multiplied by adjustment factors indicated in Figures 5.17 and 5.18. Isohyets were drawn with steepest gradients corresponding to the greatest changes in elevation. This placed steepest gradients where mountains rise from valley floors. Different adjustments for south-eastern and north-western portions of the basin (Figures 5.17 and 5.18) resulted in some discontinuity at their common boundary, which was smoothed out in drawing isohyets. A depth–duration relation (Figure 5.20) was developed from a number of PMP depth–duration curves, such as Figures 5.15 and 5.16, so that 6-hour PMP could be adjusted to other durations. A depth–area relation (Figure 5.21) was constructed from intense small-area storm data for adjusting the 2.6-km^2 PMP values to other sizes of area.

5.3.2.7 Time distribution of rainfall

Observed extreme small-area storms in the project basin have generally been one-burst events in which little rain followed the extreme 3-hour rainfall, that is storm experience pointed to the occurrence of a 24-hour rainfall in a single burst. The following guidelines were therefore suggested for critical sequences:

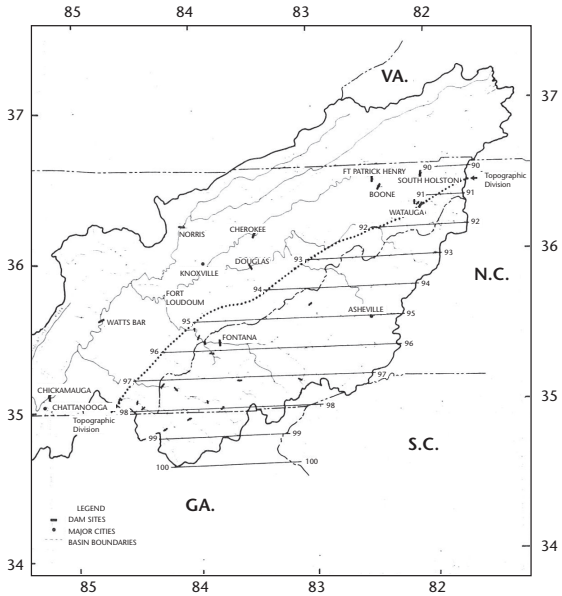

Figure 5.18. Latitudinal rainfall gradient (in per cent) in south-eastern postion of Tennessee River basin above Chattanooga, Tennessee (Zurndorfer and others, 1986)

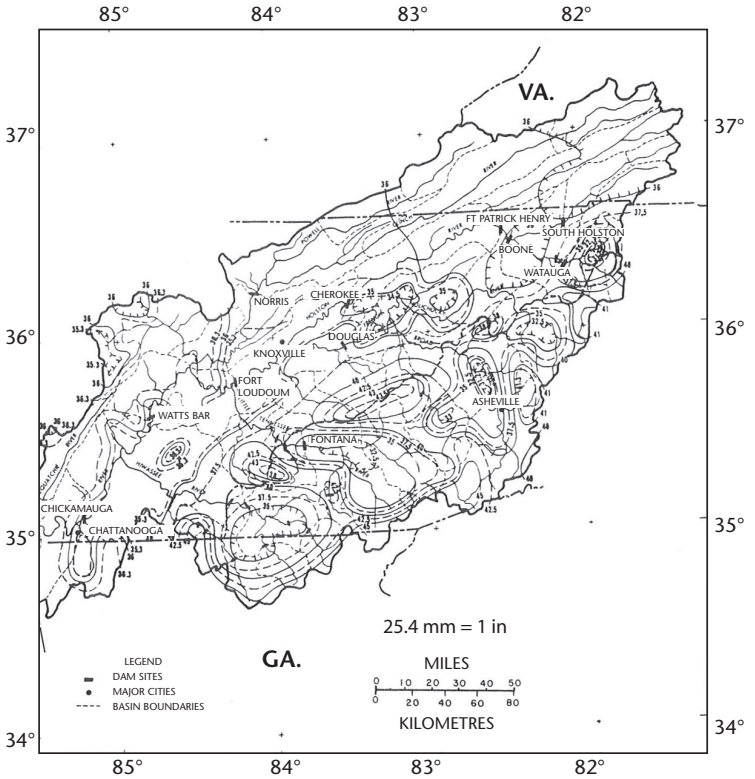

Figure 5.19. Six-hour 2.6-km^2 PMP (inches) for Tennessee River basin above Tennessee River basin over Chattanooga, Tenessee (Zurndorfer and others, 1986)