Document Type: EA-Administrative Record
Index Field: Finding of No Significant Impact (FONSI)
Project Name: Benton-Decatur Sewer Outfall
Project Number: 2003-108

FINDING OF NO SIGNIFICANT IMPACT AND ADOPTION OF THE ENVIRONMENTAL ASSESSMENT PREPARED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

TENNESSEE VALLEY AUTHORITY

PROPOSED EASEMENT AND SECTION 26A APPROVAL TO BENTON-DECATUR COUNTIES SPECIAL SEWER DISTRICT FOR SEWER LINE AND OUTFALL

Proposed Action and Need

The Benton-Decatur Counties Special Sewer District (BDCSSD) proposes to construct a wastewater collection and treatment system to serve commercial businesses in the vicinity of Exit 126 along Interstate 40 (I-40) and two nearby I-40 rest areas in southern Benton and northern Decatur Counties. Most or all of the existing sewer facilities for these businesses are in a state of failure, causing pollution (fecal coliform and ammonia) to Eagle Creek. The Tennessee Department of Environment and Conservation (TDEC) has informed the businesses that alternate sewer disposal must be provided in order to continue operation. Additionally, operation of the rest area septic systems for the Tennessee Department of Transportation (TDOT) has been difficult and problematic; therefore, TDOT would also use the service provided by the new system.

TVA's action would be to approve the construction of an outfall from the proposed treatment system under Section 26a of the TVA Act, and to grant a permanent easement over approximately two acres of TVA public land for the sewer line. This TVA public land is currently under license to U.S. Fish and Wildlife Service (USFWS) as part of the Tennessee National Wildlife Refuge (TNWR). Because USFWS-TNWR is not the fee owner of the land, they determined that this secondary use of Refuge lands did not require them to issue a finding of compatibility for the proposed pipeline to cross the TNWR and locate the discharge at Tennessee River Mile 117.8. TVA has determined that Section 26a approval is not needed for the proposed stream crossings, since there would be no obstruction as a result of the crossings.

Other Environmental Reviews and Documentation

NPDES permit issued by TDEC, Division of Water Pollution Control: On March 1, 2004, TDEC, Division of Water Pollution Control (DWPC) issued a permit to discharge under the National Pollutant Discharge Elimination System (NPDES) to the BDCSSD for a treated domestic wastewater outfall at Tennessee River Mile (TRM) 106.3. The designation of TRM 106.3 as the outfall location was a typographical error, and TDEC DWPC has verified that the outfall location for the NPDES permit is in fact TRM 117. The NPDES permit will be corrected to reflect the appropriate river mile. The public notice for the draft NPDES permit that was published locally in the newspaper and posted in the Benton and Decatur County Courthouses by the BDCSSD, referenced the correct latitude and longitude and river mile for the proposed discharge.

EA and Amendment prepared by TDEC, Division of Community Assistance (DCA): The DCA prepared an Environmental Assessment (EA) for this project and on March 22, 2004, issued a Finding of No Significant Impact (FONSI) and solicited comments on the EA during a 30-day public review period (see Attachment 1). TVA acted as a cooperating agency in the preparation of the EA. The EA includes the proposed action, the no action alternative, three alternatives for treatment, and four alternatives for discharge, the preferred alternative, and the existing wastewater treatment conditions. Their analysis included potential for impacts to surface waters, groundwater, soils, topography, wetlands, and the significant managed area (TNWR). The EA also included information to address the concerns of commenting agencies on stream crossings, historical and archaeological sites, threatened and endangered species, wetlands, navigation, chlorine toxicity of the effluent, and temporary construction impacts. The TDEC-prepared EA identified 13 special conditions to be included in the State Revolving Fund Loan agreement. In response to TVA and USFWS comments on the EA and FONSI, TDEC issued an amendment to the EA and FONSI on May 25, 2004 (see Attachment 2). This amendment included additional information and analysis to address concerns over NPDES permit limits, surface water quality, and agency comments. The amended EA stated that no federally listed or state-listed threatened or endangered mussel species were observed in the proposed outfall area in a mussel survey conducted by the Tennessee Wildlife Resources Agency.

