DETENTION BASIN STAGE-STORAGE TABLE BUILDER

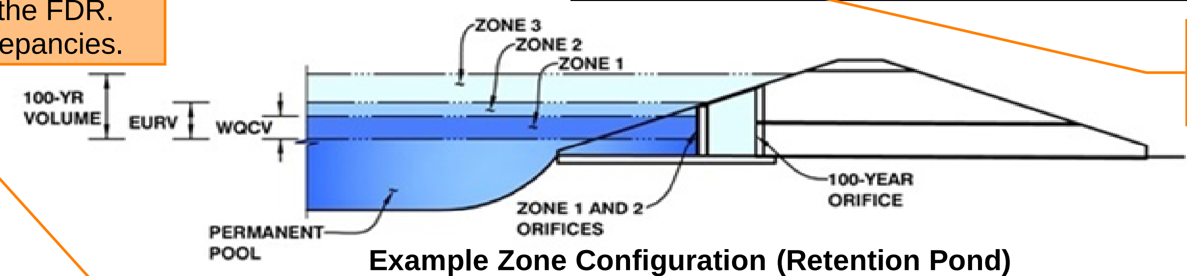
MHFD-Detention, Version 4.06 (July 2022)

Inputs do not match those shown on the MHFD-Detention calcs shown on pdf pg 48 of the FDR. Revise to remove discrepancies.

Project: **Villas at Aspen Trails**

Basin ID: **Pond-1**

Labeled as "South Pond" in MHFD-Detention spreadsheet calcs. Revise to remove discrepancies.



Example Zone Configuration (Retention Pond)

Watershed Information

Selected BMP Type =	**EDB**	
Watershed Area =	4.32	acres
Watershed Length =	582	ft
Watershed Length to Centroid =	250	ft
Watershed Slope =	0.006	ft/ft
Watershed Imperviousness =	60.00%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	100.0%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent
Target WQCV Drain Time =	40.0	hours
Location for 1-hr Rainfall Depths =	Castle Pines - City Office	

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

			Optional User Overrides	
Water Quality Capture Volume (WQCV) =	0.085	acre-feet		acre-feet
Excess Urban Runoff Volume (EURV) =	0.281	acre-feet		acre-feet
2-yr Runoff Volume (P1 = 0.84 in.) =	0.161	acre-feet		inches
5-yr Runoff Volume (P1 = 1.12 in.) =	0.228	acre-feet		inches
10-yr Runoff Volume (P1 = 1.36 in.) =	0.302	acre-feet		inches
25-yr Runoff Volume (P1 = 1.72 in.) =	0.440	acre-feet		inches
50-yr Runoff Volume (P1 = 2.01 in.) =	0.542	acre-feet		inches
100-yr Runoff Volume (P1 = 2.31 in.) =	0.662	acre-feet		inches
500-yr Runoff Volume (P1 = 3.07 in.) =	0.937	acre-feet		inches
Approximate 2-yr Detention Volume =	0.153	acre-feet		
Approximate 5-yr Detention Volume =	0.218	acre-feet		
Approximate 10-yr Detention Volume =	0.292	acre-feet		
Approximate 25-yr Detention Volume =	0.350	acre-feet		
Approximate 50-yr Detention Volume =	0.379	acre-feet		
Approximate 100-yr Detention Volume =	0.424	acre-feet		

