

7.0 CONCLUSION

The proposed action consists of two primary options for meeting the purpose and need of water supply for Jackson County and the surrounding region. If implemented, the proposed action would lead either to the construction of a dam and impoundment of a reservoir in Jackson County, or the construction of a water transmission pipeline to an existing source of surface water outside of the County.

A dam and reservoir would be constructed along either War Fork and Steer Fork or along Sturgeon Creek in eastern Jackson County. A raw water transmission main would also be constructed to transport water from the reservoir to the Jackson County Water Association (JCWA) Treatment Plant at Tyner Lake. The proposed yield is projected to be sufficient to meet Jackson County's growing water needs to the year 2050. The reservoir would also provide outdoor recreation opportunities for activities such as swimming, boating, camping, hiking, and fishing.

If a dam and reservoir is chosen as the action to be taken, the resulting impoundment would range from 65 acres to 475 acres in size, depending on which of the five alternatives is chosen. The reservoir would provide a sustainable yield of 1.3, 2.2, 3.5, or 8.5 mgd of untreated water, depending on the alternative chosen, for withdrawal and use by the residential, commercial, and industrial sectors of Jackson County. One of the dam and reservoir alternatives, the War Fork and Steer Fork, 1.3 mgd alternative, would meet the projected water needs of Jackson County only. All other dam and reservoir alternatives would meet the projected water needs of Jackson County and contribute to meeting the water needs of the surrounding region.

Two alternatives to the proposed dam and reservoir were evaluated in this EIS. The Wood Creek Lake pipeline alternative consists of the construction of a 22.6-mile pipeline to carry potable water from the Wood Creek Water District water distribution system in Laurel County to the JCWA transmission main near Tyner. The Lock 14 pipeline alternative consists of the construction of a 20.5-mile pipeline from a new intake at Lock 14 of the Kentucky River in Lee County to the JCWA Treatment Plant.

For each of the dam and reservoir alternatives, the short-term construction phase would generate a number of temporary, adverse environmental impacts, most of which range from insignificant to moderately significant in magnitude. The degree or intensity of these impacts would vary proportionately with the size of the proposed dam and reservoir. Adverse, but insignificant, short-term impacts would occur with regard to air quality, noise, and waste management. No impacts on environmental justice are anticipated to result from the proposed action. Moderately significant, short-term adverse impacts would occur, depending on the alternative, in the resource areas of geology and soils, surface and groundwater resources, biological resources, cultural resources, land use, transportation, socioeconomics, and human health and safety. Implementation of the recommended mitigation measures would reduce construction-related adverse impacts on a number of these resource areas.

The construction phase would generate relatively modest economic benefits for Jackson County, which, for the proposed Sturgeon Creek alternatives, must be weighed against the social and economic cost of relocating existing residents.

There would be relatively minor, short-term construction-related impacts associated with constructing a water transmission main from the proposed reservoir to the JCWA Treatment Plant.

Short-term, construction-related impacts resulting from the Wood Creek Lake and Lock 14 pipeline alternatives would be of a similar nature to those of the transmission pipeline constructed from one of the proposed reservoirs to the JCWA Treatment Plant. Since the Wood Creek Lake and Lock 14 pipelines would be 2 to 3 times longer than any of those constructed from one of the proposed reservoirs, these impacts would be correspondingly greater, although still relatively minor.

The long-term, operational phase of the proposed action encompasses the duration of the 50-year design life of the proposed dam or pipeline alternatives. A number of impacts, both adverse and beneficial, ranging from insignificant to very significant, would be associated with this phase of the dam and reservoir alternatives. In general, impacts would vary proportionately with the size of the proposed dam and reservoir alternative. Most long-term adverse impacts of the project on geology/soils, surface and groundwater resources, air quality, noise, biological resources, cultural resources, transportation, land use, and waste management would be relatively minor. For the War Fork and Steer Fork dam and reservoir alternatives, impacts to downstream hydrology, biology, and scenic qualities would be more significant than those for the Sturgeon Creek alternatives, due to the more natural condition of the watercourse and valley and the presence of a Wild and Scenic Study River segment downstream. However, the permanent loss of actively-used Prime Farmland at both proposed Sturgeon Creek dam and reservoir sites, in a County that does have much farmland, would be considered very significant.

Long-term impacts of the dam and reservoir alternatives on recreation, socioeconomics, environmental justice, and human health and safety would mostly be very beneficial.

The long-term impacts resulting from the Wood Creek Lake and Lock 14 pipeline alternatives would be generally minor, and similar to each other in most respects. In combination with projected growth in water consumption by customers of the Wood Creek Water District, piping large volumes of water from Wood Creek Lake to Jackson County would cause the sustainable yield of that resource to be exceeded sooner than it would be otherwise. Also, as withdrawals from the lake approach and or exceed its sustained yield, lake level fluctuation would increase significantly, which would compromise the recreational value of the lake for boating and fishing. In contrast, the Lock 14 pipeline alternative would avoid these adverse effects, since the proposed amounts of withdrawal for Jackson County represent a very small fraction of the average flow of the Kentucky River.

As with the dam and reservoir alternatives, the long-term impacts on socioeconomics, environmental justice, and human health and safety associated with the pipeline alternatives

would mostly be very beneficial. However, the pipeline alternatives would not provide the additional recreation benefits that would result from the dam and reservoir alternatives.

In conclusion, the seven action alternatives evaluated in the DEIS and this FEIS would each meet the projected water needs of Jackson County. They also share similar adverse and beneficial impacts in certain resource areas. However, certain other impacts vary from alternative to alternative. The three War Fork and Steer Fork dam and reservoir alternatives would have greater adverse impacts on natural habitat and wildland resource values than any of the other alternatives. These impacts would be smallest for the War Fork and Steer Fork, 1.3 mgd alternative and greatest with the War Fork and Steer Fork, 3.5 mgd alternative. The greatest impact of the two Sturgeon Creek dam and reservoir alternatives would be on the human environment rather than the natural environment, due to the necessity of relocating a number of residents from the project area. The other key impacts resulting from the Sturgeon Creek alternatives would be permanently flooding several existing roads and some of the best agricultural land in Jackson County. All dam and reservoir alternatives would offer lake-based recreational opportunities to residents of Jackson County and the surrounding region. While the two pipeline alternatives would avoid most significant adverse impacts, they would confer no recreational benefits on these residents. Furthermore, in several decades, the Wood Creek Lake pipeline alternative would likely prove problematic for water supply for current Wood Creek Water District customers and recreation on Wood Creek Lake.