

TR55-EB Tic-Tac-Toe Worksheet (KEY)

Use the information given below to complete the blanks for pre-development and post-development conditions for Sites A1, A2, and A3. Assume drainage areas equal site areas.

| A1 | | |
|----------|-----|--------|
| | Pre | Post |
| Tc (min) | 30 | 5 |
| Tc (hr) | 0.5 | 0.0833 |

| | | |
|--------------|-------|-------|
| CN | 74 | 79 |
| S | 3.514 | 2.658 |
| Ia | 0.703 | 0.532 |
| P, in | 2.6 | |
| Ia/P | 0.27 | 0.20 |
| qu (csm/in)* | 450 | 975 |

*Use Type II rainfall distribution

| | | |
|-----------|-------|-------|
| Q, in | 0.665 | 0.905 |
| Vr, ac-ft | 0.299 | 0.407 |
| Fp | 1 | 1 |

| | | |
|------------|----------|----------|
| DA (acres) | 5.4 | 5.4 |
| DA (sq mi) | 0.008438 | 0.008438 |

| | | |
|--------------|-----|-----|
| q(peak), cfs | 2.5 | 7.4 |
|--------------|-----|-----|

| | |
|-------------------|-----|
| q(allowable), cfs | 1.5 |
|-------------------|-----|

Pre = Pre-development condition
 Post = Post-development condition
 Tc = time of concentration
 CN = Curve Number
 S = Maximum Potential Retention
 Ia = Initial Abstraction
 P = Precipitation

| A2 | | |
|----------|-----|--------|
| | Pre | Post |
| Tc (min) | 30 | 5 |
| Tc (hr) | 0.5 | 0.0833 |

| | | |
|--------------|-------|-------|
| CN | 78 | 79 |
| S | 2.821 | 2.658 |
| Ia | 0.564 | 0.532 |
| P, in | 2.6 | |
| Ia/P | 0.22 | 0.20 |
| qu (csm/in)* | 475 | 975 |

*Use Type II rainfall distribution

| | | |
|-----------|-------|-------|
| Q, in | 0.853 | 0.905 |
| Vr, ac-ft | 0.384 | 0.407 |
| Fp | 1 | 1 |

| | | |
|------------|----------|----------|
| DA (acres) | 5.4 | 5.4 |
| DA (sq mi) | 0.008438 | 0.008438 |

| | | |
|--------------|-----|-----|
| q(peak), cfs | 3.4 | 7.4 |
|--------------|-----|-----|

| | |
|-------------------|-----|
| q(allowable), cfs | 2.6 |
|-------------------|-----|

qu = Unit Peak Discharge
 csm/in = cubic feet per second per square mile per inch
 Q, in = Runoff depth in inches
 Vr, ac-ft = Runoff volume in ac-ft (total runoff across drainage area)
 $Vr (ac-ft) = Q(in) \times DA(ac) \times 1ft/12in$
 Fp = Pond and Swamp Adjustment Factor
 DA, ac or sq mi = Drainage Area in acres or square miles
 q(peak), cfs = Peak Discharge Rate in cubic feet per second
 q(allowable), cfs = Allowable Peak Discharge Rate in cubic feet per second

| A3 | | |
|----------|------|--------|
| | Pre | Post |
| Tc (min) | 15 | 5 |
| Tc (hr) | 0.25 | 0.0833 |

| | | |
|--------------|-------|-------|
| CN | 74 | 79 |
| S | 3.514 | 2.658 |
| Ia | 0.703 | 0.532 |
| P, in | 2.6 | |
| Ia/P | 0.27 | 0.20 |
| qu (csm/in)* | 650 | 975 |

*Use Type II rainfall distribution

| | | |
|-----------|-------|-------|
| Q, in | 0.665 | 0.905 |
| Vr, ac-ft | 0.299 | 0.407 |
| Fp | 1 | 1 |

| | | |
|------------|----------|----------|
| DA (acres) | 5.4 | 5.4 |
| DA (sq mi) | 0.008438 | 0.008438 |

| | | |
|--------------|-----|-----|
| q(peak), cfs | 3.6 | 7.4 |
|--------------|-----|-----|

| | |
|-------------------|-----|
| q(allowable), cfs | 2.1 |
|-------------------|-----|