Floodwater Storage Design Information Sheet

Use this form to calculate the quantity of water exiting from a pond. It will indicate the effectiveness of a particular size of pond in reducing the peak flow associated with an upstream watershed. Follow all of the instructions on this form and on all of the associated figures.

1. Watershed area _____ha _____ac

2. Average grade of watershed _____ %

3. Runoff curve number from Tables 2.2 – 2.4

4. Peak flow from watershed for a 25-year storm from Table 2.5-M to 2.11-M (2.5-I to 2.11-I) _____m^3/s _____ft^3/s

5. Obtain one-day rainfall for the watershed location from Table G. _____mm _____in.

6. Obtain the depth of runoff (Vr) from Table G.2-M (G.2-I) _____mm _____in.
7. Calculate the ponding volume available _____m^3 _____ft^3

8. Calculate the equivalent depth of storage over the entire watershed

Vs = pond volume_____ x 1,000 ÷ hectares_____ x 10,000 = _____mm

Vs = pond volume_____ x 12 ÷ acres_____ x 43,560 = _____in

_____mm _____in.

9. Refer to Figure G.3 to decide which chart to use Table G.3 or Table G.4-M (G.4-I) **Choose One**

A. Table G.3

If Table G.3 is used, divide Vs by Vr (i.e. divide answer in Step 8 above by the answer in Step 6

Vs ÷ Vr = _____ = _____

Using Table G.3, read the first decimal place of Vs/Vr on the left side and the second decimal place across the top. Obtain the answer where the two lines intersect:

Answer: _____

Multiply this answer by the peak flow in step 4 (above) to obtain the peak pond outflow.

_____ x _____= _____m^3/s (ft^3/s)

B. Table G.4-M (G.4-I) If Table G.4-M (G.4-I) is used, read Vs along the top of the chart and Vr along the left side to obtain discharge:

Answer:_____$m^3/s/ha$ ($ft^3/s/ac$)

Multiply the answer (above) by the number of hectares (acres) in the watershed to obtain the peak pond outflow.

_____ x _____=_____m^3/s (ft^3/s)