Design Storm Flow Rate Calculation

Hydrologic calculations for design of flow-based stormwater quality BMPs in Ventura County shall be in accordance with latest edition of the *Hydrology Manual* produced by Ventura County Public Works Agency, Flood Control and Water Resources Department, together with the procedure set forth herein. Where jurisdictions within Ventura County have approved alternative hydrologic calculation methods, the alternative methods may be utilized if they have been approved by the jurisdiction for use in design of flow-based stormwater quality BMPs. This procedure complies with Regional Board Order No. 00-108, NPDES Permit No. CAS004002, Attachment A – Ventura Countywide Stormwater Quality Urban Impact Mitigation Plan, issued July 27, 2000.

Calculation Procedure

1. The Stormwater Quality Design Flow (SQDF) in Ventura County is defined as $Q_{P, SQDF}$.

2. Calculate the peak rate of flow from the 50-year storm ($Q_{P, 50 yr.}$) using the procedures set forth in the *Hydrology Manual*.

3. Convert $Q_{P, 50yr}$ (Step 2) to $Q_{P, SQDF}$ (Step 1).

    $Q_{P, SQDF} = 0.1 \times Q_{P, 50yr}$

Example Design Storm Flow Calculation

The steps below show an example calculation for a swale (BMP IN).

Step 1: Design Flow $= Q_{P, SQDF}$

Step 2: Calculate the peak rate of flow from a 50-year storm.

    $Q_{p, 50 yr.} = 10$ cfs from the *Hydrology Manual*

Step 3: Convert $Q_{p,50 yr}$ (Step 2) to $Q_{p, WQDF}$ (Step 1)

    $Q_{P, SQDF} = 0.1 \times 10$ cfs
        $= 1.0$ cfs $=$ Stormwater Quality Design Flow for the BMP.