Upland soils in the Cicero Creek watershed are dominated by the Crosby-Treaty-Miami Association and Patton-Del Ray-Crosby Association. The valleys are predominantly Miami-Crosby-Treaty Association (Fig. IV-19). Crosby upland soils are somewhat poorly drained, while Miami soils are well drained. Patton soils are poorly drained. Miami and Crosby soils are developed in loess and the underlying calcareous glacial till, while Patton soils are formed in silty, water-laid sediments. The entire Cicero Creek drainage area is located on till (Fig. IV-20) and in some locations, sand and gravel are situated below the top layer of till (Heisel *et al*., 1972). The bedrock underlying the unconsolidated glacial sediments consists of Paleozoic dolomites, limestone and gypsum (Fig. IV-21).

Monthly precipitation normals for Noblesville, IN based on the period 1971-2000 show January and February as having the lowest precipitation (both average 1.93 inches) and July having the highest precipitation averaging 4.36 inches. The average annual precipitation for Noblesville, IN for the period 1971-2000 was 37.11 inches (PAMG, 2003). A USGS gauging station near Arcadia, IN (U.S. Geological Survey stream flow gauge station 03349500) measured discharge from 1954-1976. Mean monthly averages for this period (Fig. IV-22) show April as the month of highest discharge with an average of 224 ft^3/s and September as the month of lowest discharge with an average of 26.9 ft^3/s (USGS, 2003). There are currently no active USGS stream gauging stations in Cicero Creek Watershed upstream of the Morse Reservoir Dam.

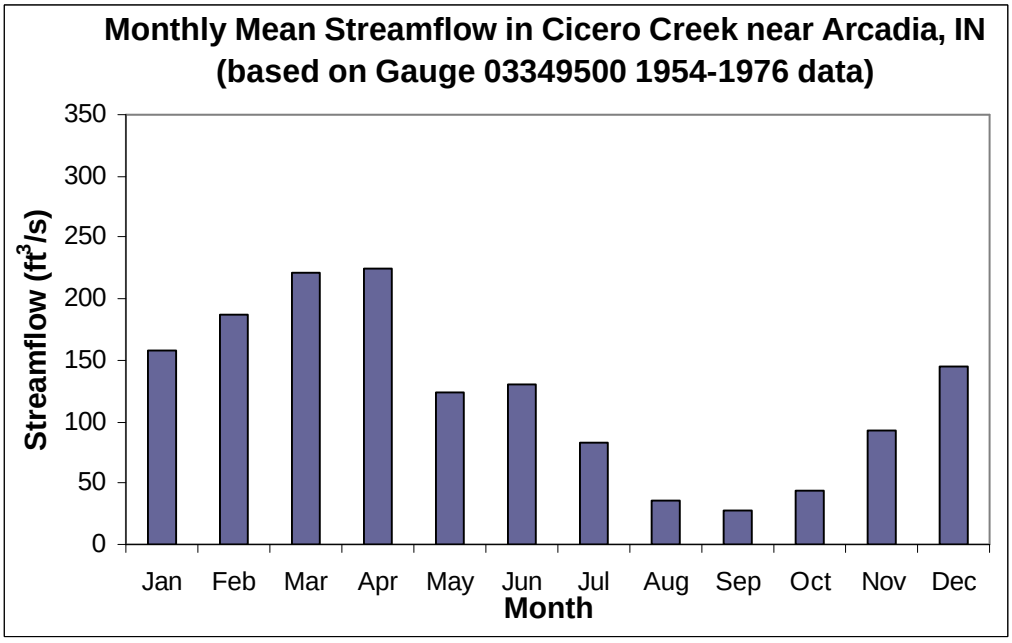

Figure IV-22

Reservoir History and Role in Drinking Water Supply

The Indianapolis Water Company (IWC) first envisioned the development of the Morse Reservoir (MR) between 1923 and 1945. Actual construction did not begin until 1953. Construction was completed on the MR in 1956. The primary purpose for its development was to generate a more consistent source of water supply to the IWC's White River water treatment facility, which is located approximately 15 miles south - southwest of the MR adjacent to the