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Project Name: City of Sevierville Intake
Project Number: 2004-61

FINDING OF NO SIGNIFICANT IMPACT (FONSI) AND ADOPTION OF ENVIRONMENTAL ASSESSMENT PREPARED BY U.S. ARMY CORPS OF ENGINEERS (USACE)

TENNESSEE VALLEY AUTHORITY

REQUEST FOR SECTION 26a APPROVAL - SEVIERVILLE WATER SYSTEMS PROPOSED RAW WATER INTAKE AND WATER TREATMENT PLANT AT FRENCH BROAD RIVER MILE (FBRM) 27.5L, SEVIER COUNTY, TENNESSEE

Proposed Action and Need

Sevierville Water Systems (SWS) proposes to construct a raw water treatment plant (WTP), associated intake and finished water line on McCroskey Island in Sevier County as a new primary source of potable water. The intake would be located at French Broad River Mile (FBRM) 27.5L about 5 miles below Douglas Dam and the finished water line would cross the island back channel at FBRM 27.1L. The WTP would initially withdraw 12 million gallons per day (MGD) and include provisions for ultimate ease of expansion to 24 MGD. The project is proposed to consist of a firm capacity 12 MGD plant, utilizing state-of-the-art ultra-filtration membrane and control systems, coagulation to remove disinfection by product precursor organics and raw water pumping and transmission from the French Broad River to the WTP through approximately 1,600 feet of 36-inch diameter ductile iron pipe.

The intake route would leave the McCroskey Island shore, cross the Little Pigeon River at its mouth and then run upstream in the French Broad River to a point where water depth allows for a 5-foot vertical clearance for the intake screens. The proposed intake line would be installed in phases over approximately 16 to 20 months. Intake installation would temporarily disturb approximately 1.3 acres (55,000 square feet) of riverbed. The width of the trench excavation would be on average approximately 11-feet to 12-feet and, depending on the location, approximately 15-feet or less in depth to accommodate the pipe and anchors. Projected low flow is at elevation 862.4-foot mean sea level (msl). The top of the intake screen would be at elevation 857.4-foot msl. Construction techniques would vary depending upon the depth of water available for barge passage and flow rates in the Little Pigeon River and the French Broad River. Generally, in-stream construction would be accomplished using floating platforms (barges) or temporary riprap construction pads. There would be no sidecasting of excavated spoil material. Suitable excavated native material would be used as backfill to bed the piping and onshore as fill for the WTP. Excess spoil material would be placed and contained at an upland site above elevation 878.7 msl (100-year flood elevation at FBRM 27.5). SWS would coordinate work phases with TVA's River Operations, River Forecast staff so that controlled or reduced flow conditions from Douglas Dam can be achieved when some phases of construction are ongoing. Uncontrolled flows from the Little Pigeon River would be monitored by SWS.

See Sections 1.0, 1.1 and 1.1.2, in particular Sections 1.2, Project Changes, in the attached USACE EA for a more detailed description of the project proposal including the intake structure, anchoring method, dimensions and construction methods. Finished

waterline construction is described in Section 1.1.2.

SWS currently provides water to its customers from its existing WTP, which withdraws raw water from the Middle Prong of the Little Pigeon River. The WTP does not have the hydraulic capacity to increase production at the existing WTP beyond 4 MGD, its current capacity. In addition, the raw water source is not reliable under low flow conditions. The existing WTP would be used as an alternative source and phased out in future years once this new source becomes available.

TVA's action would be to approve the proposed water intake and WTP in the French Broad River floodplain under Section 26a of the TVA Act. The finished water line crossing is included in the "permit area" (project scope) and impacts are evaluated in the attached EA.

Impacts Assessment

Because a maximum peak daily withdrawal of 12 MGD represents a small fraction (18.6 cfs or approximately 3 percent) of the minimum river flow, withdrawals up to this amount are expected to have only a minor effect on flows in the French Broad River. Furthermore, assuming that 70 percent of the water withdrawn is returned to the river through the SWS wastewater treatment plant (WWTP) outfall about one-half mile downstream, the minimum river flow downstream of the outfall would be reduced by 5.6 cfs or less than on 1 percent.

Installation and operation of the SWS intake could potentially impact aquatic organisms in the French Broad River adjacent to and downstream of McCrosky Island. Construction impacts would be reduced by conducting the majority of work from a floating barge with short-term storage of spoil material on barges placed adjacent to the work site. Use of temporary riprap construction pads, flow diversion and controlled flows would allow some portion of the work to be completed "in the dry." The habitat quality in this area is very low, and no federally listed species or important populations of aquatic organisms were collected in the survey for fish and mussels at the McCroskey Island site (see Aquatic Protected Species Survey Report in Appendix F in the attached EA). To the extent that they can be located in the riverbed, common native mussels would be moved from the direct impact footprint and relocated to suitable habitat upstream. Native material would be backfilled on top of the intake pipeline trench for 60 percent or more of its length to resemble the existing habitat condition on the river bottom. Because of measures described above and in the attached EA, impacts on aquatic biodiversity, including endangered species, would be minor and insignificant.

Construction of the WTP and intake structure would occur within the limits of the French Broad River 100-year floodplain. For compliance with Executive Order 11988, (Floodplain Management), an underwater intake structure is considered to be a repetitive action that should result in minor floodplain impacts. In regards to the location of the WTP, SWS has evaluated alternatives to support a determination of "no practicable alternative" to the proposed floodplain location. The proposed WTP location is on the north side of the existing service area where most of the system growth is occurring. Other locations would require SWS to purchase land, would not be within close proximity to its WWTP and would require a greater lengths of waterline into its service area; thus, substantially increasing its costs. Any potential floodplain impacts would be minimized by elevating and/or flood-proofing all components of the plant above the 100-year elevation.