Public and Intergovernmental Review

Several opportunities were provided for public comment. DWPC issued a public notice to solicit comments on the draft NPDES permit for the project. This notice was mailed out and posted on the Department's web page on July 7, 2003. Additionally, the notice was published in The News Leader on August 6, 2003, and posted in both the Benton and Decatur County Courthouses for 30 days beginning on July 30, and August 1, 2003, respectively. DWPC did not receive a request for a public hearing.

On its own initiative, TVA also ran a public notice ad in The News Leader Wednesday, June 11, 2003, and in The Camden Chronicle Thursday, June 12, 2003, soliciting comments on BDCSSD's proposal. Additionally, The Jackson Sun published an article in the Across West Tennessee - Benton County section on July 1, 2003, announcing TVA's comment period for the project. TVA received three written comments and one comment by telephone. Three commenters were opposed and one was in favor of the proposed action. One supported the project because of inadequate sewer facilities near her property, the pollution to the nearby creek, and the possibility for new businesses to locate at the interstate exit. Others were concerned about the potential effects of the effluent to wildlife and threatened and endangered species in the river.

On September 16, 2003, TDEC-DCA held a public hearing at the Community South Bank in Parsons, Tennessee, to solicit public input on the Benton-Decatur sewer project. The hearing was advertised in The Camden Chronicle and The News Leader, local newspapers circulated in Camden and Parsons, Tennessee. Notification of DWPC's draft NPDES permit for the Benton-Decatur sewer project as well as other aspects of the project were discussed at the Public Meeting.

On March 22, 2004, TDEC-DCA issued an EA and a FONSI for this project with a 30-day public review period. Subsequently, on May 25, 2004, TDEC-DCA issued an amended EA and a FONSI for this project. The TDEC-DCA EA lists the governmental agencies that were contacted for comments. TVA received eight other public comments since TDEC completed its environmental review. Of these comments, one was in favor of the project; the others requested another public hearing in Camden, Benton County. Questions relating to environmental issues included why an EIS was not prepared, why the project was designed using an eight-inch main for a 0.1 MGD (million gallons per day) NPDES permitted flow, what alternate designs were considered, new industrial growth in the area, and potential effects on water quality and mollusks. TVA has considered these comments in its review and determined that an EIS is not needed. Further, TVA has determined that adequate opportunities for public input have been provided, and an additional public hearing is not necessary.

Alternatives

The EA prepared by TDEC included the proposed action, the no action alternative, three alternatives for treatment (including land application), and four alternatives based on location of the proposed outfall. Under No Action, TDEC would not provide funding for the sewer collection system, and TVA would not grant an easement across TVA land for the force main or approve the sewer outfall under Section 26a of the TVA Act.

Three alternate methods of treatment that result in a discharge were evaluated: transmission of sewage to the city of Parsons for treatment; the Parkson Biolac-Type Extended Aeration Activated Sludge Using an Earthen Basin; and the Linvil Rich-Type Dual Power Multi-cellular (DPMC) Lagoon. The Linvil Rich DPMC lagoon was selected as the preferred treatment method, as it was found to be cost-effective.

Three of the four discharge locations considered were: Eagle Creek at Gossett Road or Coxburg Road; Tennessee River at Rockport Community (TRM 106.3); and Birdsong Creek at Highway 641. Eagle Creek is on TDEC's section 303(d) list of polluted streams because of organic enrichment/low dissolved oxygen, unionized ammonia, and pathogens. At the time of TDEC's completed environmental review, a total maximum daily load (TMDL) had been proposed which specified the removal of the existing discharges into Eagle Creek as the recommended means of remedying the impairment. This TMDL was approved on May 6, 2004, (see attachment 3), with an implementation plan calling for a regional wastewater treatment system with a discharge to the Tennessee River. Permitting a discharge under the NPDES was not an option under this TMDL. The proposed effluent force main at Tennessee River mile (TRM) 106.3 at the Rockport Community would cross a very narrow portion of the TNWR. Although the Tennessee River could sustain a surface discharge at this location, a wide sandbar renders the site less conducive to construction, especially under low flow conditions. Because of the sandbar, the discharge could be part of an eddy during low flow conditions. These considerations led to the rejection of this alternative. Birdsong Creek is a small stream that periodically dries up (3Q20 low flow of zero cubic feet per second or cfs). A discharge to Birdsong Creek at Highway 641 would require more stringent effluent permit limits because of the low flow and would have more potential for water quality impacts, because a small stream would not dilute the effluent as efficiently as the Tennessee River. These considerations led to this alternative not being viable. Additionally, land application was also considered as an alternative to a discharge, but not selected because the area's soils characteristics would require large tracts of property (approximately 30 acres). Other potential environmental issues associated with

land application include nitrate loading into groundwater aquifers and effects on surface streams from stormwater runoff from the site. Accordingly, these three discharge locations and land application were considered but not analyzed in detail because they did not offer any environmental advantages or were impractical. TVA has independently reviewed information about these alternatives and has determined that the reasons for eliminating the alternatives have a sound basis.

