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FINAL ENVIRONMENTAL ASSESSMENT

TENNESSEE VALLEY AUTHORITY CHATTANOOGA OFFICE SPACE ALTERNATIVES

Hamilton County, Tennessee

TENNESSEE VALLEY AUTHORITY

APRIL 2007

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TABLE OF CONTENTS

- 1.0 PURPOSE OF AND NEED FOR ACTION 1**
 - 1.1. The Decision 1
 - 1.2. Other Pertinent Environmental Reviews or Documentation..... 1
 - 1.3. Public Involvement and Scoping 4
 - 1.4. Permits, Licenses, or Consultations 6
- 2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION 7**
 - 2.1. Alternatives..... 7
 - 2.1.1. Alternative 1 - The No Action Alternative 7
 - 2.1.2. Alternative 2 - Lease Appropriate Existing Office Space 7
 - 2.1.3. Alternative 3 - Construct New Office Space on TVA Property at Chickamauga Dam
Reservation 7
 - 2.1.4. Alternative 4 - Construct New Office Space on Non-TVA Property 9
 - 2.2. Comparison of Alternatives 9
 - 2.3. The Preferred Alternative 14
 - 2.4. Summary of TVA Commitments and Proposed Mitigation Measures..... 14
- 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES 17**
 - 3.1. Socioeconomics 17
 - 3.1.1. Affected Environment 17
 - 3.1.2. Socioeconomic Impacts..... 18
 - 3.2. Transportation 19
 - 3.2.1. Affected Environment, Transportation - Alternatives 1, 2 and 4 19
 - 3.2.2. Affected Environment, Transportation - Alternative 3 20
 - 3.2.3. Transportation Impacts - Alternatives 1 and 2 20
 - 3.2.4. Transportation Impacts- Alternatives 3 and 4 21
 - 3.3. Cultural Resources 23
 - 3.4. Natural Heritage Resources 25
 - 3.4.1. Vegetation 25
 - 3.4.2. Wildlife 26
 - 3.4.3. Aquatic Ecology 27
 - 3.4.4. Threatened and Endangered Species..... 27
 - 3.4.5. Natural Areas..... 29
 - 3.4.6. Wetlands..... 29
 - 3.5. Water Resources..... 29
 - 3.6. Visual Resources 31
 - 3.6.1. Alternatives 1 and 2..... 31
 - 3.6.2. Alternative 3..... 32
 - 3.6.3. Alternative 4..... 34
 - 3.7. Outdoor Recreation Resources..... 35
 - 3.7.1. Alternatives 1, 2, and 4..... 35
 - 3.7.2. Alternative 3..... 35

4.0	LIST OF PREPARERS	37
4.1.	NEPA Project Management	37
4.2.	Other Contributors.....	38
5.0	LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS IDENTIFIED AS STAKEHOLDERS	41
6.0	LITERATURE CITED.....	45

LIST OF APPENDICES

Appendix A – Description of Office Space Needed by TVA for Full Occupancy by January 2011 in Chattanooga, Tennessee	49
Appendix B – News Releases.....	53
Appendix C – Correspondence.....	59
Appendix D – Summary and Analysis of Comments on Draft EA and TVA Responses	65
Appendix E – Natural Heritage	73

LIST OF TABLES

Table 1-1. Environmental Reviews Related to TVA Chattanooga Office Space Alternatives	4
Table 1-2. Brief Summary of Possible Permits, Licenses, or Consultations for Compliance With Applicable Environmental Laws and Regulations.....	6
Table 3-1. Traffic Data Used to Evaluate Alternative 3.....	22
Table 3-2. Level of Service Analyses.....	22
Table E-1. Endangered, Threatened, and Other Plant Species of Conservation Concern Known From the Hamilton County, Tennessee, Project Area	77
Table E-2. Federally Listed and State-Listed Aquatic Animals Known to Occur in Hamilton County, Tennessee.....	78
Table E-3. Endangered, Threatened, and Other Species of Conservation Concern Known From the Hamilton County, Tennessee, Project Area	79

LIST OF FIGURES

Figure 1-1. Map of Downtown Chattanooga Showing Existing Chattanooga Office Complex (COC) Space 2

Figure 1-2. Conceptual Plan of Proposed TVA Office Complex at Chickamauga Dam Reservation 3

Figure 2-1. Map of Alternative 3 – Site on Chickamauga Dam Reservation 8

Figure 2-2. Location of Potential Alternative 4 the Former U.S. Pipe Site 10

Figure 2-3. Conceptual Design Layout of Potential Alternative 4 the Former U.S. Pipe Site 11

Figure 2-4. Alternative 4 - Existing Buildings Potentially Subject to Demolition With Selection of Former U.S. Pipe Site 12

Figure 2-5. Alternative 4 - Aerial View of Existing Buildings Subject to Demolition With Selection of Former U.S. Pipe Site 13

Figure 3-1. Approximate Boundaries of the Downtown Chattanooga Area (outlined in blue) With Locations of the Present Office Complex (Alt 1), the Alternative 3 Site (Alt 3), and a Potential Alternative 4 Site (Alt 4) 18

Figure 3-2. 2004 Average Annual Daily Traffic per Hamilton County GIS Data 21

ACRONYMS AND ABBREVIATIONS

AADT	Average Annual Daily Traffic
A.D.	Abbreviation for the Latin term, <i>anno Domini</i> , meaning “in the year of our Lord”
Alt	Alternative
APA	American Planning Association
APE	Area of Potential Effect
ARAP	Aquatic Resource Alteration Permit
B.C.	Before Christ
BMP	Best Management Practice
CFR	Code of Federal Regulations
CHCRPA	Chattanooga Hamilton County Regional Planning Agency
COC	Chattanooga Office Complex
EA	Environmental Assessment
e.g.	Abbreviation for the Latin term, <i>exempli gratia</i> , meaning “for example”
<i>E. coli</i>	<i>Escherichia coli</i>
EIS	Environmental Impact Statement
et al.	Abbreviation for the Latin term, <i>et alii</i> (masculine), <i>et aliae</i> (feminine), or <i>et alia</i> (neutral), meaning “and others”
etc.	Abbreviation for the Latin term, <i>et cetera</i> , meaning “and other things” or “so forth”
et seq.	Abbreviation for the Latin term <i>et sequential</i> meaning “and the following one”
FONSI	Finding of No Significant Impact
GIS	Geographic Information System
GSA	General Services Administration
HPA	Habitat Protection Area
i.e.	Abbreviation for the Latin term, <i>id est</i> , meaning “that is”
Land Plan	<i>Chickamauga Reservoir Land Management Plan</i>
LOS	Level of Service
n.d.	No Date
NEPA	National Environmental Policy Act
NNL	National Natural Landmark
NRHP	National Register of Historic Places
NHPA	National Historic Preservation Act
PCB	Polychlorinated Biphenyl
RFI	Request for Information
RFP	Request for Proposal
ROD	Record of Decision
SHPO	State Historic Preservation Officer
SMZ	Streamside Management Zone
SR	State Route
SWA	Small Wild Area
TDEC	Tennessee Department of Environment and Conservation
TRM	Tennessee River Mile
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resources Agency
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VAAP	Volunteer Army Ammunition Plant

CHAPTER 1

1.0 PURPOSE OF AND NEED FOR ACTION

The Tennessee Valley Authority (TVA) is seeking to lease or purchase approximately 600,000 square feet of office space in the Chattanooga, Tennessee, area beginning in January 2011. Due to the impending expiration of leases on office space currently occupied by TVA in Chattanooga, as shown in Figure 1-1, securing cost-effective replacement office space is essential for continuing business operations. The needed office space must be either contiguous or a campus-type development with individual buildings in close proximity. A conceptual design comparable to the needed space appears in Figure 1-2. For a more detailed description of the needed office space, see Appendix A.

1.1. The Decision

TVA must decide whether to renew the lease on its currently occupied office space in Chattanooga. If it decides not to renew the lease, it must then decide how to acquire suitable replacement office space.

Alternatives identified for acquiring needed office space include renewing the lease on the currently occupied office space; leasing appropriate other existing office space in the Chattanooga area; contracting for the construction of new office space on TVA property on the Chickamauga Dam Reservation; and contracting for the construction of new office space on non-TVA property in the Chattanooga area. At this time, TVA is still considering all four alternatives and discussions with respondents to the Request for Proposals (RFP) are ongoing. The outcome of those discussions is expected to substantially affect TVA's final decision and the identification of TVA's preferred course of action.

In order to fulfill TVA's obligations under the National Environmental Policy Act (NEPA), this environmental assessment (EA) analyzes potential impacts of alternative ways of meeting TVA's Chattanooga office space requirements.

1.2. Other Pertinent Environmental Reviews or Documentation

Pertinent documentation or environmental reviews are listed in Table 1-1.

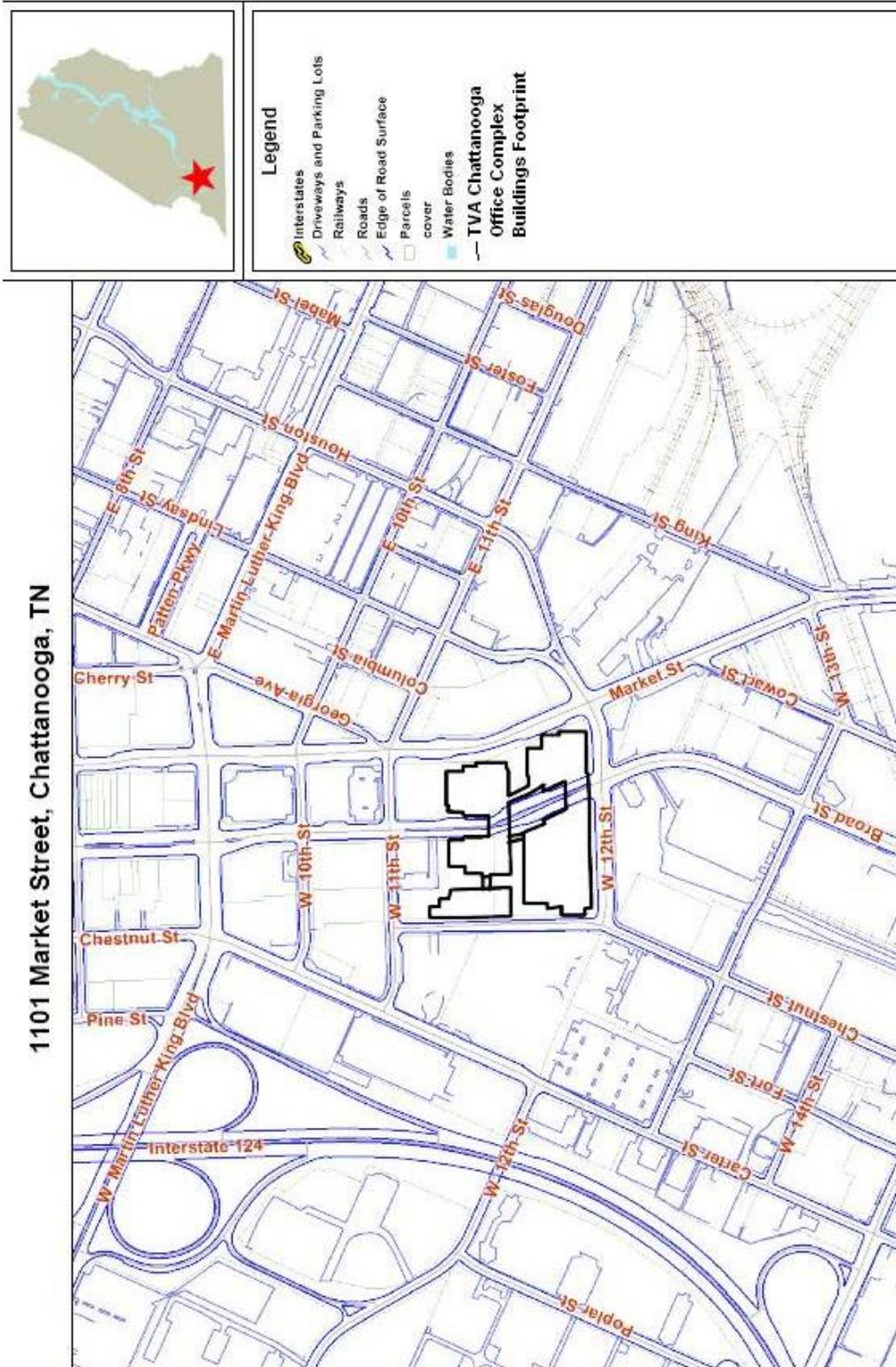


Figure 1-1. Map of Downtown Chattanooga Showing Existing Chattanooga Office Complex (COC) Space

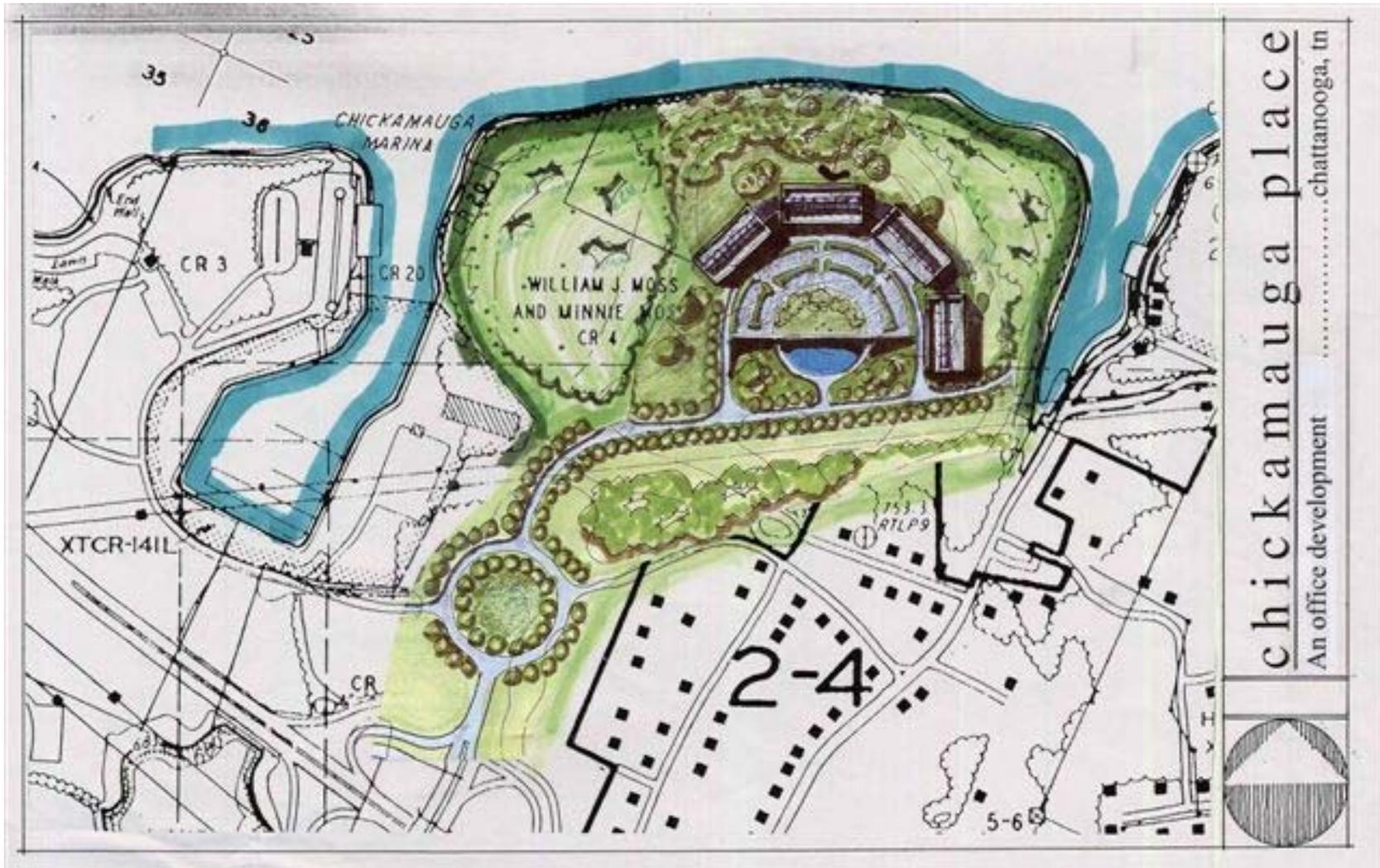


Figure 1-2. Conceptual Plan of Proposed TVA Office Complex at Chickamauga Dam Reservation

