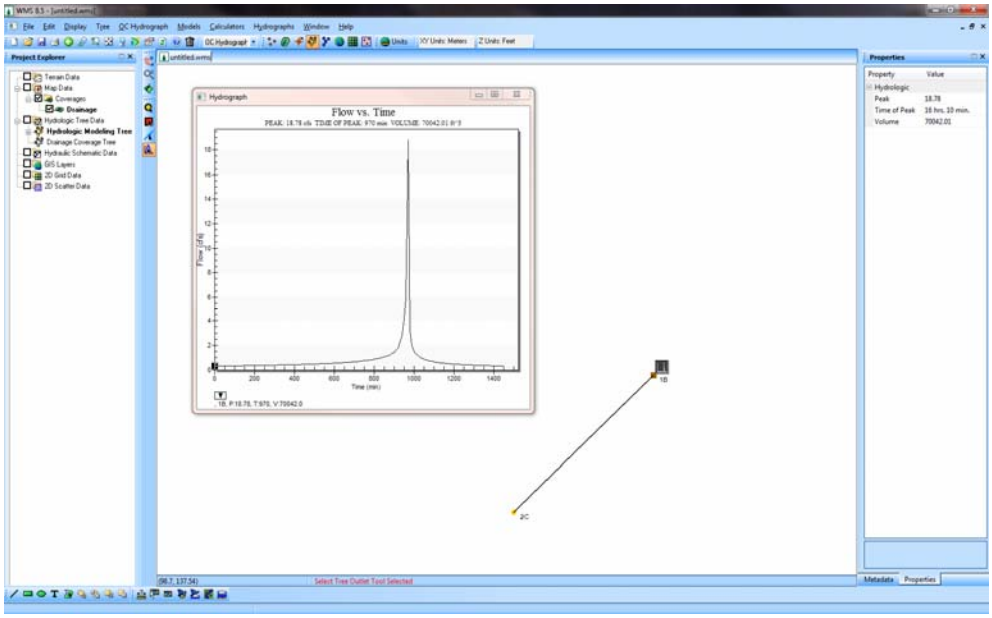
WMS

v. 8.4

WMS 8.4 Tutorial

Watershed Modeling – Orange County Small Area Hydrograph

Compute a small area hydrograph based on methods in the Orange County (California) hydrology manual



Objectives

This tutorial demonstrates the necessary steps to compute a small area hydrograph using the example problem on page J-3 of the Orange County Hydrology Manual.

Prerequisite Tutorials

- None

Required Components

- Hydrologic Models

Time

- 5-10 minutes

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1 Contents

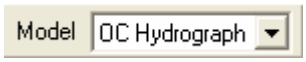
2 Introduction

This exercise will cover the steps necessary to compute a small area hydrograph using the example problem on page J-3 of the Orange County Hydrology Manual.

3 Creating Hydrologic Tree (Schematic) Model

1. Close all instances of WMS
2. Open WMS
3. Switch to the *Hydrologic Modeling* module 
4. Select ***Tree*** **|** ***Add*** **|** ***Outlet*** (or press the O key on the keyboard)
5. Select ***Tree*** **|** ***Add*** **|** ***Basin*** (or press the B key on the keyboard)

This generates a basic schematic model representing a concentration point with one sub-area.



6. Make sure that the Model combo box is set to OC Hydrograph

4 Small Area Hydrograph Input Parameters

1. Use the *Select Basin* tool  to select the sub-area labeled 1B
2. Select ***OC Hydrograph*** **|** ***Edit Parameters…***
3. In the Small Area Hydrograph section of the dialog click on the Define… button
4. Enter a Basin Area of 8.0 acres
5. Click on the Update Frequency button
6. Change the Frequency to 10 year
7. Select OK
8. Set the Time of concentration to 10.0 min
9. Enter a Fm value of 0.12
10. Enter a Ybar value of 0.35

11. Click on the Next > button to view the computations in a tabular format
12. Select Done
13. Select Done in the Edit Orange County Unit Hydrograph Parameters dialog
14. Double-click on the hydrograph icon

You can view a plot of the small area runoff hydrograph including the peak flow, time to peak, and volume of runoff as show in Figure 4-1.

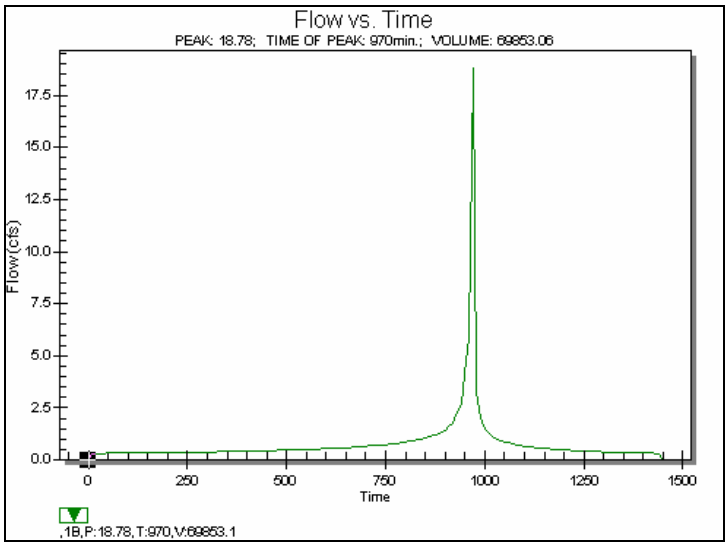


Figure 4-1: Small area runoff hydrograph

