RAW WATER SYSTEM MASTER PLAN
NARRATIVE AND SCOPE
CROSSVILLE, TENNESSEE
WAUFORD PROJECT NO 4637

In November of 2017, J.R. Wauford and Company, Consulting Engineers, Inc. (Wauford) submitted a report that forecast the future required water demands as well as a basic discussion of the previously discussed alternatives. The report acknowledged that Crossville is experiencing rapid growth when compared to other similarly sized municipalities and that the 50-year water demand for Crossville ranged from 11 to 12 million gallons per day (MGD). The current firm yields of Meadowpark Lake, Holiday Hills Lake, and Lake Tansi are reported in the following table as determined by the Corps of Engineers or their consultants during previous studies.

Reservoir	Firm Yield (MGD)
Meadowpark Lake	3.58
Holiday Hills Lake	5.34
Lake Tansi	3.50
Total	12.42

The firm yield is defined as the daily capacity that can be removed from each reservoir during the drought of record without running out of water. Each reservoir will experience significant drawdown during the drought of record but would eventually recover due to rainfall. Further modeling has indicated that raising Meadowpark Lake Dam approximately 18 feet will increase the firm yield of this reservoir to 4.8 MGD which would increase the total available firm yield of all three reservoirs to 13.64 MGD. The stated firm yields exceed the required forecast 50-year water demands.

The two basic alternatives that should be examined in order to recommend a road map to Crossville for project implementation are as follows:

1. Alternative No. 1 – Consolidate Water Treatment at Meadowpark Lake
    a. Raise Meadowpark Dam
    b. Expand Meadowpark Water Treatment Plant (WTP) to 10.5 MGD
    c. Construct facilities to transfer raw water from Holiday Hills Lake to Meadowpark Lake
    d. Construct improvements to provide for adequate transfer of treated water within the distribution system
    e. Abandon Holiday Hills WTP

2. Alternative No. 2 – Continued Use of two Water Treatment Plants
    a. Raise Meadowpark Lake Dam
    b. Expand Meadowpark Lake WTP to 7.0 MGD
    c. Expand and Renovate Holiday Hills WTP to 5.5 MGD

Examination of these two alternatives will identify the financial implications of each alternative and compare the life cycle costs of each alternative. In addition, the permitting requirements of each alternative will be considered.