Define Zones and Basin Geometry

Select Zone 1 Storage Volume (Required) =		acre-feet
Select Zone 2 Storage Volume (Optional) =		acre-feet
Select Zone 3 Storage Volume (Optional) =		acre-feet
Total Detention Basin Volume =		acre-feet
Initial Surcharge Volume (ISV) =	user	ft^3
Initial Surcharge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{total}) =	user	ft
Depth of Trickle Channel (H_{TC}) =	user	ft
Slope of Trickle Channel (S_{TC}) =	user	ft/ft
Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	
Initial Surcharge Area (A_{ISV}) =	user	ft^2
Surcharge Volume Length (L_{ISV}) =	user	ft
Surcharge Volume Width (W_{ISV}) =	user	ft
Depth of Basin Floor (H_{FLOOR}) =	user	ft
Length of Basin Floor (L_{FLOOR}) =	user	ft
Width of Basin Floor (W_{FLOOR}) =	user	ft
Area of Basin Floor (A_{FLOOR}) =	user	ft^2
Volume of Basin Floor (V_{FLOOR}) =	user	ft^3
Depth of Main Basin (H_{MAIN}) =	user	ft
Length of Main Basin (L_{MAIN}) =	user	ft
Width of Main Basin (W_{MAIN}) =	user	ft
Area of Main Basin (A_{MAIN}) =	user	ft^2
Volume of Main Basin (V_{MAIN}) =	user	ft^3
Calculated Total Basin Volume (V_{total}) =	**user**	acre-feet

Also, the actual SDI form can be downloaded here:

https://maperture.digitaldataservices.com/gvh/?viewer=cswdif

Depth Increment = 0.10 ft

Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft^2)	Optional Override Area (ft^2)	Area (acre)	Volume (ft^3)	Volume (ac-ft)
Top of Micropool	--	0.00	--	--	--	4,190	0.096		
	--	0.10	--	--	--	4,300	0.099	424	0.010
	--	0.20	--	--	--	4,411	0.101	860	0.020
	--	0.30	--	--	--	4,523	0.104	1,307	0.030
	--	0.40	--	--	--	4,635	0.106	1,765	0.041
	--	0.50	--	--	--	4,749	0.109	2,234	0.051
	--	0.60	--	--	--	4,864	0.112	2,714	0.062
	--	0.70	--	--	--	4,980	0.114	3,207	0.074
	--	0.80	--	--	--	5,097	0.117	3,711	0.085
	--	0.90	--	--	--	5,215	0.120	4,226	0.097
	--	1.00	--	--	--	5,337	0.123	4,754	0.109
	--	1.10	--	--	--	5,457	0.125	5,294	0.122
	--	1.20	--	--	--	5,578	0.128	5,845	0.134
	--	1.30	--	--	--	5,700	0.131	6,409	0.147
	--	1.40	--	--	--	5,823	0.134	6,986	0.160
	--	1.50	--	--	--	5,947	0.137	7,574	0.174
	--	1.60	--	--	--	6,073	0.139	8,175	0.188
	--	1.70	--	--	--	6,199	0.142	8,789	0.202
	--	1.80	--	--	--	6,326	0.145	9,415	0.216
	--	1.90	--	--	--	6,454	0.148	10,054	0.231
	--	2.00	--	--	--	6,585	0.151	10,706	0.246
	--	2.10	--	--	--	6,715	0.154	11,371	0.261
	--	2.20	--	--	--	6,846	0.157	12,049	0.277
	--	2.30	--	--	--	6,978	0.160	12,740	0.292
	--	2.40	--	--	--	7,111	0.163	13,444	0.309
	--	2.50	--	--	--	7,245	0.166	14,162	0.325
	--	2.60	--	--	--	7,380	0.169	14,893	0.342
	--	2.70	--	--	--	7,517	0.173	15,638	0.359
	--	2.80	--	--	--	7,654	0.176	16,397	0.376
	--	2.90	--	--	--	7,792	0.179	17,169	0.394
	--	3.00	--	--	--	7,931	0.182	17,955	0.412
	--	3.10	--	--	--	8,072	0.185	18,755	0.431
	--	3.20	--	--	--	8,213	0.189	19,570	0.449
	--	3.30	--	--	--	8,355	0.192	20,398	0.468
	--	3.40	--	--	--	8,498	0.195	21,241	0.488
	--	3.50	--	--	--	8,643	0.198	22,098	0.507
	--	3.60	--	--	--	8,808	0.202	22,970	0.527
	--	3.70	--	--	--	9,010	0.207	23,861	0.548
	--	3.80	--	--	--	9,248	0.212	24,774	0.569
	--	3.90	--	--	--	9,522	0.219	25,713	0.590
	--	4.00	--	--	--	9,935	0.228	26,686	0.613
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