Table 1-1. Environmental Reviews Related to TVA Chattanooga Office Space Alternatives

Type of Review	Title	Result/Date	Summary/Relevance for this Review
EA	<i>Environmental Assessment Chattanooga Office Complex</i>	FONSI issued 8/16/1979 (TVA 1979)	Describes the rationale for consolidating TVA office space from 21 buildings into an energy-efficient and handicapped-accessible building
Land Management Plan	<i>Chickamauga Reservoir Land Management Plan</i>	TVA Board Approved on 10/22/1989, Revised 8/1990 (TVA 1989)	Establishes appropriate uses for TVA lands surrounding Chickamauga Reservoir including the site for Alternative 3
EIS	<i>Chickamauga Dam Navigation Lock Project</i>	Record of Decision (ROD) issued 5/13/1996 (TVA 1996)	Includes description of natural environment near the site for Alternative 3
EIS	<i>Proposed Disposal Volunteer Army Ammunition Plant Chattanooga, Tennessee Final Environmental Impact Statement</i>	ROD issued: 8/30/1999 (GSA 1999)	Includes detailed information about what is now the Enterprise South Industrial Park, an example of typically available non-TVA-owned building sites in Chattanooga
Supplemental EIS	<i>Chickamauga Lock Feasibility Report Supplement 1, Final Supplemental Environmental Impact Statement</i>	U.S. Army Corps of Engineers supplemental EIS issued on: 2/26/2002 (USACE 2002)	Includes description of natural environment near the site for Alternative 3

EA = Environmental Assessment
EIS = Environmental Impact Statement
FONSI = Finding of No Significant Impact
ROD = Record of Decision
USACE = U.S. Army Corps of Engineers

1.3. Public Involvement and Scoping

TVA began involving the public in this proposal in August 2006, when it issued a Request for Information (RFI), as described below, and press releases. TVA also directly informed area public officials, the owners of the existing TVA Chattanooga Office Complex (COC) building, sublessees, and others of its considerations. TVA subsequently issued status updates in October 2006, January 2007, and March 2007. TVA's proposal has been the subject of numerous articles and reports in Chattanooga area print and electronic media from August 2006 through the present. Samples of these articles from various media outlets are listed in Appendix B.

TVA issued an RFI in August 2006, to evaluate potential options for securing office space to replace the space for which the lease will expire January 1, 2011. The responses to the RFI were used both to determine qualified bidders to receive the RFP issued in October 2006 and to identify the alternatives to be analyzed in the EA. In the RFP, TVA offered potential respondents the alternatives of providing existing office space (Alternatives 1 and 2, see Sections 2.1.1 and 2.1.2), building on the TVA property at the Chickamauga Dam Reservation, or building elsewhere in the Chattanooga area.

The undeveloped TVA property at the Chickamauga Dam Reservation was selected for evaluation as Alternative 3 (described in Section 2.1.3) because of its adequate size, convenient location, and proximity to existing water and sewer utilities, all factors that would reduce development costs. The fourth alternative is a build-to-suit option, and TVA would contract for the construction of appropriate office space on non-TVA-owned property. Proposals could include greenfield sites, which would have similar impacts to those analyzed under Alternative 3, or brownfield sites. One such proposal received would use the former U.S. Pipe and Foundry's Chattanooga plant (the former U.S. Pipe site). For the purposes of this EA, TVA has evaluated the site in order to analyze potential impacts associated with redeveloping a brownfield site and compare them with other alternatives. Since other non-TVA-owned sites could be considered as cost-effective alternatives, this EA compares the potential environmental impacts of construction at the Chickamauga Dam Reservation (a greenfield site) and the potential environmental impacts of redeveloping the former U.S. Pipe site to define the range of potential environmental impacts. Other sites not specifically identified in this EA that may prove economically desirable may be chosen. TVA would then determine if the environmental impacts associated with developing an alternative site were similar to those described herein and, if not, supplement this EA as necessary.

The following issues were identified as needing evaluation for all of the alternatives: socioeconomic, transportation, cultural resources, natural heritage resources (including terrestrial and aquatic ecology, threatened and endangered species, natural areas, and wetlands), water resources, visual resources, and recreation. Air quality effects from the identified alternatives are not expected to be materially different from current effects associated with TVA's occupancy and use of its COC now. The primary air quality effect now is from employee motor vehicle use, and this use would simply be shifted to another location in the Chattanooga area.

TVA issued a draft of this EA for public and interagency review on March 6, 2007. Comments were requested by March 26, 2007. The press release announcing the availability of the draft EA appears in Appendix B. TVA personnel met with public officials and members of the Chattanooga Area Chamber of Commerce to discuss the alternatives. Correspondence received from agencies, local governments, and tribes appear in Appendix C. TVA received limited public response to the draft EA. Comments and TVA's responses to them are summarized in Appendix D.

1.4. Permits, Licenses, or Consultations

Depending on the alternative chosen, various permits and approvals would have to be obtained. These could include storm water construction permits, Section 404 permits if wetlands are disturbed, and Section 106 consultation on potential impacts on historic and cultural resources. Depending on the financial arrangements, TVA, its contractors, or the lessor may have to obtain a number of different permits and approvals (see Table 1-2).

Table 1-2. Brief Summary of Possible Permits, Licenses, or Consultations for Compliance With Applicable Environmental Laws and Regulations

Alternative(s)	Situation Requiring Permit or Consultation	Type of Permit or Consultation	Agency or Office to be Consulted	Minimum Time Required
Alt. 2	Need to remodel existing building	Building Permit	City of Chattanooga	
Alt 3 or 4	Construction of new building	Building Permit	City of Chattanooga	
Alt. 2	Need to remodel a structure near property eligible for the National Register of Historic Places (NRHP)	Section 106 Consultation	Tennessee State Historic Preservation Officer (SHPO)	60 days
Alt. 2	Need to remodel structure eligible for NRHP	Section 106 Consultation	Tennessee SHPO	60 days
Alt. 3	Change of plans for Chickamauga Dam Reservation site to disturb property not included in initial Phase 1 Survey	Section 106 Consultation	Tennessee SHPO	90 to 100 days
Alt. 4	Need to build near property eligible for NRHP	Section 106 Consultation	Tennessee SHPO	60 days
Alt. 4	Need to build on property needing Phase 1 Archaeological Evaluation	Section 106 Consultation	Tennessee SHPO	90 to 100 days
Alt. 3 and 4	Selection of any of these alternatives	Storm Water Construction Permit	Tennessee Department of Environment and Conservation (TDEC) and City of Chattanooga	
Alt. 4	Presence of wetlands or streams subject to disturbance or alteration	Aquatic Resource Alteration Permit	TDEC	
Alt. 4	Presence of jurisdictional wetlands subject to disturbance or alteration	Section 404 Permit	USACE	
Alt. 1 and 2	Building may need upgrades to meet 10 CFR Part 434/435 and to exemplify sustainable design practices and energy efficiency per Executive Order 13423 and Energy Policy Act of 1992 and 2005	Building Permit	City of Chattanooga	

CHAPTER 2

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1. Alternatives

TVA has identified four alternatives for fulfilling TVA's need for office space in Chattanooga.

2.1.1. *Alternative 1 - The No Action Alternative*

Under the No Action Alternative, TVA would continue to lease space in the COC and would not relocate. Because of reductions in staff levels since the COC was first occupied, TVA would likely lease less space than at present. This alternative could involve some minor remodeling to better adapt the COC buildings to TVA's space requirements and to meet energy efficiency and other requirements.

2.1.2. *Alternative 2 - Lease Appropriate Existing Office Space*

Under Alternative 2, TVA would lease appropriate existing office space in Chattanooga. Due to the ongoing construction of a new office complex for BlueCross BlueShield of Tennessee (BlueCross BlueShield), many buildings currently owned or rented by that corporation may become available for occupancy. This alternative could also involve remodeling of the buildings to meet TVA's space requirements as well as energy efficiency and other requirements.

2.1.3. *Alternative 3 - Construct New Office Space on TVA Property at Chickamauga Dam Reservation*

Under Alternative 3, TVA would contract for the construction of new office space on TVA property at the Chickamauga Dam Reservation. TVA considered other TVA-owned land in the vicinity of Chickamauga Dam. These other lands lacked the suitability of the selected site and would have similar or worse environmental impacts compared to the selected site. Alternative 3 would entail construction activities on an approximately 30-acre footprint shown in Figure 2-1. Construction of this facility would require clearing, excavation, and cut-and-fill activities to construct access roads, building foundations, and parking areas. Water supply lines and sewer lines of sufficient capacity to support the proposed new office complex and the surrounding subdivisions are available near the site along Kings Point Road. This site could be utilized without modifying or rerouting the existing transmission lines that cross the site.



Figure 2-1. Map of Alternative 3 – Site on Chickamauga Dam Reservation

2.1.4. Alternative 4 - Construct New Office Space on Non-TVA Property

Under Alternative 4, new office space would be constructed on non-TVA property in the Chattanooga area on either a greenfield, brownfield, or redeveloped site. Because Alternative 3 is representative of a greenfield site, Alternative 4 incorporates a potential and representative brownfield site, the former U.S. Pipe site in downtown Chattanooga. The location of this site is shown in Figure 2-2. A conceptual site design layout is shown in Figure 2-3. The conceptual design utilizes ground level parking for the first 7 years with parking structures anticipated by the end of 20 years. This brownfield site was used for heavy industry for many years. Due to the years of industrial use, heavy metals contamination exists in the soils of the site, and some metals contamination in excess of background concentrations has been found in two out of four monitoring wells on the site. The site owners successfully remediated the nearby former Wheland Foundry site and are presently engaged in remediation activities at the former U.S. Pipe site. The TVA office buildings on this site would occupy about 7 acres and range from 3 stories to 10 stories in height. Parking would initially occupy about 25 acres. Development of the office complex would require demolishing several existing buildings as shown in Figures 2-4 and 2-5. Redevelopment of this site seems likely with or without TVA's involvement.

2.2. Comparison of Alternatives

Under Alternative 1, business would continue as usual in the TVA occupied office space. No new environmental impacts would be expected to result from Alternative 1 or 2 except for possible remodeling activities to upgrade the building to meet sustainable design and energy-efficiency building objectives.

If it were necessary to remodel existing office space for TVA use under Alternative 1 or 2, some minor temporary impacts on local traffic circulation patterns may occur if it became necessary to obstruct one or more streets temporarily during the remodeling. In addition, remodeling would produce solid waste that could result in minor impacts to local waste disposal facilities. Remodeling of a building containing asbestos insulation or other hazardous materials could result in minor increases in hazards from these materials, but contractor compliance with existing regulations for disturbance of asbestos or other hazardous building materials should ensure any impacts from the remodeling would be temporary and insignificant. Under Alternative 2, remodeling activities could affect one or more buildings eligible for inclusion or listed on the NRHP, so consultation with the Tennessee State Historic Preservation Officer (SHPO) would be necessary. However, Chattanooga zoning restrictions and planning guidelines would most likely prohibit any remodeling by a prospective lessor or developer that would adversely affect properties eligible for inclusion on the NRHP, so the likelihood of an adverse impact on historic properties is low. Relocation of TVA employees from buildings currently occupied to different existing office buildings outside of the downtown Chattanooga area could impact local transportation, specifically vehicular traffic, but this is unlikely to materially affect existing traffic-flow patterns.