The fourth discharge location, at TRM 117.8, using the DMPC treatment method was the preferred alternative. Under the Preferred Alternative, the proposed wastewater collection and treatment system would consist of three pump stations, 23 manholes, approximately 28,100 linear feet (LF) of 8-inch diameter polyvinyl chloride (PVC) gravity sewer line, and approximately 24,350 LF of 8-inch raw sewage force main. The wastewater collection system would terminate at a pumping station located 1,500 feet east of the Interchange and north of Eagle Creek. Untreated wastewater would be pumped through the force main to the proposed 100,000 gallons per day (GPD) lagoon-type wastewater treatment facility (WWTF). The proposed WWTF would be constructed on a 19-acre site south of the eastbound Interstate 40 Rest Area. The headworks for the proposed WWTF would include screening, grit removal and flow monitoring. The intermittent discharge flow would be equalized before being subjected to disinfection by ultraviolet light equipment. Sludge generated by the WWTF would be stored and digested in a separate aerated pond on the site. Treated effluent would be pumped through 30,000 linear feet of 8-inch force main to Tennessee River Mile (TRM) 117.8. The effluent would be discharged from a submerged outfall in the river approximately 200 feet from the west bank at a depth of approximately 21 feet.

Initially, the TRM 117.8 site was not considered because information on the topographic maps indicated it would require crossing wetlands along the route to reach the discharge point. Later in the planning process, it was discovered that a new boat ramp had been built near the proposed outfall point at TRM 117.8, and that the effluent line could run along a maintained road for the entire distance (near the lake). Therefore, the previously-identified wetlands in the area would be avoided. In comparing this site with the Rockport site (described above), this site has the least potential for water quality (and aquatic) impacts, because the discharge point is located in the main river channel yielding better mixing at the proposed outfall point even under low flow conditions; by comparison, the downstream point (Rockport, TRM 106.3) would discharge into waters that could be part of an eddy during low flow conditions. Additionally, this alternative has the shortest route from the proposed treatment plant to the outfall and follows an existing road bed.

TVA's Independent Review of Impacts

As a cooperating agency, TVA provided comments both during scoping and on the Draft EA, prepared by TDEC. TVA also conducted additional analysis after questions were raised by the USFWS subsequent to completion of the TDEC EA concerning the impact of the discharge and other issues. Based on an independent review of the impacts of the proposed sewer collection and treatment system as outlined in TDEC's EA, TVA adopts this EA as its own. The analysis in the EA is further supplemented by TVA's analysis of impacts to mussel species and of other issues described below.

TVA reviewed the Phase I Cultural Resources Survey and determined that no historic properties would be affected by the proposed undertaking. The Tennessee State Historic Preservation Office concurred with this finding by letter of December 10, 2003,

(see Attachment 4). To minimize impacts, a majority of the sewer lines and effluent force main follow existing ROWs. These ROWs border open fields, and early successional growth of hardwoods, pine, and cedar which are common in West Tennessee. The 19-acre treatment plant site is a pine plantation. There would be temporary (construction) impacts to wetlands associated with construction of the pipelines. To avoid adverse impacts, the upper one foot of the trench through the wetlands would be filled with backfill from the trench, preventing drainage of the area during construction. In addition, temporary construction access roads would be removed and returned to preconstruction grade and contour, and mats for mechanized heavy equipment would be placed over soils to prevent unnecessary damage. Approximately 0.1 acre of permanent wetland impacts would occur near the I-40 and U.S. Highway 641 interchange. This impact is expected to be authorized under USACE nationwide permit number 12. A portion of the collection system and pump station would be located in a prior converted wetland near the I-40 and State Route 69 intersection. Impacts to this prior converted wetland would be minimal and short-term.

