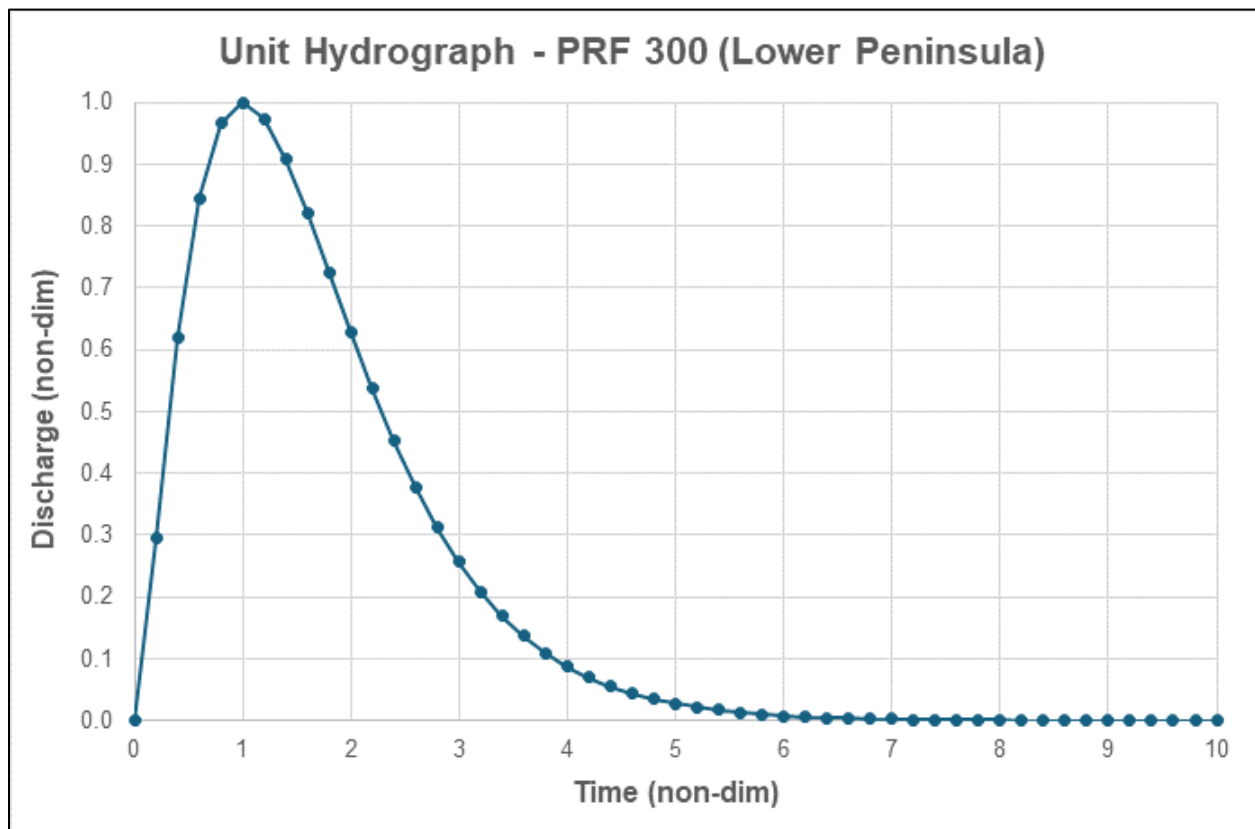


Table 3-D-4. Unit Hydrograph PRF 350 - Western Upper Peninsula, WinTR-55 Input

0	0.197	0.53	0.8006	0.9546
1	0.9561	0.8803	0.7703	0.6532
0.5402	0.4378	0.349	0.2743	0.2131
0.1638	0.1248	0.0944	0.0708	0.0529
0.0392	0.0289	0.0213	0.0156	0.0114
0.0082	0.006	0.0043	0.0031	0.0022
0.0016	0.0011	0.0008	0.0006	0.0004
0.0003	0.0002	0.0001	0.0001	0.0001
0.0001	0			

Table 3-D-5. Dimensionless Unit Hydrograph PRF 350 - Western Upper Peninsula

Time (non-dim)	Flow (non-dim)
0.0	0.0000
0.2	0.1970
0.4	0.5300
0.6	0.8006
0.8	0.9546
1.0	1.0000
1.2	0.9561
1.4	0.8803
1.6	0.7703
1.8	0.6532
2.0	0.5402
2.2	0.4378
2.4	0.3490
2.6	0.2743
2.8	0.2131
3.0	0.1638
3.2	0.1248
3.4	0.0944
3.6	0.0708
3.8	0.0529
4.0	0.0392
4.2	0.0289

Time (non-dim)	Flow (non-dim)
4.4	0.0213
4.6	0.0156
4.8	0.0114
5.0	0.0082
5.2	0.0060
5.4	0.0043
5.6	0.0031
5.8	0.0022
6.0	0.0016
6.2	0.0011
6.4	0.0008
6.6	0.0006
6.8	0.0004
7.0	0.0003
7.2	0.0002
7.4	0.0001
7.6	0.0001
7.8	0.0001
8.0	0.0001
8.2	0.0000

Figure 3-D-2. Dimensionless Unit Hydrograph PRF 350 - Western Upper Peninsula