

Water Management in the Nashville District - Background and Mission

Geographically, the Nashville District covers approximately 59,000 square miles in parts of seven states (TN, KY, VA, NC, GA, AL, MS). Two major rivers drain the entire watershed of the Nashville District. The more southerly, Tennessee River, is 652 miles long with a watershed of about 41,000 square miles. The Cumberland River is 695 miles long and drains about 18,000 square miles. Together these two rivers are the by volume the largest tributaries to the Ohio River, and have significant effects on flows in the lower Ohio and middle Mississippi rivers. These facts demonstrate the central and pivotal significance of water management actions on a large portion of the American heartland.

Water management within the Tennessee River Basin is the primary responsibility of the Tennessee Valley Authority (TVA). The Nashville District closely coordinates on a daily basis with TVA regarding numerous water management issues. The Cumberland River Basin is the area of primary responsibility for Nashville District Water Management. Within the Cumberland Basin the Nashville District operates a complex series of ten multi-purpose dams and reservoirs that function as a coordinated system. Table 1 provides some basic data for these projects.

Breaking it down more, Nashville District operates a mix of reservoir projects types. There are large, storage type reservoirs located on several major Cumberland River tributaries and on the main stem Cumberland River. In addition, there is a series of four, modern, relatively low head dams with navigation locks on the main stem Cumberland River. These run-of-the-river navigation projects generally have limited flood storage capacity and consequently have short hydraulic detention times. Most (nine) of these dams produce hydroelectric power with only Martins Fork in eastern Kentucky not having that capability. Martins Fork is unique in that it has true, selective withdrawal capability for manipulating the quality of releases into the tailwater.