A mussel survey requested by the USFWS for the project area was conducted by the Tennessee Wildlife Resources Agency (TWRA). TWRA reported that that no federal or state listed threatened or endangered mussel species were observed in the proposed outfall area. However, the report indicated that additional species could occur in this reach of the Tennessee River, and that some individuals of at least one federal endangered species could be present. Ordinarily, a survey that identifies no federally listed threatened or endangered (T&E) mussel species would support a finding of "no effect" to T&E mussel species. However, given the relatively high diversity of "non-listed" mussel species (including young and old individuals) indicated by the survey and the presence of appropriate mussel habitat in the area, TVA conducted additional analysis to better understand potential effects to federal threatened or endangered mussel species, assuming such species were present in the project area.

On June 1, 2004, consistent with its responsibilities under the Endangered Species Act (ESA), TVA provided a finding that its actions related to the BDSSD project would "not likely adversely affect" endangered and threatened species. This finding was based on the anticipated ammonia dilution ratio of 37,780 to 1 based on a projected discharge ratio of 0.1 MGD and a stream flow of 3,876 MGD. In its July 16, 2004, response to this finding, USFWS requested additional information before providing concurrence with TVA's finding. In response to the suggestions in the July 16, 2004 letter, TVA reviewed detailed water quality and flow data for the subject reach of the Tennessee River and conducted effluent plume modeling that assessed ammonia impacts under a variety of flow regimes. The results of this supplemental review are provided below and supporting information is attached (see attachment 5).

On October 4, 2004, TVA met with staff of USFWS, TWRA, and DWPC to discuss the water quality effluent modeling and the conclusions drawn therefrom. The modeling indicated that under the outfall design initially proposed (i.e., discharge pipe oriented downwards), the discharge would come in contact with the bottom with little to no mixing. This prompted TVA to evaluate other design alternatives that might facilitate plume mixing. The other outfall design alternatives evaluated were an 8-inch open pipe elbow oriented upwards 45 degrees; and a diffuser with four ports on six feet centers oriented upwards 45 degrees.

The modeling demonstrated that the installation of a 45-degree elbow oriented upwards would result in the plume being fully vertically mixed prior to contacting the bottom. Predicted ammonia concentrations after mixing under such an outfall design would range between 0.03 to 0.05 mg/L. Based on exposure durations as defined in the criteria document, these concentrations would be orders of magnitude below current EPA water quality criteria for ammonia (both acute and chronic), even under the infrequent and short-lived low flow (0-2,000 cfs) conditions at the site. Notably, these low flow conditions (< 2,000 cfs) occurred only 165 hours per year. By contrast, the 1Q10, 7Q10, 4Q3, 30Q2 and 30Q5 flows for this reach of the Tennessee River are 6,000 cfs, 10,900 cfs, 16,000 cfs, 27,200 cfs, and 19,500 cfs, respectively. Obviously, higher stream flows would result in more mixing, pointing to the overly conservative nature of TVA's analysis. TVA also evaluated the use of a diffuser in an upward 45-degree configuration. A diffuser in this configuration would result in a slightly higher ammonia concentration but still well within the current EPA criteria for ammonia. However, this diffuser option was not recommended because the plume could recirculate and contact the bottom before being entrained downstream. The probability of this happening would depend on river flow conditions (river water temperature vs. discharge temperature and river flow) and the high exit velocity and depth of the discharge. Based on TVA's independent analysis, the review of additional information and the implementation of the special conditions (including the use of an outfall with a 45-degree elbow oriented upwards) stated in the following mitigation section, TVA has concluded that the construction and operation of the proposed sewage outfall would not affect any listed species, if present. On October 4, 2004, TVA sent USFWS a letter concluding no effect on T&E species, along with supporting information (see attachment 5). The response from USFWS indicated that it would concur with a finding of "not likely to adversely impact," if made, acknowledging that a "no effect" finding does not require concurrence under FWS' regulations implementing Section 7 of the ESA.

