100-year Storm – Typically this is considered the maximum storm which stormwater facilities are designed to handle. A common misconception is that this storm will occur only once every 100-years. In reality, a 100-year storm event can occur more often than this. The 100-year storm is simply based on statistical probability.

Acre-Feet – The unit with which the volume of storm runoff is typically measured. One acre-foot of water can be visualized as 12-inches of water placed over a surface area of one acre. An acre is equal to 43560 square feet. An acre foot of water is equal to about 325850 gallons.

CFS - Cubic Feet Per Second. The unit with which the flow rate of storm runoff is typically measured. One cubic foot of water is equivalent to about 7.5 gallons. A flow rate of 1 cfs is equal to about 450 gallons per minute. Compared to the average garden hose flow rate of 10 gallons per minute, 1 cfs is a considerable amount of flow.

C-Value – This term is associated with the Rational Method, which is a common method of calculating storm runoff. This numeric value (which ranges from 0.05 to 1.00) is a mathematic representation of the ground cover or land use of a drainage basin/watershed. The higher the C-Value, the more runoff is expected to be generated by a watershed.

Detention Pond – A Detention pond acts, in essence, as a storage pond which decreases the impact of stormwater runoff in downstream drainage channels, pipes, etc. Similar to how beaver dams act in nature, they serve to soften the impact of surges in storm runoff by holding a certain volume of storm runoff. Depending on the municipality, detention ponds are required to hold different volumes of storm runoff. Often, detention ponds are required to hold up to a 100-year storm volume, and release at a 2-year or 10-year historic rate of flow.

Rational Method - A common method to calculate peak storm runoff rate. It is important to note that this method calculates a peak flow rate and not a storm volume. Most municipalities set basin size limits for this method ranging from 80 to 160 acres.

SWMM - Storm Water Management Model. A computer based storm runoff model. For the stormwater engineer, this is a typically used for calculating runoff rates for the sizing of pipes and swales. Also, SWMM is typically utilized for the sizing of detention ponds. SWMM calculates a storm hydrograph. As discussed above, the storm hydrograph represent the total storm, not just a peak flow rate.

Storm Hydrograph - A storm hydrograph is a graph that represents the amount of flow (typically in CFS) as it changes over time. As you would expect, the flow rate at any one point of observation during a storm event will change throughout the duration of the storm. An observer at a point in along a creek would see the water in the creek rise and fall over time during a storm event. The hydrograph is a way of charting this rise and fall of the flow at a set point in a watershed.

Methods for calculating peak runoff, such as the Rational Method, do not determine a true storm hydrograph. Peak runoff methods determine, as the name implies, a peak runoff rate. The peak runoff rate is simply the highest point on the storm hydrograph.

Water Quality Pond - The most common type of water quality pond is the Extended Detention Water quality Pond. This type of pond serves to enhance the quality of storm runoff by holding a certain volume water for an extended period. Often, this is close to a 1- to 2-year storm volume with a 40-hour holding time. Water quality ponds work on a very simple principle: hold turbid water long enough and suspended particulates will fall out.

Water quality ponds do not "filter" chemicals or other dissolved pollutants. However, there are many chemical pollutants that bind to suspended particles. Thus, by encouraging suspended particles to fall out, the pollutants attached to these particles are also taken care of, so long as adequate dredging and maintenance of the pond occurs.