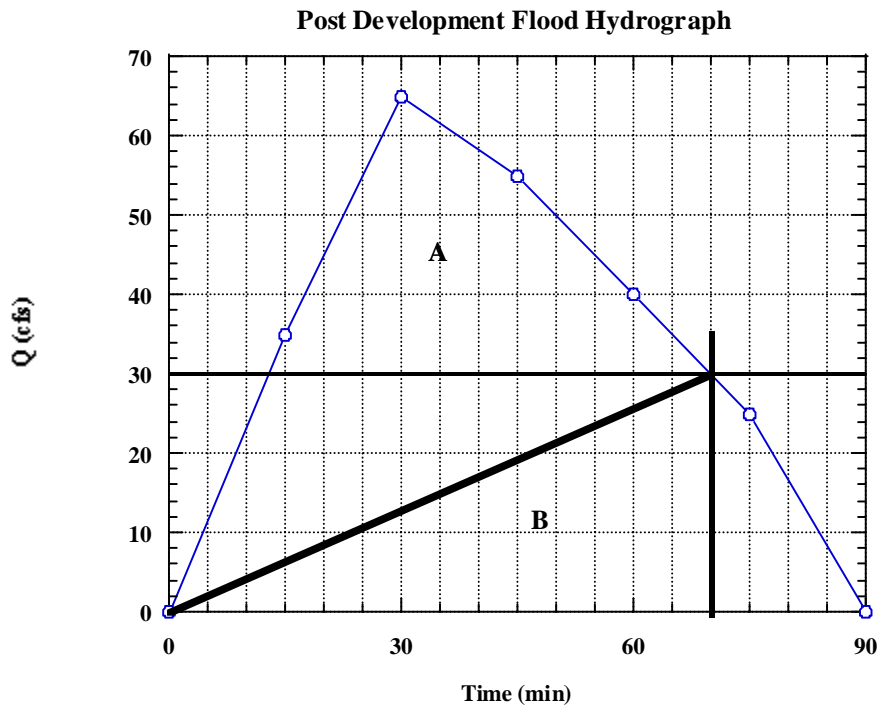


Stormwater Detention Pond Sizing

Given: 10-year return period post-development flood hydrograph:



The pre-development peak discharge is 30 cfs. Determine the approximate detention pond storage (in ac-ft) required to reduce the post-development peak discharge to pre-development levels.

Volume -A-					Volume -B-				
Time (min)	Q (cfs)	Q-avg (cfs)	Δt (min)	$Q\Delta t$ (cfs-min)	Time (min)	Q (cfs)	Q-avg (cfs)	Δt (min)	$Q\Delta t$ (cfs-min)
0	0				0	0			
		17.5	15	262.5			15	70	1050
15	35				70	30			
		50	15	750					
30	65								1050
		60	15	900					
45	55								
		47.5	15	712.5					
60	40								
		35	10	350					
70	30								
				2975					
					Vol A		2975 cfs-min		
					Vol B		1050 cfs-min		
					Pond		1925 cfs-min		
					Volume		2.65 ac-ft		