Appendix B

TR-55 Worksheets

2, 3 & 4

Worksheet 2: Runoff curve number and runoff

Project _____ By _____ Date _____

Location _____ Checked _____ Date _____

Circle one: Present Developed _____

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/			Area ☐ acres ☐ mi^2 ☐ %	Product of CN x area
		Table 2-2	Fig. 2-3	Fig. 2-4		
				Totals =		

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}}$ = _____ = _____; Use CN = ☐

2. Runoff

	Storm #1	Storm #2	Storm #3
Frequency ..... yr			
Rainfall, P (24-hour) ..... in			
Runoff, Q ..... in (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)			

Worksheet 3: Time of concentration (T_c) or travel time (T_t)

Project _____ By _____ Date _____

Location _____ Checked _____ Date _____

Circle one: Present Developed _____

Circle one: T_c T_t through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.

Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to T_c only) Segment ID

1. Surface description (table 3-1) .....
2. Manning's roughness coeff., n (table 3-1) ..
3. Flow length, L (total L $\leq$ 300 ft) ..... ft
4. Two-yr 24-hr rainfall, P_2 ..... in
5. Land slope, s ..... ft/ft
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$ Compute T_t ..... hr

Shallow concentrated flow Segment ID

7. Surface description (paved or unpaved) .....
8. Flow length, L ..... ft
9. Watercourse slope, s ..... ft/ft
10. Average velocity, V (figure 3-1) ..... ft/s
11. $T_t = \frac{L}{3600\ V}$ Compute T_t ..... hr

Channel flow Segment ID

12. Cross sectional flow area, a ..... ft^2
13. Wetted perimeter, p_w ..... ft
14. Hydraulic radius, $r = \frac{a}{p_w}$ Compute r ..... ft
15. Channel slope, s ..... ft/ft
16. Manning's roughness coeff., n .....
17. $V = \frac{1.49\ r^{2/3}\ s^{1/2}}{n}$ Compute V ..... ft/s
18. Flow length, L ..... ft
19. $T_t = \frac{L}{3600\ V}$ Compute T_t ..... hr
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) ..... hr

Worksheet 4: Graphical Peak Discharge method

Project _____ By _____ Date _____

Location _____ Checked _____ Date _____

Circle one: Present Developed _____

1. Data:

Drainage area ..... A_m = _____ mi^2 (acres/640)

Runoff curve number .... CN = _____ (From worksheet 2)

Time of concentration .. T_c = _____ hr (From worksheet 3)

Rainfall distribution type = _____ (I, IA, II, III)

Pond and swamp areas spread throughout watershed ..... = _____ percent of A_m (____ acres or mi^2 covered)

		Storm #1	Storm #2	Storm #3
2. Frequency	yr			
3. Rainfall, P (24-hour)	in			
4. Initial abstraction, I_a ..... (Use CN with table 4-1.)	in			
5. Compute I_a/P				
6. Unit peak discharge, q_u ..... (Use T_c and I_a/P with exhibit 4-____)	csm/in			
7. Runoff, Q ..... (From worksheet 2).	in			
8. Pond and swamp adjustment factor, F_p .... (Use percent pond and swamp area with table 4-2. Factor is 1.0 for zero percent pond and swamp area.)				
9. Peak discharge, q_p ..... (Where $q_p = q_u A_m Q F_p$)	cfs			