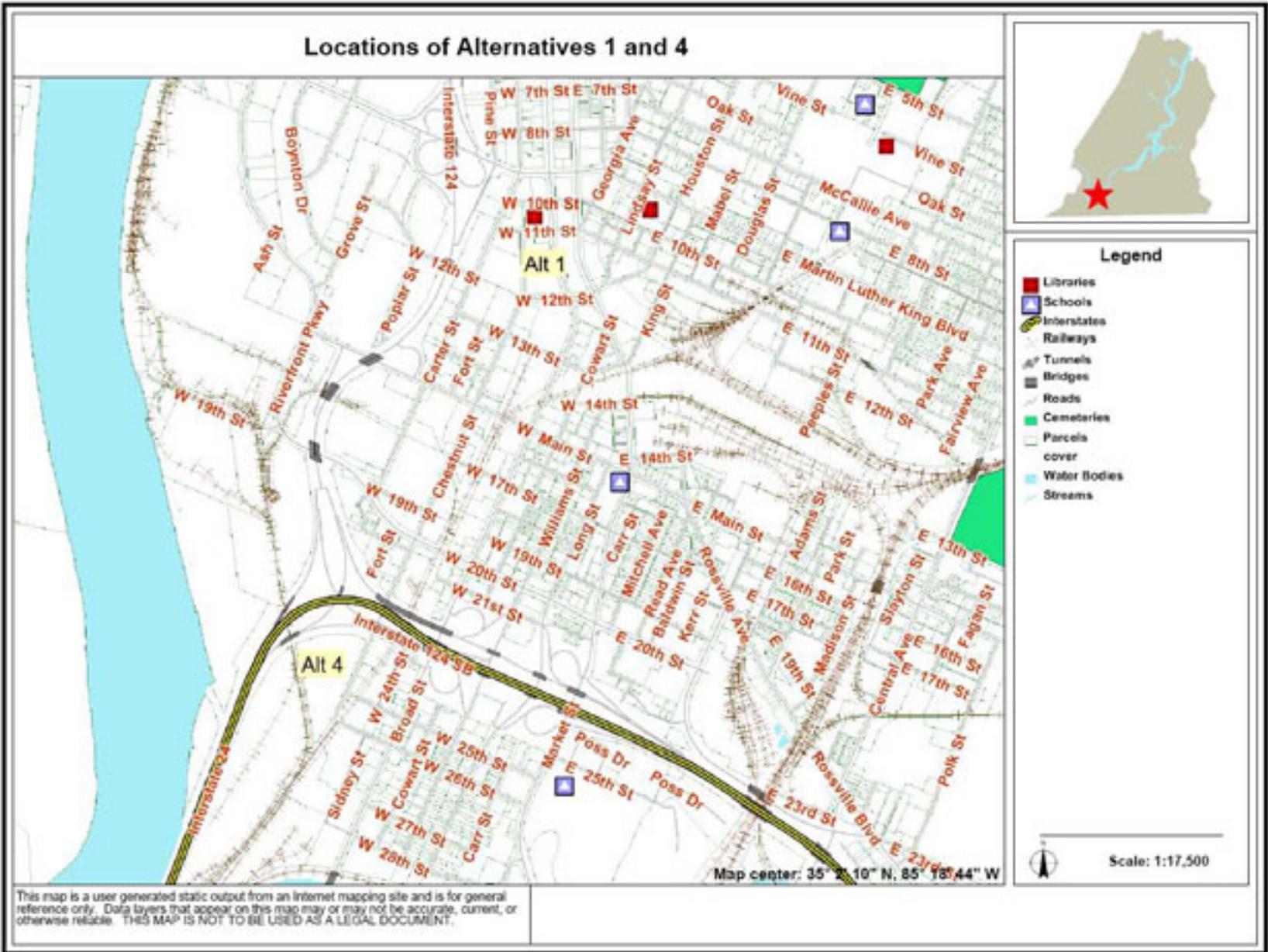


Figure 2-2. Location of Potential Alternative 4 the Former U.S. Pipe Site



Figure 2-3. Conceptual Design Layout of Potential Alternative 4 the Former U.S. Pipe Site



Figure 2-4. Alternative 4 - Existing Buildings Potentially Subject to Demolition With Selection of Former U.S. Pipe Site



Figure 2-5. Alternative 4 - Aerial View of Existing Buildings Subject to Demolition With Selection of Former U.S. Pipe Site

Alternative 3 would involve construction on a greenfield site, which has been relatively undisturbed for more than 50 years. With appropriate permits and mitigation measures, including preservation of the existing trees in the proposed visual buffer, minor effects would be anticipated on biological communities, sensitive resources such as listed species and wetlands, and cultural resources. Likewise, the proposed visual buffer minimizes potential visual impacts on Chickamauga Reservoir and Chickamauga Dam, which is an NRHP-eligible property. Impacts on local transportation, sewer network, and water supply systems would also be insignificant.

Alternative 4, construction of new office space on non-TVA property in the city of Chattanooga, could entail construction on sites ranging from a greenfield site comparable to the Chickamauga Dam Reservation or a brownfield site that has already been subject to numerous disturbances in the past. The environmental impacts of construction on a greenfield site could be comparable to those for Alternative 3. The environmental impacts for construction on a site with a history of much disturbance would most likely be negligible for biological communities and sensitive resources such as listed species and wetlands.

One example of a site that has been subject to much previous disturbance is the Enterprise South Industrial Park, which was formerly the Volunteer Army Ammunition Plant (VAAP), a facility devoted to the manufacture of munitions. The EIS prepared by the General Services Administration (GSA) in 1999 for the conversion of the VAAP to an industrial park, describes the potential environmental impacts of building construction in the Enterprise South Industrial Park and is hereby incorporated by reference.

Another example of a site for redevelopment is the former U.S. Pipe site. Construction of an office space on the former U.S. Pipe site would initially involve demolition of several buildings, driving of foundation pylons, and construction of an office complex that has been conceptually designed similar to that in Figure 2-3.

Observance of construction storm water best management practices (BMPs), other applicable environmental laws, and mitigation measures similar to those devised for Alternative 3 above or those specific to reuse of the VAAP would make the environmental impacts of construction at numerous sites in Chattanooga insignificant. Should the former U.S. Pipe site be chosen, additional cultural resource investigations would be necessary to comply with Section 106 of the National Historic Preservation Act (NHPA). The results of this investigation and consultation with the Tennessee SHPO would determine appropriate mitigation measures to protect cultural resources. Should another build-to-suit site be identified, additional site-specific environmental review would be conducted at that time to ensure consistency with applicable environmental laws and this EA.

2.3. The Preferred Alternative

At this time, TVA is still considering all four alternatives, and discussions with respondents to the RFP are ongoing. The outcome of those discussions is expected to substantially affect TVA's final decision and the identification of TVA's preferred course of action.

2.4. Summary of TVA Commitments and Proposed Mitigation Measures

Alternative 1: No additional commitments beyond fulfilling applicable mandates for energy efficiency, accessibility, safety, and security.

Alternative 2: Consultation with the Tennessee SHPO office before remodeling a building eligible for inclusion or listed on the NRHP and before remodeling a building in the vicinity of a building eligible for inclusion or listed on the NRHP. Disposal or recycling of remodeling debris (if any) in appropriate manner in accordance with TVA policy and all applicable requirements.

Alternative 3:

- **Visual Buffer/Vegetation** - Maintain existing vegetation on the steep slopes on the north side of the tract from the shoreline to the prominent peaks of the tract as shown in Figure 2-1.
- **Lighting** - During construction all lights used (pole-mounted, equipment-mounted, or structure-mounted floodlights) would be fully shielded or would have internal low-glare optics, such that light would not be emitted from the fixture at angles above the horizontal plane. For construction, this could require temporarily retrofitting floodlights, and other fixtures with external visors and side shields. Shielded low pressure sodium lighting would be used during the construction and operational phases. Area lighting and parking lot light poles would be no taller than 40 feet, unless they were lighting objects taller than 40 feet. In such cases, pole heights would be minimized.
- **Structures** - All color schemes for building exteriors would be visually compatible with natural background colors and provide dark roofs on all structures.
- **Construction Storm Water BMPs** - Construction storm water BMPs would be required to reduce potential sediment loadings to Chickamauga Reservoir.
- **Compliance With Applicable Environmental Regulations and Permits:** TVA would require its contractors or a lessor in a build-to-suit arrangement to comply with all applicable environmental regulations and permitting/approval requirements to lessen the risk of significant environmental impacts

Alternative 4:

- **Lighting** - During construction all lights used (pole-mounted, equipment-mounted, or structure-mounted floodlights) would be fully shielded or would have internal low-glare optics, such that light would not be emitted from the fixture at angles above the horizontal plane. For construction, this could require temporarily retrofitting headlights, floodlights, and other fixtures with external visors and side shields. Shielded low pressure sodium lighting would be used during the construction and operational phases. Area lighting and parking lot light poles would be no taller than 40 feet, unless they were lighting objects taller than 40 feet. In such cases, pole heights would be minimized.
- **Construction Storm Water BMPs** - Construction storm water BMPs would be required to reduce potential sediment loadings to nearby streams.
- **Compliance With Applicable Environmental Regulations and Permits:** TVA would require its contractors or a lessor in a build-to-suit arrangement to comply with all applicable environmental regulations and permitting/approval requirements to lessen the risk of significant environmental impacts.

- **If a Presently Unidentified Site Were Selected:** Additional site-specific environmental review would be conducted at that time to ensure consistency with this EA.
- **If Former U.S. Pipe Site Were Selected:** TVA would review its impacts on historic and prehistoric cultural resources as required by Section 106 of the NHPA and appropriately mitigate any such impacts in consultation with the Tennessee SHPO. Additional cultural resources investigations for the former U.S. Pipe site would likely include examination of geotechnical information on the soil strata in the area of potential effect (APE) including, but not limited to, soil cores, well monitoring cores, and limited backhoe trenching to determine if any archaeological resources are present in the alluvial soils beneath the existing site.

CHAPTER 3

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1. Socioeconomics

3.1.1. *Affected Environment*

The existing TVA COC is located in downtown Chattanooga in the southern part of the central business district. Estimates produced for the RiverCity Company show employment in downtown Chattanooga of somewhat more than 46,000 in 2002, a substantial increase over the approximately 34,000 downtown employees in 1992 (Community Research Council 2003). (RiverCity Company is a privately funded public/private partnership created in 1986 with the mission of implementing the Tennessee Riverpark Master Plan, Chattanooga's 20-year, 25-mile long blueprint for riverfront and downtown development.) TVA employment at the COC is about 2,100, approximately 4 percent of total downtown employment. The RiverCity definition of downtown, however, includes a fairly large area as shown in Figure 3-1. The area noticeably affected by the presence of TVA employees is considerably smaller, primarily confined to a few blocks around the TVA location along both sides of Broad Street between Market and Chestnut Streets on the east and west sides and 11th and 12th Streets on the north and south.

Chattanooga, like many other cities, is now undergoing significant residential development in its downtown area. Over 1,100 new condominiums and apartments have been completed, are under construction, or have been announced for downtown Chattanooga (RiverCity 2007). Attractions such as the Tennessee Aquarium and IMAX Theatre, the Southern Belle Riverboat, and various museums are attracting many visitors, both local and nonlocal, to the downtown area. TVA has vacated two buildings in the north end of downtown in recent years, the Chestnut Street Tower and the Haney Building. The Chestnut Street Tower is now largely occupied, while the Haney Building was torn down and converted to a parking lot. The southern part of downtown, near the current TVA COC, has also experienced new developments in recent years, including construction of a new convention center, a school, and Finley Stadium.

BlueCross BlueShield of Tennessee is planning to relocate its corporate headquarters from its current location in the northern part of downtown to a nearby location on Cameron Hill, near the edge of downtown between U.S. Highway 27 and the Tennessee River. This move, expected to begin in late 2008, could somewhat isolate these workers from the downtown area. However, BlueCross BlueShield is exploring ways to keep employees tied to downtown and to make the site walkable and viewable, and serving as a destination for people. In addition to the employees now working downtown, BlueCross BlueShield plans to move about 1,100 employees now working at its Eastgate Mall office to the new site (BlueCross BlueShield 2006).

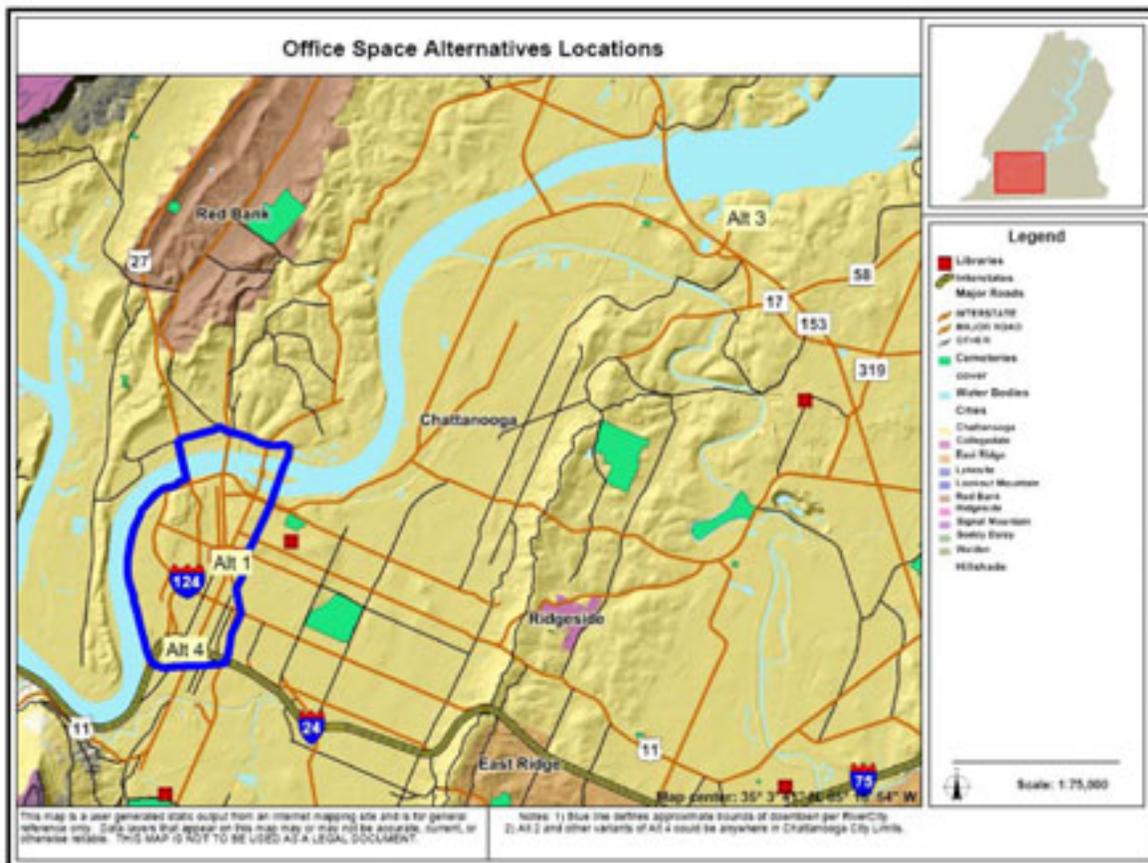


Figure 3-1. Approximate Boundaries of the Downtown Chattanooga Area (outlined in blue) With Locations of the Present Office Complex (Alt 1), the Alternative 3 Site (Alt 3), and a Potential Alternative 4 Site (Alt 4)

3.1.2. Socioeconomic Impacts

Under the No Action Alternative (Alternative 1), TVA would not relocate its downtown Chattanooga offices and, therefore, there would be no socioeconomic impacts.

Under Alternative 2, TVA would lease appropriate existing office space in the city of Chattanooga. This would result in minor socioeconomic impacts. Any remodeling that might occur could provide a small temporary increase in income and employment in the city. Some temporary, minor inconvenience during construction might occur to street traffic and to pedestrians due to temporary street or sidewalk obstructions. Relocation of the employees could also impact traffic patterns. If the relocation is to a site several blocks from the current site, while there would be little impact citywide, some specific businesses, particularly restaurants, might be affected as they lose or gain customers depending on their proximity to the old and new locations. Overall, these impacts would be minor; however, in some cases, especially for restaurants, the loss or gain in lunchtime business could be important. Eventually, however, the losses to businesses near the existing site probably would be replaced by new customers if and when other businesses occupied the existing COC space, as new or existing office space in the general area is occupied, and as downtown attractions draw more people. Continued growth in residential development downtown could also alleviate some of the potential impacts.

