San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue
11th Floor
San Francisco, CA 94102

SFPUC Stormwater Management Requirements and Design Guidelines Supplement: Accepted Hydrologic Calculation Methods

Combined Sewer Areas (CSS Areas):

Calculations shall demonstrate how the system is sized to meet peak discharge rate and volume[1] reduction requirements for the 2-year, 24-hour design storm[2].

1. **Preferred:**
   - SFPUC CSS BMP Sizing Calculator (sfwater.org/sdg). Allowed for:
     - *Project sites < 2 acres* (one drainage area discharge); or
     - *Project sites < 5 acres* (w/ multiple drainage area discharges < 2 acres).
   - Single-event hydrologic modeling software[3] or continuous simulation modeling software (e.g. EPA SWMM, or equal). *Allowed for all project sites.*

2. **Acceptable (for drainage areas with simple BMP systems):**
   - The Rational Method to predict the peak flow rate, and the Simple Method to estimate volume. *Allowed for project sites < 1/4 acre.*
   - An industry-standard engineering method for generating runoff hydrographs (e.g., the SCS Unit Hydrograph Procedure or the Santa Barbara Urban Hydrograph Method). *Allowed for project sites < 2 acres.*

Separate Sewer Areas (MS4 Areas):

- For project in **Port of San Francisco's jurisdiction**, calculations shall demonstrate that the system is sized to capture and treat all runoff from the 85th percentile, 24-hour design storm (0.63-inch total depth, constant intensity of 0.2 in/hr).
- For projects in **SFPUC jurisdiction**, calculations shall demonstrate how the system is sized to capture and treat all runoff from the 90th percentile, 24-hr storm (0.75-inch total depth, constant intensity of 0.24 in/hr).[4]

1. **Preferred:**
   - SFPUC MS4 BMP Sizing Calculator (sfwater.org/sdg). Allowed for:
     - *Project sites < 2 acres* (one drainage area discharge); or
     - *Project sites < 5 acres* (w/ multiple drainage area discharges < 2 acres).
   - Single-event hydrologic modeling software[3] or continuous simulation modeling software (e.g. EPA SWMM, or equal). *Allowed for all project sites.*

2. **Acceptable (for drainage areas with simple BMP systems):**
   - The Rational Method may be used for flow-based sizing, and the Simple Method may be used to estimate treatment volumes. *Allowed for project sites < 1/4 acre.*

[1] Requires permanent stormwater volume reduction, NOT temporary stormwater volume reduction, i.e. detention. For more information, call UWMP staff.
[2] San Francisco 1-yr and 2-yr 24-hr design storm data is available online (www.sfwater.org/smr).
[3] The SFPUC does not endorse any particular proprietary software. Acceptable software includes, but is not limited to: Pondpack, HydroCAD, Civil 3D, or equivalent.
[4] For long-term continuous simulation modeling, greater than 80% runoff capture is assumed to be equivalent to capture of the 85th percentile storm. Greater than 85% runoff capture is assumed to be equivalent to capture of the 90th percentile storm.