

Site Conditions	Shape Factor
Represents watersheds with very mild slopes, recommended by NRCS for watersheds with average slope of 0.5 percent or less. Significant surface storage throughout the watershed. Limited onsite drainage ditches. Typical ecological communities include: North Florida flat woods, South Florida flat woods, freshwater marsh and ponds, swamp hardwoods, cabbage palm flatlands, cypress swamp, and similar vegetative communities.	256 to 284
Intermediate peak rate factor representing watersheds with moderate surface storage in some locations due to depression areas, mild slopes, and/or lack of existing drainage features. Typical ecological communities include: oak hammock, upland hardwood hammock, mixed hardwood and pine, and similar vegetative communities.	323 to 384
Standard peak rate factor developed for watersheds with little or no storage. Represents watersheds with moderate to steep slopes and/or significant drainage works. Typical ecological communities include: long leaf pine, turkey oak hills, and similar vegetative communities.	484

The Department sponsored research on estimating coefficients for hydrologic methods used for the design of hydraulic structures. The results were reported in "Techniques for Estimating Hydrologic Parameters for Small Basins in Florida," by Scott Kenner, *et al.*, FDOT Project Number 99700-3542, April 1996. The resulting equation for estimating the NRCS shape factor is:

$$B = \exp[390 - 0.01396A - 0.00473HCIA \pm 0.00064L - 0.00053L_c \pm 0.00567S]$$

(2.2-23)

where:

- A = Drainage area (acres)
- HCIA = Hydraulically connected impervious area (percent)
- L = Length of main flow channel (feet)
- L_c = Length to centroid (feet)
- S = Main channel slope (feet/mile)

The designer should consult with district drainage personnel and, if necessary, WMD personnel before using a shape (peak rate) factor other than the standard factor of 484.