Under Alternative 3, new office space would be constructed on TVA-owned property at a site near Chickamauga Dam. Construction of the new office space would result in a small, temporary increase in employment and income associated with construction in the Chattanooga area. The new site would be within the city limits of Chattanooga, northeast of downtown Chattanooga, but is not readily convenient to downtown Chattanooga. This could result in some shift of retail purchases, primarily at restaurants, away from downtown. As with Alternative 2, these purchases likely would occur elsewhere within the city of Chattanooga, so there would be little impact citywide. However, some businesses near the current office location, especially restaurants, could have noticeable sales losses, especially until new tenants occupy the existing TVA facilities or other developments in the nearby area offset the losses. Continued growth in visitation to downtown attractions and continued residential development downtown could also help alleviate some of the potential impacts.

Under Alternative 4, new office space would be constructed on non-TVA property. As in Alternative 3, construction would result in a small, temporary increase in employment and income, followed by a much larger local increase due to the relocation of TVA employees. Impacts from relocation of the employees would be similar to Alternative 2 or 3. Construction is expected to take approximately 18-24 months.

If a TVA relocation should occur about the same time as the planned BlueCross BlueShield relocation, the combined impacts would be more noticeable. However, the two office complexes are far enough apart that much of the impact would be to different groups of businesses, and the TVA relocation would occur at least two years later, ameliorating any cumulative socioeconomic effects. The BlueCross BlueShield relocation of about 1,100 employees from its Eastgate Mall office to the new location would also help to alleviate impacts to the downtown area as BlueCross BlueShield is exploring ways to keep the employees tied to the downtown area (BlueCross BlueShield 2006).

The former U.S. Pipe site is within the city limits of Chattanooga, but just south of what is generally considered downtown Chattanooga. This location would effectively remove TVA employees from easy access to the central business district of Chattanooga, resulting in some shift of retail purchases, primarily at restaurants, away from that area. Many of these purchases probably would occur elsewhere within the city of Chattanooga, so there likely would be little impact citywide. However, some businesses near the current office location, especially restaurants, could have noticeable sales losses, at least until new tenants occupy the existing TVA facilities or other developments in the nearby area offset the losses. Continued growth in visitation to downtown attractions and continued residential development downtown could also help alleviate some of the potential impacts. If further development in this general location were stimulated by the relocation of TVA offices to this site, there could be long-term benefits to the city. For the city as a whole, there is not likely to be any noticeable impact due to these relocations.

3.2. Transportation

3.2.1. Affected Environment, Transportation - Alternatives 1, 2 and 4

TVA would utilize existing office space in downtown Chattanooga (Alternative 1) or relocate to new other existing office space in the central business district of the city (Alternative 2) and utilize the existing transportation network. Under Alternative 4, the former U.S. Pipe

site is at the southern edge of the downtown area and would also utilize the existing transportation network.

3.2.2. *Affected Environment, Transportation - Alternative 3*

Location and Surrounding Properties

The proposed location for the new office space under Alternative 3 is located in Hamilton County and is approximately 5.1 miles northwest of Interstate 75 on the southern shore of Chickamauga Reservoir. Most lands nearby are government-owned properties, but residential and recreational areas are in close proximity.

Highways and Roads

The proposed site has direct access from State Route (SR) 153 via Amnicola Highway (SR 319). SR 153 is a principal, multilane divided highway with wide lanes and shoulders traversing a primarily flat urban area in a north-south direction. Amnicola Highway is a similar four-lane highway near its intersection with SR 153. To the south of Amnicola Highway, SR 153 changes from a four-lane to a six-lane divided highway. SR 153 provides direct access to Interstate 75. SR 153 is also accessed by traffic from Interstate 75 via Bonny Oaks Drive (SR 317). Bonny Oaks Drive is a five-lane road with wide lane and shoulder widths near the proposed development. The proposed site can also be accessed via Kings Point Road, a two-lane road that is very hilly with narrow lanes and no shoulders. Kings Point Road primarily feeds a marina and a large residential area. It is unlikely that relocation of the office complex to this site would add traffic to Kings Point Road. Therefore, the primary routes studied in the transportation portion of this assessment were SR 153, Amnicola Highway, and Bonny Oaks Drive. Figure 3-2 shows the 2004 average annual daily traffic (AADT) counts provided by Hamilton County Geographic Information System (GIS) data and outlines the routes discussed above.

3.2.3. *Transportation Impacts - Alternatives 1 and 2*

Under Alternative 1, TVA would continue to lease space in the COC and would not relocate to other spaces. No new transportation impacts would result from Alternative 1.

Under Alternative 2, TVA would lease appropriate existing office space in the city of Chattanooga. If it were necessary to remodel the existing office space for TVA use, some minor, temporary impacts on local traffic circulation patterns may occur if it became necessary to obstruct, temporarily, one or more streets during the remodeling. This would be expected to be nothing more than a short-term inconvenience and would pose no long-term impacts.

Relocation of approximately 2,100 TVA employees from the COC to different existing downtown office buildings could potentially affect local transportation, specifically vehicular traffic flows. However, the resulting traffic flows would not vary greatly from the existing patterns. Therefore, Alternative 2 would result in negligible transportation impacts.

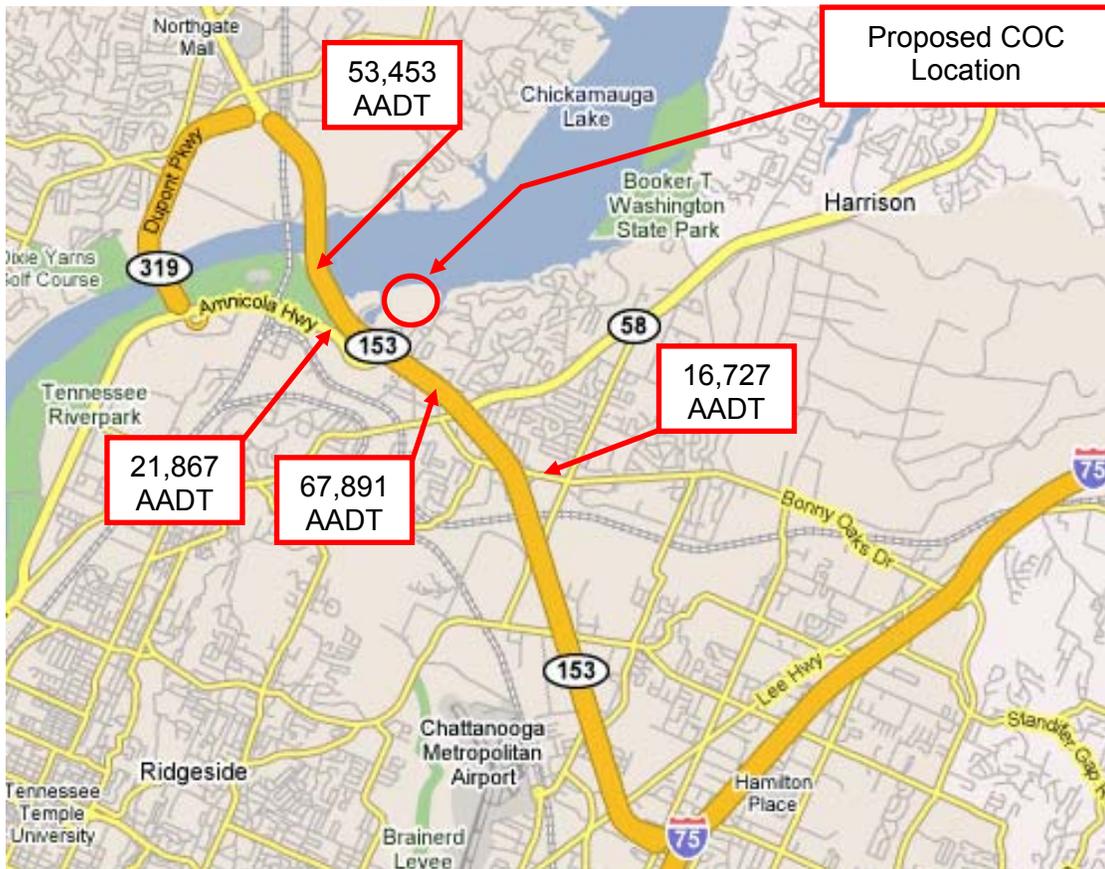


Figure 3-2. 2004 Average Annual Daily Traffic per Hamilton County GIS Data

3.2.4. Transportation Impacts- Alternatives 3 and 4

Under Alternative 3, TVA would contract for the construction of new office spaces on TVA property at Chickamauga Dam Reservation. Upon the potential completion of the facility and full occupancy (2011), an anticipated maximum of approximately 2,100 personnel from the current COC would relocate to the Chickamauga Dam Reservation.

Highways and Roads

As previously mentioned, the available traffic counts were taken in 2004 by Hamilton County. To gauge the effects of this proposed action, it was necessary to forecast the 2007 (present day) and 2010 (future) traffic conditions with and without the proposed action. The average annual traffic growth for this area was calculated to be 2.1 percent based on data reported by Hamilton County from 1988 through 2004. This 2.1 percent average annual increase was applied to the 2004 Hamilton County traffic counts to project the 2007 and 2010 data.

The approximately 2,100 TVA employees that would be driving daily to the proposed facility were distributed to the 2010 projected traffic data. Traffic distribution of these employees was performed by obtaining the home Zip codes of the employees and predicting the route they would use based on location. TVA encourages ride sharing using van and car pools. To be conservative, the assumption was made none of the approximately 2,100 personnel would participate in the ride sharing program. The assumption was also made that the increase in traffic associated with the construction of this alternative would be less than the

operational traffic increase experienced once the proposed facility is in use. This assumption is also conservative as construction impacts are short-term in nature and can usually be tolerated by the traveling public. Table 3-1 shows the traffic data used to evaluate Alternative 3.

Table 3-1. Traffic Data Used to Evaluate Alternative 3

Route Name	2007 Projected Traffic (AADT)	2010 Projected Traffic (AADT)	TVA Traffic Added in 2010 (AADT)	2010 Total Projected Traffic (AADT)	Projected Increase From TVA Traffic (%)
SR 153 ¹	72,259	76,907	2,022	78,929	2.6
SR 153 ²	55,827	59,419	1,298	60,717	2.1
Amnicola Hwy	23,274	24,771	656	25,427	2.6
Bonny Oaks Dr	17,803	18,948	290	19,238	1.5

¹Traffic on SR 153 (6-lanes) to the south of the intersection with Amnicola Highway

²Traffic on SR 153 (4-lanes) to the north of the intersection with Amnicola Highway

The *Highway Capacity Manual*, (Transportation Research Board 2000), outlines methods for evaluating the operational conditions within a traffic stream. These methods take into account average highway speed, lane width, shoulder width, and alignment among other inputs. These methods define six levels of service (LOS) using the letters A through F. LOS A represents the best service, generally operational free flow with very low delay. LOS F represents the worst operating conditions, signifying a buildup of queues and delays. Impacts are typically considered significant when levels of service fall below an LOS C. The data from the level of service analyses is shown in Table 3-2.

Table 3-2. Level of Service Analyses

Route Name	Year and Condition of Evaluation	Level of Service (LOS)
SR 153 ¹	2007 (Projected Base)	B
	2010 (Projected Future)	C
	2010 (Projected with TVA Traffic)	C
SR 153 ²	2007 (Projected Base)	C
	2010 (Projected Future)	C
	2010 (Projected with TVA Traffic)	C
Amnicola Hwy	2007 (Projected Base)	A
	2010 (Projected Future)	B
	2010 (Projected with TVA Traffic)	B
Bonny Oaks Dr	2007 (Projected Base)	A
	2010 (Projected Future)	A
	2010 (Projected with TVA Traffic)	A

¹Traffic on SR 153 (6-lanes) to the south of the intersection with Amnicola Highway

²Traffic on SR 153 (4-lanes) to the north of the intersection with Amnicola Highway

In the long term, the construction of new office spaces on TVA property at the Chickamauga Dam Reservation would not degrade the LOS of the surrounding highways and roads. There are two instances where the LOS decreased from the projected 2007 base data to the projected 2010 future data (SR 153 six lanes and Amnicola Highway) for releases unrelated to the proposed action. Decreases in LOS such as these are common as traffic levels increase due to normal growth and expansion. There were no LOS decreases with the addition of TVA traffic associated with the relocation of the COC to the Chickamauga Dam Reservation.

The increase in traffic for both the construction and operational phases of the development is expected to be insignificant. The highways and roads in the area are fully capable of absorbing the additional traffic with no problems. Based on TVA's analysis, the LOS is unchanged due to Alternative 3. There would be a corresponding but short-term reduction in traffic in downtown Chattanooga should this alternative be chosen.

Under Alternative 4, TVA would contract for the construction of new office space on non-TVA-owned property. Other downtown locations would have a similar impact as the existing COC location, such as the former U.S. Pipe site as it is located adjacent to Interstate 24 just south of the central business district. Access to the site from the central business district is along Broad or Chestnut Streets. Access to the site from Interstate 24 eastbound is via the Williams Street exit then right on West 25th Street. Access to the site from Interstate 24 westbound is via the Market Street Southbound exit to West 21st, then left on Williams and right on West 25th. The site is readily accessible by car, bus, trolley, and bicycle. The transportation impacts of selecting other sites not in the downtown area would be expected to be similar to those of Alternative 3. Brownfield sites could potentially have lesser impacts, because the transportation infrastructure supporting previous use of such a site should still be in place.

3.3. Cultural Resources

The NHPA, as amended, requires that federal agencies evaluate the effects of their undertakings on historical, archaeological, and cultural resources.

East Tennessee has been an area of human occupation for the last 12,000 years. Human occupation of the area is generally described in five broad cultural periods: Paleo-Indian (11,000-8000 BC), Archaic (8000-1600 BC), Woodland (1600 BC-AD 1000), Mississippian (AD 1000-1700), and Historic (AD 1700- to present). Prehistoric land use and settlement patterns vary during each period, but short- and long-term habitation sites are generally located on floodplains and alluvial terraces along rivers and tributaries. Specialized campsites tend to be located on older alluvial terraces and in the uplands. European interactions with Native Americans associated with the fur trading industry in this area began in the 17th and 18th centuries. European-American settlement increased in the early 19th century as the Cherokee were forced to give up their land. Hamilton County was created by the Tennessee General Assembly in 1819 (Wilson 1998). In 1940, TVA completed construction of Chickamauga Dam as part of its long-term development plan for the Tennessee River Valley (TVA 1980).