Future expansion of the treatment system due to development at Exit 126 was also an issue of concern for USFWS. Upon further review of the design rationale for the force mains, TVA has determined that the 8-inch main is necessary to accommodate peak flow and to pump over longer distances without intermediate pumping facilities. The mere fact that an 8-inch pipe may accommodate future expansion does not make such expansion reasonably foreseeable. Rather, such foreseeability should be determined from an examination of factors such as the existing infrastructure for the area, the existing development, the industrial space currently available for development in the surrounding area, and the growth trends in this part of west Tennessee. Based on development at other interchanges with sewer services, the wastewater treatment plant was designed to accommodate 2.5 times the existing flows at the interstate exit. Increases in these flows are expected to come primarily from commercial establishments. In order to get a perspective of the type and amount of development that could occur before approaching the design capacity, to include the doubling of the inflow from the TDOT rest areas, TVA used existing flows from the facilities plan and estimated that two hotels (size of Days Inn Motel), two additional truck stops, three more gas stations, four 75-seat restaurants, and four 8-employee office buildings could be built. The majority of larger industries require rail service, which is not available to the site area (16 miles north at Camden) and current water and sewer service capabilities, to include the proposed treatment plant, are well below those required by large industries. The City of Parsons has 10 acres available for development in the Parsons Industrial Park. Additionally, the City of Parsons completed a new airport, leaving the old airport, 75 acres, available for industrial development. The City of Parsons provides both sites

with sewer and water service. Decaturville Water Works provides water and sewer service for the Decaturville Industrial Park which has 20 acres available for development. Additionally, two buildings with approximately 70,000 square feet total are vacant in Parsons and Decaturville has a 40,000 square feet vacant building. The Benton County Industrial Park, 14 miles north, has 295 of 362 acres available for use and is supported by a 3.0 MGD water system with 750,000 gallon on-site elevated tank and a 5.0 MGD sewer system. So there is already much heavier duty industrial site competition nearby to expect such industrial development at the site area, even with the nearness of I-40. Based on a consideration of these factors, TVA does not consider expansion of the proposed treatment system to be a reasonably foreseeable action that should be included in the current environmental review. However, TVA will limit the Section 26a approval to a flow of 100,000 gallons per day. Any request for future expansion would be subject to appropriate NEPA and ESA reviews. Further, to alleviate other concerns for potential impacts from high chlorine concentrations, the Section 26a approval will require the use of ultraviolet radiation for disinfection.

During meetings with state and federal agencies, TWRA expressed concerns about impacts to the sauger fishery in this portion of the river. The sauger population in this section of the river is quite good and has historically been one of the best in the country. About six miles downstream of the proposed outfall is the mouth of the Duck River, a location for a population of large sauger. There is quite a bit of movement of sauger from the Duck river area up to Pickwick Dam, especially during spawning season (usually late February through March). TWRA requested yearly whole effluent toxicity (WET) testing, during late March or April, when the sauger larvae would be drifting with the current in the water column where they could be exposed to the effluent. TWRA felt the results of the WET testing would help determine whether the effluent was affecting the quality of sauger fishing in this reach of the river. TWRA proposed that TVA require the applicant to include WET testing in the Section 26a approval. USFWS supported this suggestion to consider including chronic toxicity testing requirement if chlorine was used for disinfection.

Whole Effluent Toxicity (WET) is a term used to describe the aggregate toxic effect of an aqueous sample (e.g., whole effluent wastewater discharge) as measured by an organism's response upon exposure to the sample (e.g., lethality, impaired growth or reproduction). WET tests replicate, to the greatest extent possible, the total effect and actual environmental exposure of aquatic life to toxic pollutants in an effluent without requiring the identification of the specific pollutants. If WET test limits were developed for this outfall, only acute tests (48-hour) would be required due to the effluent flow (0.1 MGD) vs. stream flow (1Q10 of 3,878 MGD), with a permit limit of 0.009 percent effluent that could contain up to 0.63 mg/L ammonia (assuming a maximum concentration of 70 mg/L). WET test failure using fathead minnows and daphnids would be very unlikely at such low permit limit concentrations. Acute tests would be the appropriate endpoint for evaluation of effects to sauger because of the very substantial immediate dilution, the brief exposure duration resulting from the the intermittent nature of the discharge (average of 13 minutes per hour), and the movement of any sauger within the area (i.e. either swimming adults or drifting planktonic larvae and/or juveniles). Based on these considerations, there would be no impacts to the sauger population as a result of this outfall, and therefore, TVA does not see a technical reason to require the applicant to conduct WET testing in order to verify its conclusions of insignificant effect on sauger or aquatic resources. Additionally, the modeling results indicate that neither acute nor chronic toxicity due to ammonia would be expected. The effluent modeling

