Lesson 32: Drainage Network Properties

Relation between Mainstream Length and Catchment Area [Bras 1990]

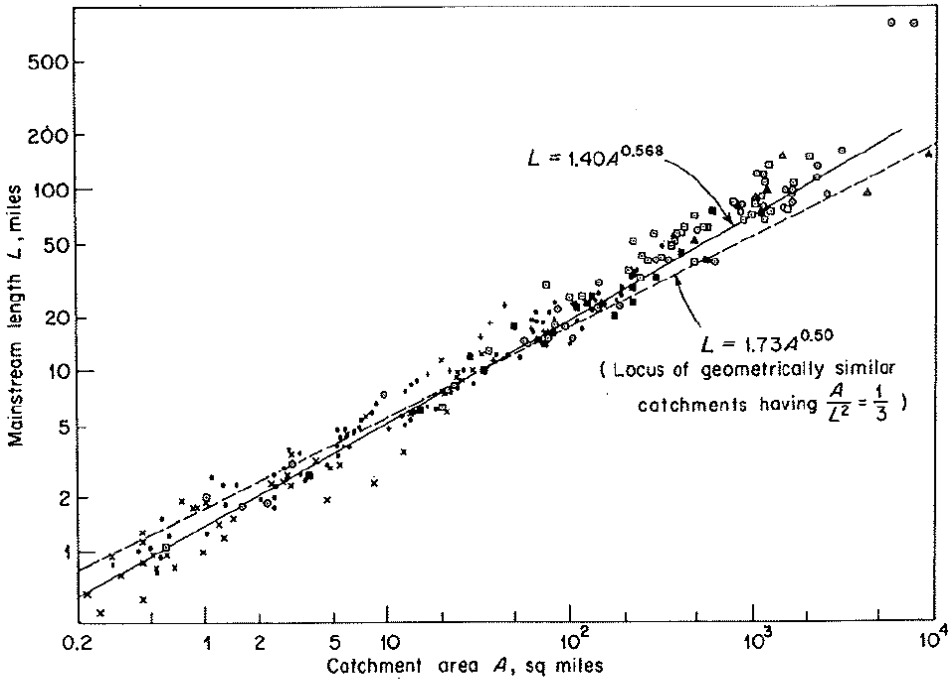

FIGURE 12.6 Relationship between catchment area and catchment length. Source: P. S. Eagleson, *Dynamic Hydrology*, McGraw-Hill, 1970.

Width Function [Bras 1990]

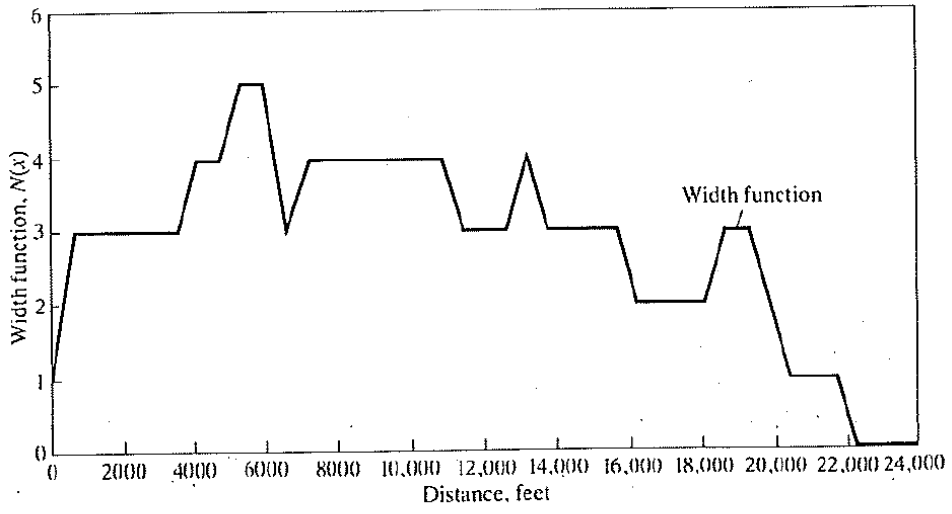

FIGURE 12.8 Width function of the Blue Creek Basin in Alabama. Source: M. R. Karlinger and B. M. Troutman, "Assessment of the Instantaneous Unit Hydrograph Derived from the Theory of Topologically Random Networks," *Water Resources Res.* 21(11):1693–1702, 1985. Copyright by the American Geophysical Union.