Under Alternative 1, TVA would renew its lease for the current office space in downtown Chattanooga, Tennessee. This action would have no effect on historic properties. The Tennessee SHPO concurred with this finding and recommendation by letter dated January 11, 2007, as have some of the Indian tribes TVA consulted (see Appendix C).

Under Alternative 2, TVA would lease existing office space in Chattanooga. The potential effects of this alternative would be on historic structures and depend on the amount of remodeling of the office space that would be needed and the historic characteristics of both the buildings TVA would occupy and nearby buildings. Extensive alterations of buildings eligible for or listed on the NRHP or of buildings near structures that are eligible for or listed on the NRHP could adversely affect historic structures. If this alternative were selected, TVA would review the potential impacts to cultural resources as required by Section 106 of the NHPA and appropriately mitigate any impacts in consultation with the Tennessee SHPO. The Tennessee SHPO concurred with this finding and recommendation, as did the Jena Band of Choctaw Indians and the United Keetoowah Band of Cherokee Indians. Chattanooga zoning restrictions and planning guidelines would most likely prohibit any remodeling that would adversely affect properties eligible for inclusion on the NRHP by prospective lessors or developers, further decreasing the likelihood of an adverse impact on NRHP-eligible properties.

Under Alternative 3, TVA would contract for construction of new office space on TVA property located on the Chickamauga Dam Reservation. A Phase I Cultural Resource Survey was conducted November 27 and December 5, 2006, of the project's APE (Angst and Guymon 2006).

The archaeological portion of the survey recorded two isolated finds. The isolated finds are not considered archaeological sites and therefore were not recommended eligible for the NRHP.

The historic structures survey identified no architecturally significant standing structures within the 0.5-mile architectural APE. The Chickamauga Dam is located 0.75 mile from the Alternative 3 site and has recently been determined eligible for the NRHP. The Tennessee SHPO concurred with TVA's determination of no effect provided an existing vegetative buffer between the new office complex and the dam is left intact and maintained. With the maintenance of this buffer, TVA has determined that Alternative 3 would have no adverse effect on historic properties (see Figure 2-1 and Section 3.6 – Visual Resources). By letters dated January 11, 2007, and January 5, 2007, the Tennessee SHPO and the Jena Band of Choctaw Indians, respectively concurred with this finding and recommendation. In accordance with the request made by the United Keetoowah Band of Cherokee Indians in Oklahoma by letter dated January 3, 2007, if Alternative 3 were selected, TVA would execute an agreement with the United Keetoowah Band addressing data recovery and mitigation plans should any inadvertent discoveries of cultural materials be encountered.

Under Alternative 4, TVA would contract for the construction of new office space on non-TVA-owned property. If the former U.S. Pipe site were selected, TVA would review its impacts on historic and prehistoric cultural resources as required by Section 106 of the NHPA and appropriately mitigate any such impacts in consultation with the Tennessee SHPO. Due to extensive prehistoric and historic use in close proximity to the former U.S. Pipe site, a high potential for deeply buried archaeological resources exists at this location. Additional investigations of the former U.S. Pipe site would likely include examination of geotechnical information on the soil strata in the APE including, but not limited to, soil cores, well monitoring cores, and limited backhoe trenching to determine if any archaeological resources are present in the alluvial soils beneath the existing site.

Existing structures to be removed for the new office space would be evaluated to determine if portions are eligible for listing on the NRHP. The proposed former U.S. Pipe site is a part of the much larger 19th and early 20th century U.S. Pipe and Foundry Company complex, which operated at this location until 2006. TVA did not identify any buildings within this complex listed on the NRHP. Preliminary reviews indicate many of these structures are of more recent construction and are not eligible. However, adjacent structures within the APE may be eligible. These are brick factory industrial buildings 1 to 3 stories in height with clerestory glass. To minimize visual impacts on these buildings, the conceptual design for the former U.S. Pipe site includes a 3-story building that would be designed to front on Chestnut Street. Toward the northwest and farther from Chestnut Street, building heights would rise to 5 stories and then 10 stories adjacent to the elevated Interstate 24/U.S. Highway 27 interchange and overpass. TVA would review impacts on the historic structures as required by Section 106 of the NHPA and appropriately mitigate any such impacts in consultation with the Tennessee SHPO.

If a different site were selected, TVA would review its impacts on cultural resources as required by Section 106 of the NHPA and appropriately mitigate any such impacts in consultation with the Tennessee SHPO. The Tennessee SHPO concurred with this approach and desires to be part of any further consultation by letter dated January 11, 2007, as have the Jena Band of Choctaw Indians and the United Keetoowah Band of Cherokee Indians (see Appendix C).

3.4. Natural Heritage Resources

Natural heritage resources include vegetation, wildlife, aquatic ecology, threatened and endangered species, natural areas, and wetlands. Of the alternatives, the only potential for impact on these resources would primarily be from Alternative 3 and, possibly, Alternative 4, depending on the building location and its condition.

3.4.1. Vegetation

Remaining in the existing COC (Alternative 1) or relocating to other existing office space in the city of Chattanooga (Alternative 2) would have little to no impact on native vegetation since the locations have been extensively modified with regard to vegetation.

The tract of TVA-owned land near Chickamauga Dam under consideration for Alternative 3 is mostly forested. It was described in the Land Plan (TVA 1989) as having excellent forest management capability, including pine plantations. Since then, the pine plantations, which occurred on the site of the proposed office complex, have been harvested in a salvage operation following their infestation by southern pine beetles. A field survey of the site was conducted on October 6, 2006. The site is crossed by a high-voltage transmission line right-of-way and contains areas of young forest. Existing plant communities include herbaceous vegetation, deciduous forests, and mixed evergreen-deciduous forests (see Appendix E for a more detailed description). Approximately 8 percent of the 30-acre site is herbaceous vegetation found in the existing right-of-way. The deciduous forest accounts for approximately 90 percent of the proposed project area. The mixed evergreen-deciduous forest, or oak-pine forest, accounts for approximately 2 percent of the potential project area. The canopy is dominated by black oak, loblolly pine, red maple, white oak, and white pine while the subcanopy consists of dogwood. The plant communities observed within the proposed office complex site are common and all are representative of the region, and construction of the complex would not result in significant impacts to vegetation.

Due to the extensive history of human habitation and disturbance of vegetation in the Chattanooga area, the plant communities at a greenfield site under Alternative 4 would also be expected to be common and representative of the region. For the former U.S. Pipe site, approximately 95 percent of the proposed office complex site is industrial, consisting of buildings and parking lots. The remaining 5 percent is comprised of herbaceous vegetation along fencerows and roadsides. This plant community is common and representative of a heavily disturbed area as seen at the industrial complex; therefore, no impacts to vegetative communities are expected. If the site or sites selected for further evaluation under Alternative 4 are undeveloped and have not been the subject of recent evaluations, TVA would evaluate the plant communities to determine any potential impacts and employ appropriate avoidance or mitigation measures to minimize impacts as necessary. Under any alternative, no nonnative, invasive species would be used for site revegetation and landscaping.

3.4.2. Wildlife

Since the plant communities needed to support most native wildlife have already been removed during prior development and construction, remaining in the existing COC (Alternative 1) or relocating to other existing office space in the city of Chattanooga (Alternative 2) would have little to no impact on wildlife.

For Alternative 3, the approximately 30 acres of mostly forested habitat that would be developed occur within an extensively modified urban/suburban landscape, are mostly second growth with large areas of invasive species, mainly Chinese privet, and offer wildlife habitat of moderate to poor quality. A more mature forest of high quality for wildlife surrounds the proposed office site and would be preserved (see Figure 2-1). The Land Plan (TVA 1989) identified this tract as having good capability for wildlife management and noted as one of few sites for the brown-headed nuthatch in Tennessee. At that time, this bird had a very restricted range in the state. Three great blue heron colonies occur in the vicinity, two at distances of at least a mile from the site and one about 250 feet from the proposed office complex site. The closest colony consists of five nests in a single tree and is likely a satellite colony of a larger colony a mile upstream.

Most wildlife on the Alternative 3 site would move to adjacent areas during construction activities, and some less mobile species would likely be killed. The brown-headed nuthatch has greatly increased in population and range in Tennessee since 1989 and would not be adversely affected. Disturbance from construction would likely cause the herons to abandon the adjacent small colony site and return to the larger colony or reneest nearby. Given the regional trend in this species' population, the impact would be negligible. Other wildlife that would be impacted are common throughout the region, and no unique or uncommon wildlife habitat would be affected. Alternative 3 would not result in significant adverse impacts to wildlife populations or their habitats.

Under Alternative 4, TVA would evaluate any undeveloped location for impacts to wildlife when a site is identified. The potential former U.S. Pipe site contains little wildlife habitat and the wildlife population is likely dominated by nonnative species such as the European starling, rock pigeon, Norway rat, and house mouse. The buildings on the site provide potential roosting sites for bats, although this utilization is not likely. If this or a similar site were selected, TVA would identify structures with bat use and take measures to minimize impacts to bats. The development of this site would likely not result in significant impacts to

wildlife or wildlife habitat. The potential for adverse impacts to wildlife on a brownfield Alternative 4 site is very low.

3.4.3. Aquatic Ecology

The city of Chattanooga is located on Nickajack and Chickamauga Reservoirs (Tennessee River) in the Ridge and Valley region of southeastern Tennessee. Streams in this physiographic region are characterized by limestone rubble, bedrock riffles, and silty sand pool areas. While springs and caves are relatively numerous in the Ridge and Valley, no true cavefishes occur in the project area. The Nickajack state mussel sanctuary is located in the Chickamauga tailwater starting at Chickamauga Dam and ending downstream at Tennessee River Mile (TRM) 465.9.

The Chickamauga Reservoir forebay area rated “good” for ecological health indicators in 2005. The ecological indicators rated include dissolved oxygen, chlorophyll, fish, bottom life, and sediment. Nickajack Reservoir also rated “good” overall for ecological health indicators, but a precautionary fish consumption advisory remains in effect, and there is a state bacteriological swimming advisory on three tributary streams that flow into Nickajack Reservoir: Chattanooga Creek, Stringers Branch, and Citico Creek.

There are no streams that would be impacted by either Alternative 1 or 2. No intermittent or perennial streams occur on the Alternative 3 site at the TVA Chickamauga Dam Reservation. Several wet weather conveyances are present on the property that adjoins Chickamauga Reservoir.

Under Alternatives 1 and 2, there would be no impacts to aquatic resources. Under Alternative 3, no intermittent or perennial watercourses occur on the proposed footprint of the office complex, the proposed construction footprint would not reach the shore of Chickamauga Reservoir, and any filling of wet-weather conveyances would be done according to BMPs and permit conditions. Therefore no direct, indirect or cumulative impacts would occur to aquatic life in Chickamauga Reservoir as a result of Alternative 3.

Under Alternative 4, no streams or other aquatic features occur on the portion of the former U.S. Pipe site identified as a potential location for the office complex. Construction of the office complex on this site would incorporate BMPs as well as any other measures necessary due to preexisting contamination as described in Section 3.5 and have no direct, indirect, or cumulative impacts on aquatic life in nearby streams or Chickamauga Reservoir. For other sites, if there are no streams or wet-weather conveyances subject to disturbance on the site, standard construction erosion BMPs would be used and no direct, indirect, or cumulative impacts to aquatic ecology are anticipated. If there are wet-weather conveyances, but no perennial streams in the construction footprint on the site, Alternative 4 impacts would be expected to be similar to those of Alternative 3. The presence of a perennial stream subject to impact on the site would require an Aquatic Resource Alteration Permit (ARAP) from TDEC and possibly a U.S. Army Corps of Engineers (USACE) Section 404 permit. If needed, TVA would work with state and federal authorities to mitigate impacts to aquatic resources.

3.4.4. Threatened and Endangered Species

Alternatives 1 and 2. No threatened or endangered species would be impacted by utilizing the existing office space under Alternative 1 or by securing other existing office space within the Chattanooga area under Alternative 2.

Alternative 3. One federally listed (mountain skullcap, *Scutellaria montana*) and three state-listed plant species occur within 5 miles of the Alternative 3 site (see Appendix E, Table E-1). Two additional federally listed plants and one candidate plant are reported from Hamilton County, Tennessee. None of these species or habitat suitable for them were observed on the Alternative 3 site during an October 2006 field survey. No designated critical habitat is located within the proposed project area at the site. Consequently, no impacts to federally or state-listed plant species would result from implementing Alternative 3.

Because no state-listed or federally listed aquatic animals are known to occur in the Tennessee River in the vicinity of the Alternative 3 site, no direct or indirect impacts would occur to these species as a result of construction on this tract. Application of BMPs and permit requirements during construction would ensure that no impacts to water quality in the Tennessee River would occur. There would be no cumulative impacts to listed aquatic animals as a result of this action.

No federally or state-listed terrestrial animals were observed during 2006 field investigations. One federally listed terrestrial animal, the bald eagle (*Haliaeetus leucocephalus*) is known to occur in Hamilton County, Tennessee, and seven state-listed terrestrial animals have been reported from within 3 miles of the site (see Appendix E, Table E-3). The closest bald eagle nest to the proposed office complex site is approximately 5 miles away. The proposed actions are not expected to affect bald eagle nests due to the distances between the nests and the proposed office complex site. The proposed actions would not eliminate barn owl foraging habitat or destroy potential barn owl nest sites; therefore, barn owls would not be adversely affected by the proposed actions. King rails, Virginia rails, and least bitterns are known to nest in a marsh approximately 3 miles from the proposed office complex site. The proposed actions would not adversely affect the marsh due to the distance between the marsh and the project site. No rail or bittern habitat exists on the proposed office complex site; therefore, no direct or indirect impacts to rails and bitterns are expected. The proposed actions would not impact sharp-shinned hawk nesting habitat, and is not expected to impact sharp-shinned hawks. Therefore implementation of Alternative 3 would have no effect on federally or state-listed terrestrial animals.

Alternative 4. No listed plants are known or likely to occur in the vicinity of the former U.S. Pipe site. No listed terrestrial animals are known from the site although the vacant industrial buildings provide good habitat for barn owls and are potential roost habitat for bats, including the endangered gray bat. If this alternative were chosen, TVA would take measures such as providing alternative nest sites to minimize impacts to any barn owls that are present. If gray bats are present, TVA would consult with the U.S. Fish and Wildlife Service and take measures such as seasonal restrictions on demolition activities to minimize impacts. With implementation of these measures at Alternative 4 sites, no adverse impacts to listed terrestrial animals are anticipated. Four state-listed and four federally listed aquatic species occur in the watershed of the former U.S. Pipe site. Because there are no streams on the site and little to no runoff from the site is anticipated during construction, no direct, indirect, or cumulative impacts to these species are anticipated. If TVA elects to build a new building on undeveloped land that has not been recently evaluated for the potential presence of threatened and endangered species, TVA would survey the site and take appropriate action to mitigate or avoid impacts to listed species. If impacts cannot be avoided, TVA would consult with the U.S. Fish and Wildlife Service before proceeding with the proposed action.