demonstrated that with a 45 degree elbow oriented upward on the end of the effluent pipe, the maximum ammonia concentration of 70 mg/l would be initially diluted to 14 mg/l in the water column, under any flow conditions. Additionally, modeling showed under a flow 2,000 and 6,000 cfs, that within 10 to 13 feet of the outlet, the ammonia concentration would be 4.36 mg/L. This dispersion would also apply to the whole effluent with concentrations depending on initial concentration. Based on exposure durations as defined in the EPA water quality criteria for ammonia document, these ammonia concentrations would be below current EPA water quality criteria for ammonia (both acute and chronic), even under the infrequent and short-lived low flow (0-2,000 cfs) conditions at the site. Finally, the applicant would be required, under TVA's Section 26a permit, to use UV light for disinfection instead of chlorine. This further mitigates any concern for impacts to sauger.

Mitigation

To minimize the potential for future impacts as a result of this outfall, TVA will condition its Section 26a under the TVA Act with the following special conditions:

1. The BDCSSD will submit to TVA, as built drawings, showing that the following two design changes were implemented:

    - BDCSSD will design and operate the proposed wastewater treatment plant such that ultraviolet radiation is used for disinfection.

    - BDCSSD will design the proposed wastewater treatment plant outfall with an 8-inch open pipe elbow oriented upward at an angle of 45-degrees.

2. The average daily discharge from the wastewater collection and treatment system is limited to 100,000 gallons per day. Any increase in flow, as well as connection of any industrial wastewater other than domestic sewage to the system, would be subject to prior TVA approval. In accordance with applicable Tennessee regulations, BDCSSD shall apply for and obtain a formal modification of NPDES Permit TN0078042 from the TDEC DWPC for these changes.

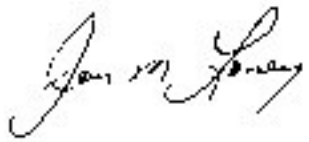
TVA has determined that with the implementation of these commitments, adherence to the commitments resulting from the review by TDEC, and use the Best Management Practices required by Standard Conditions (5a-e and 6a-i) of TVA's Section 26a permit would result in insignificant impacts associated with the proposed project.

Conclusion and Findings

Based on independent review, TVA has concluded that the TDEC-prepared EA is adequate; the impacts on the environment and agency comments have been adequately addressed; and necessary mitigation has been identified. TVA has decided to adopt the TDEC EA. It is attached and incorporated by reference. For compliance with Executive Order 11988, the outfall is considered to be a repetitive action in the floodplain for which there is no practicable alternative. For compliance with Section 106 of the National Historic Preservation Act, the SHPO concurs with TVA's finding that the proposed project would not affect historic properties. TVA has also determined after coordination with USFWS that the proposed construction and operation for the wastewater collection and treatment system would not affect endangered and threatened species. For compliance with Executive Order 11990, TVA has determined that there is no practicable alternative to construction in wetlands. Other routes to avoid these areas

would increase other environmental impacts, such as requiring additional tree clearing or impact other wetland areas. To minimize impacts, a majority of the sewer lines and effluent force main follow existing ROW. Less than 0.1 of an acre of isolated wetland would be affected as a result of proper project design and the implementation of good construction practices.

Based on the TDEC EA and our supplemental analysis, we conclude that the Section 26a approval for the outfall and the permanent easement for the TVA land 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 TVA General and Standard Conditions 5a through 5e and 6a through 6i, the two special conditions identified in the mitigation section of this document, and the mitigation measures previously identified in the TDEC EA, which will be included in the TDEC-DCA loan agreement to BDCSSD.



November 9, 2004

Jon M. Loney, Manager
NEPA Administration
Environmental Policy and Planning
Tennessee Valley Authority

Date Signed

Attachments

1. March 22, 2004, EA and FONSI Prepared by the Tennessee Department of Environment and Conservation, Division of Community Assistance.

2. May 25, 2004, EA Amendment and FONSI Amendment Prepared by the Tennessee Department of Environment and Conservation, Division of Community Assistance.

3. TMDL for Eagle Creek - Approved on May 6, 2004.

4. December 10, 2003, Tennessee Historical Commission Concurrence Letter.

5. October 4, 2004, TVA letter to USFWS, including supporting information [also includes TVA's June 1, 2004 letter and FWS's July 16, 2004, response].