Appendix 9.3

Excess Flow Hold Basin Sizing Methodology

A triangular-shaped hydrograph was used to evaluate and size future excess flow holding basins. The volume of flow entering the sanitary sewer system was estimated to be 1.5% of the total rain fall produced during a 50-year storm event for a given area. The 1.5% was derived from previous flow metering studies. Since the volume of flow is equal to the area under the assumed triangular hydrograph a total duration was calculated based upon:

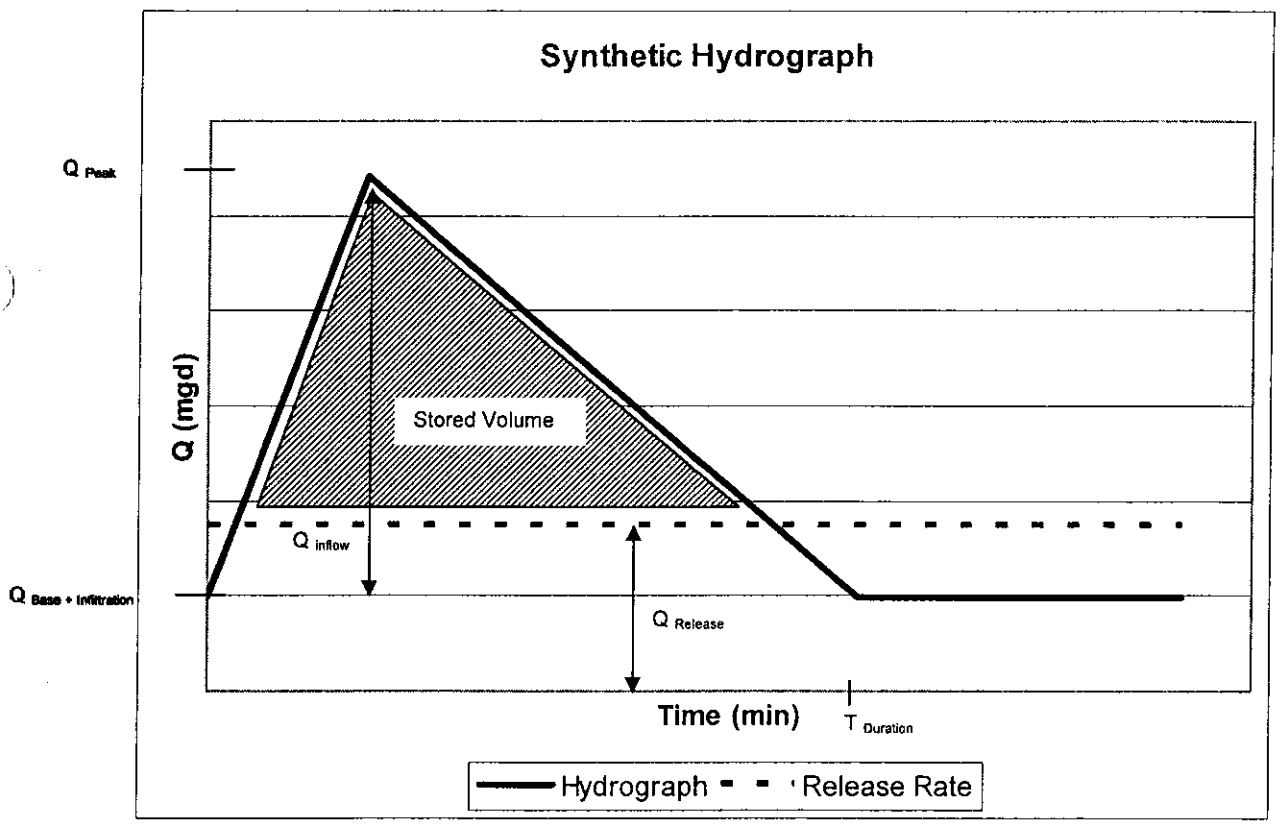
$$V_{total} = \frac{1}{2} \times Q_{peak} \times T_{duration}$$

Where:

V_{total} = Volume of flow entering the system

Q_{peak} = Peak wastewater flows consist of three components: Peak Base Flow, Peak Infiltration, Peak inflow.

$T_{duration}$ = Total Duration



The stored volume was then calculated based upon volume above the basin release rate and below the triangular hydrograph.