NOTE: Storm water may contain high levels of chloride, salinity, hydrocarbons, significant quantities of sand and plastic or rags accumulated over time. Pumps with high solid passing capacity, wear and corrosion resistance and lower speed drives shall be considered.

6.3.4. Design Capacity and Available Storage

The required design capacity (both initial and ultimate flows), including the maximum, normal, and minimum flows to be pumped, shall be established during pumping equipment selection.

For the pumping stations designed without special storage requirement (active volume only) the Consultant shall assume the following:

- The peak demand should be covered with two or three duty pumps.
- Normal demand should be covered with one duty pump.
- The expected sustained minimum flow is important as it may dictate installation of the low flow pumps to ensure energy saving and wear and tear reduction of the main pumps.

The Consultant shall calculate total storage capacity to be provided using inflow hydrograph and pump-system curves. An estimate of storage volume can be made by comparing the inflow hydrograph to the controlling pump discharge rate as illustrated in Figure 6-2.

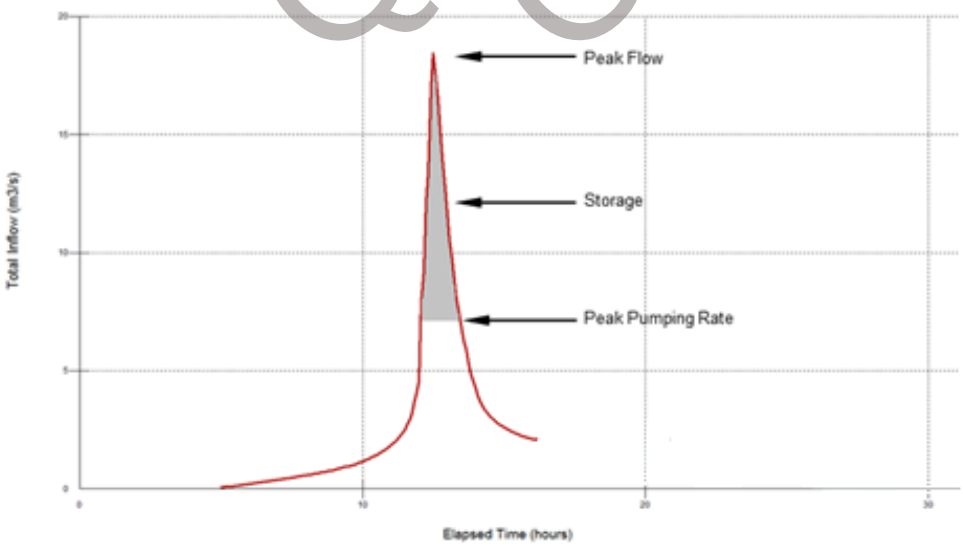

Figure 6-2 - Estimated required storage from inflow hydrograph

The shaded area represents the estimated volume required above the last pump turn-on point – this assumes that this volume of water is beyond the capacity of the pumps and must be stored.

The capacity of the outfall pumping stations working in parallel with gravity lines shall be 20% of estimated peak flow.

6.3.5. Operating Conditions

Analysis of the pump operation shall be based on the following:

- The most frequent operating requirement