3.4.5. Natural Areas

Nine natural areas and one ecologically significant site occur within a 3-mile radius of the proposed Chickamauga Dam Reservation site under Alternative 3. Eight managed areas and/or ecologically significant sites are within a 3-mile radius of the former U.S. Pipe site under Alternative 4. These are described in Appendix E. Under Alternatives 1 and 2, there would be no impacts or changes to natural areas. Under Alternative 3, TVA would contract for the construction of new office space on TVA property at Chickamauga Dam Reservation. Because no natural areas, Nationwide Rivers Inventory streams, or Wild and Scenic Rivers are within 0.5 mile of this site, no impacts to these features are anticipated under Alternative 3. Under Alternative 4, the proposed brownfield, former U.S. Pipe site, is not located near any Natural Areas and no impacts would occur. Due to the nature of other potential sites that could be considered under Alternative 4, impacts to natural areas are unlikely.

3.4.6. Wetlands

No impacts to wetlands would occur under Alternatives 1 or 2.

No wetlands occur on the Alternative 3 site. The entire site is upland habitat, thus no wetland impacts would be associated with Alternative 3. Under Alternative 4, no wetlands occur on the former U.S. Pipe site and, therefore, no direct or indirect impacts would occur to wetlands as a result of construction on this tract. In the RFP, TVA directed prospective bidders to not propose any sites with wetlands unless those wetlands could be avoided or appropriately mitigated. Adherence to this requirement will help ensure that potential impacts to wetlands are acceptable. The potential for wetland impacts is less likely on other brownfield sites than greenfield sites.

3.5. Water Resources

Precipitation in the Chattanooga area averages about 55 inches per year with the wettest month in March at 6.2 inches and the driest month in October at 3.3 inches. The average annual air temperature is 60 degrees Fahrenheit, ranging from a monthly average of 39 degrees Fahrenheit in January to 80 degrees Fahrenheit in July. Stream flow varies with rainfall and averages about 23 inches of runoff per year or approximately 1.7 cubic feet per second per square mile of drainage area.

The Alternative 3 project area drains to the Tennessee River at Chickamauga Reservoir. Alternatives 1, 2, and 4 are in the watershed of Nickajack Reservoir, just downstream of Chickamauga Dam. This section of the Tennessee River is classified by the state (TDEC) for domestic and industrial water supply, fish and aquatic life, recreation, irrigation, livestock watering and wildlife, and navigation. Nickajack Reservoir from South Chickamauga Creek to Chickamauga Dam has been identified by the state as a Tier II high-quality stream due to a federal listed as threatened snail darter. Nickajack Reservoir is on the state 303 (d) list as impaired (i.e., not fully supporting its designated uses) due to polychlorinated biphenyls (PCBs) and dioxins from contaminated sediments. The former U.S. Pipe site proposed under Alternative 4 drains to Chattanooga Creek just upstream of its confluence with the Tennessee River at Nickajack Reservoir. Chattanooga Creek is classified for industrial water supply, fish and aquatic life, recreation, irrigation, and livestock watering and wildlife. It is on the 303 (d) list due to PCBs, dioxins, low dissolved oxygen, *Escherichia coli* (*E. coli*), habitat loss due to alteration in streamside or littoral vegetative cover, and oil and grease from combined sewer overflow, discharge from municipal separate storm sewer system

area, nonindustrial permitted, hydromodification, spills, and contaminated sediment. Some contaminated sediment has been removed by Superfund activities. Water contact and fishing advisories are in effect in this section of the stream.

Chickamauga Reservoir extends from Chickamauga Dam at TRM 471.0 to Watts Bar Dam at TRM 529.9. The reservoir has a mean annual flow of 34,000 cubic feet per second, a mean depth of 18 feet, and a hydraulic residence time of about eight days. TVA monitors reservoir ecological conditions every other year at three reservoir locations. In 2005, dissolved oxygen and chlorophyll concentrations rated good, meaning that there was enough oxygen to support a healthy population of fish and other aquatic life and that algae growth was within the expected range. Sediment quality rated good at the forebay and midreservoir monitoring locations. PCBs were elevated at the Hiwassee River embayment location, resulting in a fair rating. Elevated concentrations of selected metals (generally zinc and copper) are common in the sediment, probably as a result of past mining activities in the Ocoee watershed. There are no state advisories against swimming in Chickamauga Reservoir. *E. coli* bacteria levels in samples collected in 2006 were within the state of Tennessee's guidelines for water contact with one exception: Grasshopper Creek boat ramp at TRM 494.0.

Nickajack Reservoir extends from Nickajack Dam at TRM 424.7 to Chickamauga Dam. The reservoir has a mean annual flow of 35,200 cubic feet per second, a mean depth of 23 feet, and a hydraulic residence time of about three days. In 2005, dissolved oxygen and chlorophyll concentrations rated good at the one monitoring station in the forebay. Sediment quality rated good. No pesticides or PCBs were detected. There are no state advisories against swimming in Chickamauga Reservoir. *E. coli* bacteria levels in samples collected in 2006 were within the state of Tennessee's guidelines for water contact with one exception: Maple View Beach at TRM 425.3.

Under Alternative 1, the No Action Alternative, no new impacts to surface water or cumulative effects to surface water would occur.

The proposed Alternative 2, leasing existing office space in the city of Chattanooga, would have negligible impacts and cumulative effects to surface water resources.

Under Alternatives 3 and 4, constructing new office space either on TVA property at the Chickamauga Dam Reservation or on non-TVA property, such as the former U.S. Pipe site, could potentially result in adverse surface water impacts from soil disturbances associated with construction of the proposed office building, access roads, and utilities. Soil erosion and sedimentation that occur during construction can increase reservoir turbidity and threaten aquatic life. Petroleum products associated with vehicle parking and traffic could be transported to the reservoir by storm water runoff. Improper use of herbicides to control vegetation could result in runoff to the reservoir and subsequent aquatic impacts. If the tree canopy were removed along the shoreline in Alternative 3, erosion could increase due to wave action. Because of the history of the former U.S. Pipe site and the potential presence of contaminants, special precautions would be required in association with surface water runoff and soil disturbing activities to ensure proper identification, handling, and disposal of any contaminants that may be encountered.

However, TVA would require BMPs and would include precautions in the design, construction, and maintenance of its facilities to minimize these potentially adverse surface water impacts. Appropriate state construction and storm water management permits would

be obtained and followed to minimize erosion and the runoff of sediment or other contaminants. If areas of suspected contamination are disturbed, sampling would be conducted to identify, contain, and properly dispose of potential pollutants. For the Alternative 3 site, the project would include a substantial shoreline buffer zone to avoid additional shoreline erosion and runoff of potential contaminants. Canopies in streamside management zones (SMZs) would be left undisturbed unless there were no practicable alternative. Grounds maintenance would employ manual and low-impact methods wherever possible. In areas requiring chemical treatment, only U.S. Environmental Protection Agency (USEPA) registered herbicides would be used in accordance with label directions designed in part to restrict applications in the vicinity of receiving waters and to prevent unacceptable aquatic impacts. Proper implementation of these controls is expected to result in only minor and temporary impacts to surface waters. No cumulative impacts are anticipated.

Under Alternative 4, constructing new office space on non-TVA property would have potential adverse surface water impacts similar to Alternative 3. Depending on the location, the potential reservoir impacts associated with Alternative 3 may be replaced by potential stream impacts. As with Alternative 3, proper implementation of appropriate BMPs and control measures are expected to result in only minor and temporary surface water and cumulative impacts.

3.6. Visual Resources

The physical, biological, and cultural features of an area combine to make the visual landscape character both identifiable and unique. Scenic integrity indicates the degree of unity or wholeness of the visual character. Scenic attractiveness is the evaluation of outstanding or unique natural features, scenic variety, seasonal change, and strategic location. Where and how the landscape is viewed would affect the more subjective perceptions of its aesthetic quality and sense of place. Views of a landscape are described in terms of what is seen in foreground, middleground, and background distances. In the foreground, an area within 0.5-mile of the observer, details of objects are easily distinguished in the landscape. In the middleground, normally between 1-4 miles from the observer, objects may be distinguishable but their details are weak and they tend to merge into larger patterns. Details and colors of objects in the background, the distant part of the landscape, are not normally discernible unless they are especially large and standing alone. The impressions of an area's visual character can have a significant influence on how it is appreciated, protected, and used. The general landscape character and additional details of the study area are described in this section.

3.6.1. Alternatives 1 and 2

Under Alternative 1, remaining in the current office space would have no effect on visual resources. Alternative 2, which would involve leasing other existing office space, likewise would have no significant effect on visual resources, as most modifications to the buildings would most likely be on the interior of the buildings. Any modifications to the exterior of the buildings would be carried out in a manner, as described in Section 3.3 that is compatible with the historic integrity of the office buildings and nearby buildings.

3.6.2. Alternative 3

Alternative 3 would involve construction and occupation of an office complex on a 30-acre tract of TVA land located on Chickamauga Reservoir at approximate TRM 471.70 and approximately 0.75 mile southeast of historical Chickamauga Dam. The visual character of the TVA tract shoreline is natural appearing and forested. A large marina occurs just west of the Alternative 3 site and lands to the east are mostly forested with scattered private residences and boat docks. The ridgelines and peaks provide exceptional visual contrast and contribute to distinct scenic attractiveness in the landscape. Overall, scenic integrity on this section of the reservoir can be characterized as moderate due to subtle deviations in line and form resulting from occasional shoreline disturbances.

The tract of land for the proposed office complex is part of the Chickamauga Dam Reservation. This parcel has been managed for forest management, wildlife management, visual management, and public recreation. The visual character of the tract has been maintained utilizing management objectives as defined by TVA in 2003 (TVA 2003). Based on the excellent scenic value class, the parcel has been managed under preservation criteria for a natural evolving landscape character. Only very low-impact recreational and scientific activities have occurred.

The subject tract is heavily vegetated with mainly mature hardwoods interspersed with numerous prominent pine thickets. Elevations on the site range from 683 feet at Chickamauga Reservoir to approximately 850 feet at the highest peak on the northern portion of the site. The peak is one of the highest on this section of the reservoir. Steep slopes from the peak to the shoreline are visually dominant in the landscape and are heavily vegetated with mature trees. The tract is bordered by small coves to the east and west and residential development to the south. The western cove provides water access to Chickamauga Boat Harbor and a TVA public day-use recreation area, and the eastern cove provides water access to the U.S. Coast Guard base.

The tract is highly visible from Chickamauga Dam and SR 153 to the northwest, the opposite shore of Chickamauga Reservoir, and all points along the reservoir to the east to approximately Booker T. Washington State Park. The parcel is viewed in the foreground by passing boats on Chickamauga Reservoir and in the middleground by area residents and visitors at Booker T. Washington State Park. This shoreline property is one of the few noticeably undeveloped tracts along this section of the lake.

Access to the parcel would likely be at or near the intersection of Kings Point Road and Amnicola Highway to the south. There is an existing bar gate at the field road into the site to prevent off-road vehicle abuse. Amnicola Highway serves as a major thoroughfare to the west, while Kings Point Road is predominately for residential access. Most of the land on the northern side of Kings Point Road west of Roberts Road and east of the marina is undeveloped TVA Chickamauga Dam Reservation land.

In summary, the scenic value of the parcel is excellent due to distinctive scenic attractiveness, moderate scenic integrity, and public visibility. The visual character of the reservoir is natural appearing and is interrupted by only occasional residential access and development. Land disturbance activities that have moderate effect on scenic integrity include a major transmission line right-of-way, which traverses the site from west to east approximately 500 feet north of Kings Point Road. The transmission line is not visible from public or private viewing positions outside of the tract and, therefore, does not diminish scenic value.

Visual consequences are examined in terms of visual changes between the existing landscape and proposed actions, sensitivity of viewing points available to the general public, their viewing distances, and visibility of proposed changes. Scenic integrity indicates the degree of intactness or wholeness of the landscape character. These measures help identify changes in visual character based on commonly held perceptions of landscape beauty and the aesthetic sense of place. The foreground-, middleground-, and background-viewing distances were previously described above.

Under Alternative 3, new office space would be constructed on the subject land tract. Substantial visual changes would likely occur in the landscape unless specific measures are taken to avoid altering those areas that are seen by the public from viewing positions identified in the above. If the identified commitments are followed, visual impacts would likely be minor and insignificant.

Visitors to the Chickamauga Dam would have middleground views of the proposed office complex, adding to the number of discordantly contrasting elements seen in the landscape. Most contrasting elements seen in the landscape now are closer to the shoreline with the exception of a multifamily development on the opposite side of the reservoir from the tract. If the office complex is built as a multistory complex, taller sections of the building would likely be seen above the highest peaks on the parcel.

Views from the reservoir would be visually similar to those seen from the dam, depending upon viewer location and duration of the views. Views from the east toward Booker T. Washington State Park would be in the middleground and in the background just west of Pinkys Point near TRM 477. Views from background distances tend to merge into broader patterns, and details are not as discernible. From peaks along the opposite shoreline, views of the new structures would be in the middleground and would be similar to other elements seen in the landscape along peaks in this section of the reservoir.

Views of the new access road along Kings Point Road would likely not be significant for construction of the actual roadway itself. However, views for local residents of increased traffic entering the site would be a visual change from the automobile traffic that is occurring now. The increase in traffic is discussed in the transportation section of this document.

Views of the site from most locations on the reservoir following construction would be insignificant if the existing vegetation is maintained on the steep slopes from the shoreline to the prominent peaks of the tract as shown in Figure 2-1. The potential negative visual impacts of structures seen through the existing vegetation would be minimized if the colors used are compatible with natural background colors and include dark roofs. Colors within this range merge into broader patterns within the middleground distances, and details are not as discernible.

Impacts from lighting the new parking area, walks, roads, and common areas would be insignificant if the commitments cited in Section 2.4 are implemented. This would include fully shielding all lights and providing low-glare optics that do not emit light above the horizontal plane. All lights would be low pressure sodium, with poles not exceeding 40 feet in height.

Operation, construction, and maintenance of the proposed office development would be visually insignificant if the commitments outlined in Section 2.4 are implemented. There may be some minor visual discord during the construction period due to an increase in

personnel and equipment and the use of laydown and materials storage areas. These visual obtrusions would be temporary until disturbed areas have been restored. Therefore, implementation of Alternative 3, including the previously mentioned commitments, would not result in significant visual impacts.

