

Hydrology Standards  
VOLUME 2 of the Sacramento City/County Drainage Manual

PART 2:

# The Sacramento Method

# Chapter 3

## Introduction to the Sacramento Method

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### Introduction

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#### *Overview*

The Sacramento method is a runoff hydrograph method that converts precipitation excess to basin runoff as follows:

1. Determine precipitation using a design storm, a historical storm or continuous simulation.
2. Deduct losses from the precipitation to determine effective precipitation.
3. Transform effective precipitation into basin runoff using the Bureau of Reclamation urban unit graph and an estimate of the basin lag time.

This PART (Chapters 3-10) provides background and recommendations for the above steps.

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## Use of the Sacramento Method

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### *Applications*

The Sacramento method can be used for all hydrologic calculations in the City and County of Sacramento. The method is required for the following hydrologic calculations:

- drainage master plans
  - storm drain and street drainage design in the City (except in infill areas where unit flow rates may be allowed)
  - special case design of storm and street drainage which may include:
    - ▶ streets designated for emergency evacuation
    - ▶ areas with potential loss of life
    - ▶ areas with high potential of property damage
    - ▶ high use public areas
    - ▶ areas with no overland release
    - ▶ areas lower than surrounding elevations (sumps)
  - design of:
    - ▶ open channels
    - ▶ bridges
    - ▶ culverts associated with open channels
    - ▶ flood control detention basins
    - ▶ drainage facilities serving areas greater than 640 acres (260 hectares).
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### *Hydrologic Calculations*

The Sacramento method was developed to use the Corp of Engineers, Flood Hydrograph Program, HEC-1, to perform the hydrologic calculations. The City and County have also developed a HEC-1 preprocessor, SACPRE, to aid the designer in creating input for the HEC-1 model in accordance with the Sacramento method.

Storm drain and street drainage design is frequently based on a design flow. To simplify the calculation of design flows using the Sacramento method, peak flow charts were developed for drainage design for areas less than 640 acres (260 hectares). These charts are presented and described more thoroughly in Chapter 2.

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