Mitigation

TVA's Section 26a approval is contingent upon successful implementation of Best Management Practices for erosion and sediment control including TVA General Conditions 1, 9, and 10, and Standard Conditions 3c, and 6a, 6c through 6i (See TVA General and Standard Conditions in Appendix H in the attached EA). SWS will ensure its WWTP continues to comply with provisions of its National Pollution Discharge Elimination System permit. Work on the new intake facility will be conducted in compliance with all provisions and special conditions of the Section 401 Water Quality Certification (WQC) issued by the Tennessee Department of Environment and Conservation (TDEC) issued on December 14, 2004, and recommendations of the U.S. Fish and Wildlife Service (USFWS) in its letter of December 10, 2004. Since at least one acre of land would be disturbed by the project, SWS will also have to comply with a TDEC storm water permit to be issued in accordance with Phase II storm water regulations under the National Pollution Elimination Discharge System program.

SWS will adhere to all conditions included in the USACE permit issued on January 31, 2005, and the TVA Section 26a permit. As included in the attached EA, an onsite pre-meeting would be held to explain permit conditions to the project construction contractor. SWS has ensured the permitting agencies that measures will be taken to minimized project construction and operational impacts. This would include use of such measures as use of sequential blasting techniques, no in-stream construction during the snail darter spawning season, relocating native mussels, no sidecasting of construction spoil material in the riverbed, backfilling the surface of the trench with native material, planning some construction to be conducted in association with reduced river flows, use of temporary riprap construction pads and working "in the dry," to the extent practicable; abiding by stipulations included in the Memorandum of Agreement for the (MOA) for recovery excavations from archaeological site 40Sv43 on McCroskey Island and other measures.

Public and Intergovernmental Review

On October 13, 2004, USACE issued Joint Public Notice (JPN) No. 04-69 to advertise the proposed activities (see Appendix A in the attached EA). Responses to the JPN were received from the Tennessee Historical Commission (THC), Tennessee Wildlife Resources Agency (TWRA) and USFWS. Comments are summarized in Section 2.2 and discussed in Section 2.3 of the attached EA (also see Appendix D for a copy of these comments). SWS rebuttals are included in Appendix E in the attached EA. Comments from THC were addressed under an MOA (see Conclusions and Findings below). A follow-up meeting with USFWS and TWRA was held on January 13, 2004, where concerns about construction methods and aquatic species impacts were addressed and resolved. No other comments were received.

Conclusion and Findings

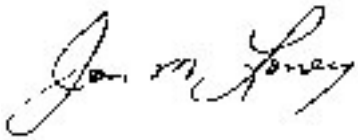
THC responded to the JPN by letter dated October 19, 2004 requesting that immediate consultation begin under Section 106 of the National Historic Preservation Act. The proposed WTP construction would have an adverse effect on an archaeological site. Mitigation of this adverse effect has been addressed under a Memorandum of Agreement (MOA) with the Tennessee State Historic Preservation Officer and other

consulting parties pursuant to the regulations of the Advisory Council on Historic Preservation (36 CFR Part 800). MOA stipulations require the conduct of intensive data recovery excavations. SWS will abide by the requirements of federal and state historic preservation laws and is an invited signatory to the MOA (see Section 3.4, in particular historic properties and cultural values and the MOA in Appendix G in the attached EA).

By letter dated November 10, 2004, TWRA requested that stream sedimentation be minimized as much as practicable to reduce impacts on the endangered species. By letter of December 10, 2004, the USFWS indicated that no federally listed endangered or threatened species would be adversely affected by the project (see Appendix D in the attached EA). If conducted in accordance with permit conditions, TVA has determined that the proposed construction and operation of the intake and WTP would not likely adversely affect listed endangered and threatened species. TWRA and USFWS also expressed concerns about whether sufficient water would remain in the river to support aquatic life. TVA analysis indicates that river flows would be adequate to meet the peak flow withdrawal rate of 12 MGD and still maintain the quality of the aquatic life in the river. It is expected that the 12 MGD withdrawal rate would meet the future demand resulting from growth in the area. However, it is possible (although far from reasonably foreseeable) that the increased demand could result in the need for SWS to expand to a 24 MGD withdrawal rate. Even so, this high withdrawal rate represents only a small fraction (6 percent) of the minimum flow in the French Broad River. TVA's Section 26a permit would limit SWS to a withdrawal rate of 12 MGD. A request for a higher withdrawal rate would be subject to additional Section 26a and National Environmental Policy Act reviews.

On December 14, 2004, TDEC issued its Section 401 WQC to SWS certifying that water quality standards will not be violated if the work is conducted in accordance with the certification. A copy of this certification is included in Appendix B of the attached EA.

TVA has independently reviewed the proposed actions and the accuracy, scope, and content of the USACE-prepared EA and FONSI. TVA has decided to adopt the USACE EA. It is attached to this FONSI and incorporated by reference. Based on TVA's direct project involvement and review of the USACE's EA, TVA has concluded that the impacts on the environment have been adequately addressed; and necessary mitigation, including such identified in this FONSI, has been identified. We conclude that the proposed action would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required. This FONSI is contingent upon successful implementation of the mitigation measures imposed by the permitting agencies.



February 4, 2005

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Date Signed