3.6.3. Alternative 4

If TVA implements Alternative 4, the design would incorporate features that preserve the visual integrity of the site through standard architectural techniques including, but not limited to, vegetative buffers, color schemes for blending with existing features, or other techniques as TVA and the City of Chattanooga may develop to produce an aesthetically pleasing office complex. No significant visual impacts would be anticipated, but TVA would review the design and supplement this EA as necessary.

The potential former U.S. Pipe site is located on the western side of Chattanooga adjacent to Interstate 24 near TRM 461.5. The site is currently a brownfield site and was previously used for industrial manufacturing. The visual character of the site and the surrounding areas is predominately industrial with the exception of a recreation area to the west. The site is mainly level with few vegetative features within the secured, fenced area.

The tract is highly visible from both the water and land. Views from peaks, such as Lookout Mountain to the south, would be in the middleground distance. Views from the water would be from much shorter distances in the foreground. These areas would include viewing positions along the Tennessee River at TRM 462.5 to the north and TRM 459.4 to the southwest. Overall, scenic integrity on this section of the reservoir can be characterized as moderate to low due to extensive development and human alteration.

Under this alternative, new office space would be constructed on non-TVA land. If the site is an existing industrial landscape such as the former U.S. Pipe site, substantial adverse visual changes would not likely occur. Visual quality could be improved if guidelines from the General Services Administration's Facilities Standards for the Public Buildings Service are followed. There would be a large increase in the amount of green space seen in the landscape around the proposed building site. Material colors for all structures would compliment natural background hues, as cited in Section 2.4. This would result in a more visually attractive developed site.

Views of the new development from land or water would be similar to the landscape that is viewed now. Any changes would be insignificant when compared to the context of the site with surrounding developments. As distance increases for viewer locations, details would tend to merge into broader patterns and would be less discernible.

The impacts of lighting for parking, walkways, and roads would be insignificant if the commitments cited for Alternative 3 are implemented. These would include fully shielding all lights and providing low-glare optics that do not emit light above the horizontal plane. All lights would be low pressure sodium, with light poles not exceeding 40 feet in height.

Operation, construction, and future maintenance activities for this alternative would be visually insignificant. There may be some visual discord during the construction period due to an increase in personnel and particularly an increase in truck and equipment traffic along local roads. There would be no permanent adverse visual impacts anticipated as a result of this alternative at the former U.S. Pipe site. Mitigation measures similar to those identified

for the former US Pipe site and for Alternative 3 should make visual impacts at other potential Alternative 4 sites insignificant. If additional site-specific mitigation measures are needed, TVA would document those measures and supplement to this EA as necessary.

3.7. Outdoor Recreation Resources

The Chattanooga area has a wealth of outdoor recreational activities. TVA has supported many efforts by the city and county in partnership with the Chattanooga Hamilton County Regional Planning Agency (CHCRPA), Outdoor Chattanooga, and numerous fishing, bicycling, hiking, canoeing, rowing, and other sports organizations to develop and maintain facilities that support many types of outdoor recreation. The success of these collaborative efforts was recently recognized by the American Planning Association (APA), which selected Chattanooga as recipient of APA's 2007 National Planning Excellence Award for Implementation of its comprehensive bicycling plan (CHCRPA 2007).

3.7.1. Alternatives 1, 2, and 4

Outdoor recreational resources in the downtown Chattanooga central business district consists mainly of access to the Riverwalk, the Walnut Street Bridge for pedestrians, urban walking trails, and bicycling lanes. Some limited fishing occurs from piers adjoining the Tennessee Riverwalk, but walkers, runners, and bicyclists constitute the highest percentage of recreational users. Alternatives 1 and 2, which would most likely entail TVA occupancy of office space in the downtown central business district of Chattanooga, should not have any adverse impact on recreational resources, since the TVA employees who use the existing facilities would presumably continue to do so. Long-term development plans for the former U.S. Pipe site under Alternative 4 call for extension of urban walkways and greenways to the site, so if these plans were implemented, a slight improvement in outdoor recreational resources in the immediate vicinity of the proposed office complex would be expected. Selection of another potential Alternative 4 site in the downtown area would have similar insignificant impacts like Alternatives 1, 2, and Alternative 4 using the former U.S. Pipe site. Selection of an Alternative 4 site away from the downtown area would not be expected to impact outdoor recreation, since it would be unlikely for a privately owned site to be available for outdoor recreational use by the public.

3.7.2. Alternative 3

The current facilities at the TVA Chickamauga Dam Day Use Area include 50 picnic tables, two group pavilions, a swimming beach, children's play equipment, and a boat ramp. Current recreation activities include swimming, picnicking, walking, and running. Many recreation events are held at the Chickamauga Dam recreation area on a regular basis. These activities include cross-country running events, a temporary disc golf course, a yearly triathlon, a yearly powerboat race, boat shows at the marina, antique car shows, and company-sponsored events at the pavilion. Most of the events entailing the greatest amounts of traffic in the vicinity of the Chickamauga Dam recreation area occur on weekends, so the presence of the proposed new TVA office complex in the vicinity would not be expected to impact outdoor recreation adversely. If new ground-level parking at the proposed new office complex were made available for public use on weekends and federal holidays, and connected to the existing recreation area by a sidewalk or walking trail, it could result in a slight improvement in the outdoor recreational resources in the immediate vicinity.

The current planned uses of the Alternative 3 site include public recreation, forest management, and wildlife management. The Land Plan (TVA 1989) described the site's capability for public recreation as good and noted the site could potentially be used for expansion of the TVA public day-use recreation area to the west. The site presently receives a low level of informal recreational use, and TVA has no plans for developing additional recreational facilities on the site. The proposed TVA facilities would not interfere with the marina and day-use facilities on the remainder of the Chickamauga Dam Reservation.

CHAPTER 4

4.0 LIST OF PREPARERS

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Involvement: Cultural Resources

CHAPTER 5

5.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS IDENTIFIED AS STAKEHOLDERS

Federal Agencies

- U.S. Army Corps of Engineers
- U.S. Department of Agriculture
 - Natural Resources Conservation Service
- U.S. Department of the Interior
 - National Park Service
 - Office of Environmental Policy and Compliance
- U.S. Fish and Wildlife Service

State Agencies

- Southeast Tennessee Development District
- Tennessee Conservation League
- Tennessee Department of Agriculture
- Tennessee Department of Economic and Community Development
- Tennessee Department of Environment and Conservation
 - Division of Air Pollution Control
 - Division of Recreation Educational Services
 - Division of Water Pollution Control
 - Division of Natural Heritage
- Tennessee Department of Transportation
 - Environmental Planning and Permits Division
- Tennessee Historical Commission
- Tennessee Wildlife Resources Agency

County and Municipal Governments

- Chattanooga Councilman Dan B. Page
- Chattanooga-Hamilton County Planning and Design Studio
- Chattanooga-Hamilton County Regional Planning Agency
- Chattanooga Parks and Recreation Division
- City of Chattanooga Mayor Ron Littlefield
- City of Chattanooga – Storm Water
- Hamilton County Board of Commissioners
- Hamilton County Mayor Claude Ramsey

Tribes

Absentee Shawnee Tribe of Oklahoma
Alabama Coushatta Tribe of Texas
Alabama-Quassarte Tribal Town
Cherokee Nation
Chickasaw Nation
Choctaw Nation of Oklahoma
Eastern Band of Cherokee Indians
Eastern Shawnee Tribe of Oklahoma
Kialegee Tribal Town
Jena Band of Choctaw
Muscogee Creek Nation
Seminole Indian Tribe
Seminole Nation of Oklahoma
Shawnee Tribe
Thlopthlocco Tribal Town
United Keetoowah Band

Organizations

Chattanooga State Technical Community College
Chickamauga Lake Property Owners Association
Chickamauga Marina
Cumberland Trail Conference
Dade Water Watch
Electric Power Board of Chattanooga
Friends of Moccasin Bend
Friends of Mountain Creek
Kings Point Homeowners Association
Lula Lake Land Trust
Murray Hills Neighborhood Association
North Chickamauga Creek Conservancy
Outdoor Chattanooga Initiative
Save Our Cumberland Mountains
Scenic City Beautiful
South Chickamauga Creek Greenway Alliance
Southwings
STOP Toxic Pollution – Chattanooga Creek Greenway Alliance
Tennessee River Gorge Trust
Trust for Public Land
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CHAPTER 6

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**Appendix A – Description of Office Space Needed by TVA
for Full Occupancy by January 2011 in Chattanooga, Tennessee**

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Appendix A - Description of Office Space Needed by TVA for Full Occupancy by January 2011 in Chattanooga, Tennessee

The Tennessee Valley Authority (TVA) is reviewing the potential lease or purchase of approximately 600,000 square feet of contiguous rentable office space in Chattanooga, Tennessee. A campus-type development with individual buildings in close proximity will also be considered.

Two options are available to each respondent to the RFP (Respondent): Option 1, an existing or build-to-suit facility located within the city limits of Chattanooga, or Option 2, a build-to-suit facility located on TVA's Chickamauga Dam Reservation. A TVA decision to proceed with any option will be made only after satisfactory completion of required financial, technical, environmental, and management reviews. TVA is proposing to enter into a 20-year lease agreement but may consider purchase of the building as well.

If sufficient commercial parking is not available in close proximity, a separate parking garage or surface lots are acceptable methods of providing parking. The required parking spaces, including official spaces, shall be nontandem (not stacked) parking spaces, capable of accommodating full-size passenger vehicles and light trucks. Handicapped parking spaces will be provided for all parking areas in accordance with the American Disabilities Act Accessibility Guidelines in addition to state and local code.

The building will include four technical areas requiring specialty engineering consisting of:

1. Approximately 25,000 square feet
2. Approximately 14,000 square feet
3. Approximately 2,000 square feet
4. Approximately 6,500 square feet

The building will also include the four special purpose spaces:

1. Auditorium (approximately 6,000 square feet)
2. Approximately 9,500 square feet
3. Food Services (square footage to be determined).
4. Approximately 1,300 square feet

Assuming that a decision to proceed is reached in the RFP process, the facility shall be designed and constructed as prime "Class A" commercial office space with attractive, professional surroundings. Included in this classification of building type is Uniform Basic and Standard Building Code construction, Types I and II (noncombustible). This class is also referred to as a modified fire resistive or two-hour construction. Class "A" buildings are designed for good appearance, comfort, and convenience as well as the element of prestige. The quality of furnishings and fixtures is high and electrical outlets and services,

plumbing, etc., are above average. Ornamental treatment, trims, millwork, etc., are usually of a higher quality, and interiors are designed for upper class rentals. A prime example would be a corporate headquarters type building. The following building types are not acceptable examples for purposes of past performance and requirements: distribution, warehouse, manufacturing, or processing facilities; prisons, jails, correctional facilities, or detention centers; hospitals, residential projects (e.g., housing, hotels, dormitories, etc.) sports facilities, retail projects, or facilities constructed outside the Continental U.S.

TVA is committed to incorporating principles of sustainable design and energy efficiency into all of its building projects. The building must meet 10 CFR Part 434/435 and exemplify sustainable design practices as outlined in the Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding. Sustainable principles shall serve as the basis for planning, programming, budgeting, construction, commissioning, and operation of the new facility. Respondent shall incorporate energy and water efficiency and sustainable design in compliance with Executive Order 13423 and the Energy Policy Act of 1992 and 2005.

In addition to those federal requirements listed above, respondent shall comply with all other applicable city, state, and federal laws, codes, ordinances, rules, and regulations, and in the event of conflict thereof, the more stringent shall apply.

Appendix B – News Releases

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Chattanooga Office Space News Clips

Date	Headline	Outlet
03/19/2007	TVA Office Study available on the web	<i>Knoxville News-Sentinel</i>
03/08/2007	Paid advertisement	<i>Chattanooga Times Free Press</i>
03/07/2007	TVA eyes four sites for move	<i>Chattanooga Times Free Press</i>
03/06/2007	TVA considers alternatives for Chattanooga office space	<i>Chattanoogan.com</i>
01/23/2007	Cigna scans rent options	<i>Chattanooga Times Free Press</i>
01/14/2007	TVA looking for new office space in Chattanooga	WBIR-TV
01/13/2007	Associated Press - TVA may relocate Chattanooga office	<i>Knoxville News-Sentinel</i>
01/13/2007	TVA looking for new office space in Chattanooga	WMC-TV
01/12/2007	TVA eyes relocation of offices to cut rent	<i>Chattanooga Times Free Press</i>
01/12/2007	TVA looking for new office space in Chattanooga	WHNT-TV
12/28/2006	Office space to fill; city faces challenges, opportunities with looming glut	<i>Chattanooga Times Free Press</i>
08/24/2006	TVA considers building new facility as it haggles over rent in downtown complex	<i>Chattanooga Times Free Press</i>
08/08/2006	Editorial - TVA should stay downtown	<i>Chattanooga Times Free Press</i>
08/07/2006	TVA may vacate huge office space in Chattanooga	<i>Chattanoogan.com</i>
08/07/2006	What a TVA move could mean for downtown Chattanooga	WDEF-TV

March 8, 2007, Paid Advertisement in the *Chattanooga Times Free Press*



Chattanooga Office Space Alternatives

The Tennessee Valley Authority (TVA) is seeking to lease or purchase approximately 600,000 square feet of office space in the Chattanooga, Tennessee area, with a full occupancy date of January 1, 2011.

TVA is evaluating alternatives, including leasing appropriate existing space in the Chattanooga area, contracting construction of new office space on TVA property on the Chickamauga Dam Reservation, and contracting construction of new office space on non-TVA property in the Chattanooga area.

At this time, TVA does not have a preferred alternative.

TVA has released a draft Environmental Assessment (DEA) that analyzes potential impacts from the alternatives. The DEA is available at www.tva.com/environment/reports/COCspace/index.htm.

TVA is interested in your comments on the potential environmental impacts associated with the alternatives. These comments will be used to help TVA reach a decision.

All written comments on these alternatives must be received by close of business on Monday, March 26, 2007.

Comments should be submitted electronically at the above link, or by e-mail, fax, or mail to:

Tina Tomaszewski
Tennessee Valley Authority
1101 Market Street, Mailstop MR 2T
Chattanooga, TN 37402
E-mail: tvachattanoogaofficecomplex@tva.com
Fax: (423) 751-3230



Client: TVA Job Number: TVAC0167 AD: ma
Job Name: Chattanooga office space Publication: Chattanooga Times
Trim: 3.81" (3 col) x 7.5" Color: B&W

March 7, 2007, News Release in the *Chattanooga Times Free Press*



NEWS RELEASE

TVA Considers Alternatives for Chattanooga Office Space

CHATTANOOGA, Tenn. – TVA has completed a draft environmental assessment of potential impacts from various alternatives being considered for the lease or purchase of 600,000 square feet of office space in Chattanooga.