Lesson 32: Drainage Network Properties

Width Functions in an Urban Catchment [Smith et al. 2002]

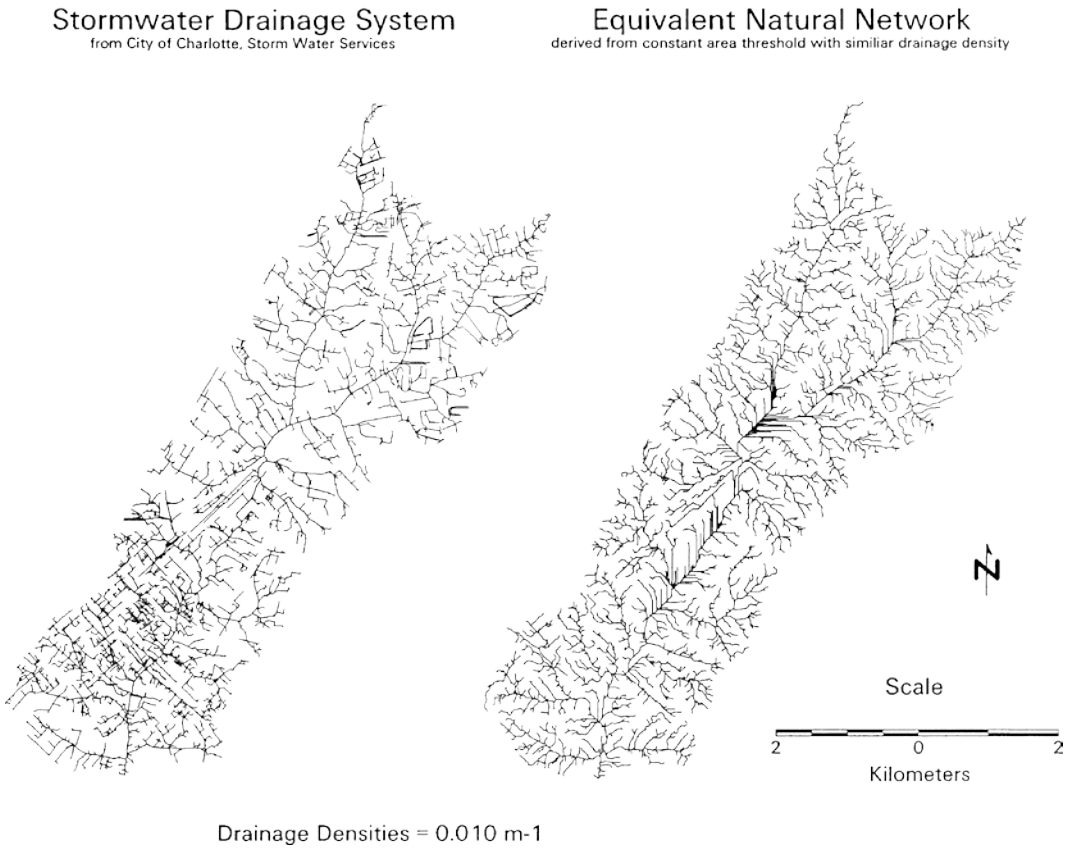

FIG. 10. The drainage network of Little Sugar Creek above Medical Center (left) including the sewer system and (right) derived from a10-m DEM (with the same drainage density as on the left).

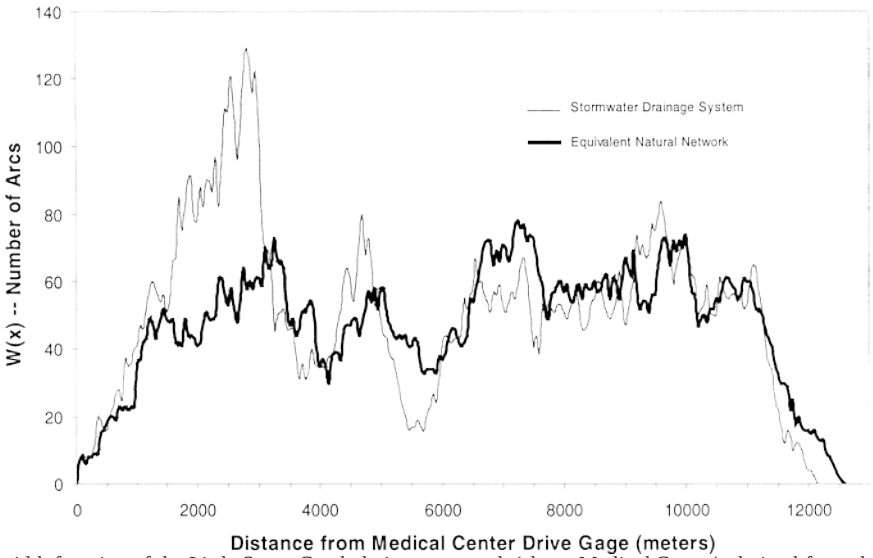

FIG. 11. The width function of the Little Sugar Creek drainage network (above Medical Center), derived from the complete stormwater drainage system (thin line; see Fig. 10) and the equivalent natural drainage network (thick line; see Fig. 10).