The alternatives include leasing appropriate existing space in the Chattanooga area, contracting construction of new office space on TVA property on the Chickamauga Dam Reservation, and contracting construction of new office space on non-TVA property in the Chattanooga area. TVA has not made a final decision at this time.

TVA continues to evaluate the alternatives as part of an effort to reduce its office space costs in Chattanooga significantly over the next few decades. TVA would occupy the office space on Jan. 1, 2011, when its current lease for space in the Chattanooga Office Complex expires.

TVA is interested in public comments on the draft environmental assessment and potential environmental impacts associated with the alternatives. The draft environmental assessment is available at www.tva.com/environment/reports/COCspace/index.htm

All written comments must be received by March 26. Comments may be submitted by mail to Tina Tomaszewski, 1101 Market St., MR 2T, Chattanooga, TN 37402; e-mail to tvachattanoogaofficecomplex@tva.com; or fax to (423) 751-3230.

Any comments received, including names and addresses, will become part of the administrative record and will be available for public inspection.

TVA is the nation's largest public power provider and is completely self financing. TVA provides power to large industries and 158 power distributors that serve approximately 8.7 million consumers in seven southeastern states. TVA also manages the Tennessee River and its tributaries to provide multiple benefits, including flood damage reduction, navigation, water quality and recreation.

#

Media Contact: John Moulton
TVA News Bureau, Knoxville, (865) 632-6000
www.tva.com/newsroom

(Distributed: March 6, 2007)

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Appendix C – Correspondence

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Jena Band of Choctaw Indians

P. O. Box 14 • Jena, Louisiana 71342-0014 • Phone: 318-992-2717 • Fax: 318-992-8244

January 5, 2007

Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902-1401

**RE: TVA, PROPOSED OFFICE SPACE, CULTURAL RESOURCES
ASSESSMENT, CHICKAMAUGA RESERVOIR, HAMILTON COUNTY,
TENNESSEE.**

To Whom It May Concern:

Reference is made to your letter dated December 21, 2006, concerning the above-proposed subject.

After thorough review of the documents submitted, it has been determined that there will be no significant impact in regards to the Jena Band of Choctaw Indians. We have no objections to its implementation. The Tribes areas of main concern are those projects that take place in Grant, LaSalle, and Rapides Parishes in Louisiana.

If I may be of any further assistance, please do not hesitate to call.

Sincerely,

A handwritten signature in cursive script that reads "Lillie Strange".

Lillie Strange
Environmental Director
Jena Band of Choctaw Indians
lstrangejbc@centurytel.net
318-992-8258



**United Keetoowah Band
Of Cherokee Indians in Oklahoma**

P.O. Box 746 • Tahlequah, OK 74465
2450 S. Muskogee • Tahlequah, OK 74464
Phone: (918) 431-1818 • Fax: (918) 431-1873
www.ukb-nsn.gov

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Saline District
- Barry Dotson
Sequoyah District
- Albert Shade
Tahlequah District

January 3, 2007

Ms. Pat Ezzell
Tennessee Valley Authority
400 West Summit hill Drive
Knoxville, TN 37902-1402

Dear Pat:

I am in receipt of your letter dated December 21, 2006, regarding TVA's proposed office space at Chickamauga Reservoir.

Of all the alternatives listed in the correspondence, Alternative 3 certainly seems the best and most appropriate for TVA. We have no objection to that alternative, but would like to see an agreement document established that would specify data recovery and mitigation plans should any inadvertent discoveries be encountered.

Please keep us informed on this project.

Best Regards,

Lisa C. Stopp
Acting Tribal Historic Preservation Officer



TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37213-0442
(615) 532-1550

January 11, 2007

Mr. Thomas O. Maher
Tennessee Valley Authority
400 West Summit Hill Dr.
Knoxville, Tennessee, 37902-1499

RE: TVA, OFFICE SPACE/CHICKAMAUGA RESERVOIR, UNINCORPORATED, HAMILTON COUNTY

Dear Mr. Maher:

In response to your request, received on Wednesday, January 3, 2007, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicant for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800. You may wish to familiarize yourself with these procedures (Federal Register, December 12, 2000, pages 77698-77739) if you are unsure about the Section 106 process. You may also find additional information concerning the Section 106 process and the Tennessee SHPO's documentation requirements at www.state.tn.us/environment/hist/sect106.htm.

Based on available information, we find that the undertaking as currently proposed may affect historic properties eligible for listing in the National Register of Historic Places. Alternative 1 will not affect any historic properties, Alternative 2 needs review for effect on historic properties, Alternative 3 has no effect on archaeological resources, and Alternative 4 needs review for effect on historic properties. We therefore recommend that your agency subject Alternatives 2 and 4 to additional Section 106 review should either be chosen as preferred alternative. Questions and comments may be directed to Joe Garrison (615) 532-1550-103. Your cooperation is appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard G. Tume".

Richard G. Tume
Deputy State Historic
Preservation Officer

RGT/jyg

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**Appendix D – Summary and Analysis of Comments on Draft EA
and TVA Responses**

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SUMMARY AND ANALYSIS OF COMMENTS RECEIVED ON DRAFT ENVIRONMENTAL ASSESSMENT AND TVA RESPONSES

Comments Supporting Alternatives

Comments Supporting Alternative 1: No Action Alternative, Continue to Lease Space in Existing COC, and Alternative 2: Lease Appropriate Existing Office Space

It doesn't seem logical to me to leave this huge complex empty while we build another. I just can't imagine that to be a practical answer. That will just add to all the other empty buildings in Chattanooga when Blue Cross moves to their new complex. Comment by: Jane A. Poole

Personally I would prefer to see TVA remain in the current office complex. I believe sustaining a viable downtown workforce is crucial to the long term growth and redevelopment of the Chattanooga urban core. Pulling such a large workforce from the urban core to possibly displace in suburban to exurban land use zones contradicts current land use plans defined by the Chattanooga – Hamilton County Regional Planning Agency and the citizens of Chattanooga. I fully endorse alternatives 1 or 2. Comment by Andrew Carroll, Vice President, Murray Hills Neighborhood Association.

The Chattanooga Area Chamber of Commerce recognizes that TVA is an anchor employer in Chattanooga's central business district and encourages TVA officials to pursue every opportunity to remain in the downtown area if that course of action is financially viable. Comment by: Trevor W. Hamilton, Chattanooga Area Chamber of Commerce

TVA Response: The TVA workforce represents only about 4% of the total downtown employment. The effects of moving this workforce are discussed in Section 3.1.2. Each of the alternatives under consideration by TVA is within the city limits of Chattanooga. At this time, TVA is still considering all four alternatives, and discussions with respondents to the RFP and the lessor of the COC remain ongoing. Should a decision ultimately be reached by TVA in favor of an alternative other than Alternative 1 or 2, TVA's Economic Development staff will remain available to assist city and area leaders explore viable opportunities for potential reutilization of the current COC space.

Comments Supporting Alternative 3: Construct New Office Space on TVA Property at Chickamauga Dam Reservation

The construction of a new COC at the Chick. Dam Reservation site is an EXCELLENT idea. A decision such as this would show the public and TVA employees that TVA officers are utilizing the resources currently available and not going into further debt. This project would also bring a much needed revenue into this part of the city with "other" types of support businesses in the area. The construction project meets the requirements of the TVA Act for bringing prosperity to the Valley and increases community development. The movement of the COC to the Chickamauga Dam area brings awareness to the important business support tasks currently being performed at the Power Service Shops, Central Labs, Chattanooga by each and every major organization at TVA. All are represented here, FPG, RSOE, TVAN, PSO, etc. Great idea. Comment by Joy Bull.

I think TVA should build office space on the dam reservation, on its own property and construct a building that can be added onto for future growth. The parking would be free for the employees or visitors that would use the facility. Comment by Fate E Evans.

I worked in the Office of Management Services or the General Managers Office during the period of the creation of the Chattanooga Complex. There was a clear need for consolidation of Chattanooga Offices in more desirable space. There were two added factors. Earlier plan had been to locate an office complex on the TVA dam reservation. However, Chattanooga down town businesses placed all kinds of pressure on locating down town as part of revival of the intercity and the Chairman of the TVA Board of Directors, Dave Freeman, was born and raised in Chattanooga and would like to leave his foot prints on the city. From a pure TVA economic stand point the site on the reservation had clearly the greatest advantage. Service providers would no doubt prefer a down town site due to location of hotel, . etc. Comment by John S. Bynon, Sr. Retired

As a resident of Hixson, the Alternative 3 makes the most economical and environmental sense for the following reasons: 1. The loss of business to local restaurants, stores, etc., will be compensated by the gain to businesses, such as, several restaurants in the Hixson area within 5-7 miles from the proposed complex and still be in the Chattanooga City tax base. 2. Northgate Mall, which is losing stores, will be revived. Major stores like Target, Super Wal-Mart, Belk, Sears, etc. will thrive with this location of the COC. 3. Many exercisers will not have to walk/run thro' congested downtown area during lunch. 4. A new Live Well complex should be a boon to employees and retirees many of whom live in the areas nearby. 5. It's time that TVA have its own complex instead of paying high rent in the downtown area. 6. The offices (for the senior executives) that overlook the river will be enthralling. 7. Parking will not cost for the employees, and will be plentiful. Comment by: Kunjitham G. Gauthaman

The Chamber also stands ready to work with TVA should it become necessary to relocate its Chattanooga area operations in accordance with one of the other options in Chattanooga as outlined in the Draft Environmental Assessment. Comment by: Trevor W. Hamilton, Chattanooga Area Chamber of Commerce

TVA Response: Comments noted.

Comments Supporting Alternative 4: Construct New Office Space on Non-TVA Property

If agreements over lease rates for the existing office location can not be reached, I suggest that TVA consider alternative 4 over alternative 3. I believe TVA can continue to serve a regional leadership role by demonstrating and acting upon principles of sustainability and smart growth in this very situation. I believe alternative 4 provides TVA with an opportunity to restore and enhance brownfield areas within the urban core of Chattanooga.

This alternative more closely follows the concepts of smart-growth and could provide TVA with an excellent opportunity to demonstrate green-building technologies on a former industrial brownfield site. This location also serves as the western gateway to Chattanooga, would be located directly across the river from a new National Park, adjacent to scenic viewsheds of historic Lookout Mountain, and potentially serve as a hub in the linkage of

pathways, bike routes, and greenways currently proposed for the Southside of Chattanooga. Rather than eliminating additional Greenfield/openspace, TVA should work closely with the responsible parties, TN State Remediation Program, and the City of Chattanooga to reuse the vacant lands located within the Chattanooga urban core. Comment by Andrew Carroll, Vice President, Murray Hills Neighborhood Association.

The Chamber also stands ready to work with TVA should it become necessary to relocate its Chattanooga area operations in accordance with one of the other options in Chattanooga as outlined in the Draft Environmental Assessment. Comment by: Trevor W. Hamilton, Chattanooga Area Chamber of Commerce

TVA Response: Comments noted.

Comments Opposing Alternatives

Comments Opposing Alternative 1: No Action Alternative, Continue to Lease Space in Existing COC

I worked in the Office of Management Services or the General Managers Office during the period of the creation of the Chattanooga Complex.... From a pure TVA economic stand point the site on the reservation had clearly the greatest advantage. Comment by John S. Bynon, Sr. Retired

It's time that TVA have its own complex instead of paying high rent in the downtown area.... Comments by: Kunjitham G. Gauthaman

TVA Response: Comments noted.

Comments Opposing Alternative 3: Construct New Office Space on TVA Property at Chickamauga Dam Reservation

Lastly, growing up next to the alternative 3 site in the Murray Hills, I spent countless hours of my youth exploring the riparian buffers, backwaters, and slopes surrounding this entire property, including the US Coast Guard Base. My fascination with the natural environment was fostered by long summer days of catching turtles, watching red-tailed hawks dive from the sky into power line cuts for rabbits, tracking deer prints along the winter shorelines, or watching wintering bald eagles glide from the tall pines. While the EA has produced no T&E species in the alternative 3 area I believe this area serves as an important urban wildlife reservoir. I have personally observed or tracked deer, wild turkey, great-horned owls, bald eagles, raccoons, red fox, grey fox, and varieties of hawks just to name a few in the alternative 3 vicinity.

Over the past 5 years, approximately 147 acres of open space in this region, between the Webb Road to the east and the Chickamauga Marina, have been developed or are actively being developed into residential, and multi-family residential uses. These developments, Cross Creek Apartments, and Windward Point Phase I, II, and III, have cleared or will clear all permissible habitat allowed under Phase II NPDES permits at each location. This loss of

natural connectivity and forested habitat occurs in an area designated for high ecological corridor linkage value in the 2002 EPA Region IV Southeastern Ecological Framework report and an area classified as a conservation lands in the 2002 Highway 58 Land Use Plan. As vice-president of the Murray Hills Neighborhood Association (alternative 3's next door neighbors an active participant in the community planning processes) I would hate to see such efforts and community voices completely ignored.

Again, I believe alternatives 1 or 2 best serve the public interest, with alternative 4 coming in above the loss of open space and greenfields.

Comment by Andrew Carroll, Vice President, Murray Hills Neighborhood Association.

TVA Response:

TVA recognizes the importance of riparian areas as wildlife habitat and as corridors for wildlife movement, as well as their value in protecting water quality. In order to minimize potential effects on this important riparian corridor if Alternative 3 is chosen, TVA would establish an undeveloped buffer between the proposed office complex and Chickamauga Reservoir (Tennessee River). The buffer will be 200-feet wide at a minimum, and would in some areas extend 400 feet inland from the edge of the reservoir. Establishment of this buffer is consistent with recent research regarding buffer zone sizes for maintenance of biological diversity for wetland and riparian habitats, and exceeds minimum recommendations. Forest habitats in the upland areas that would be impacted under this alternative consisted mainly of pine plantations, which have been harvested in a salvage operation following their infestation by southern pine beetles, and are already significantly altered from their natural condition.

The referenced 2002 Highway 58 Land Use Plan was prepared by the Chattanooga-Hamilton County Regional Planning Agency (CHCRPA, 2002). It identifies the proposed Alternative 3 site as "Parks/Open Spaces/Recreation," and development of an office complex on the site would not be fully consistent with this designation. However, the proposed office complex would have a footprint of 30 acres or less, and TVA's Chickamauga Dam Reservation is approximately 1,000 acres. Converting the 30 acres to an office complex would affect only 3% of the reservation. As discussed in Section 3.7.2, this area presently receives a low level of recreational use and the campus-like setting of the proposed office complex could increase recreational use, especially if TVA provides walking and jogging trails in connection with the office complex as it has at other TVA facilities.

Other Comments

A few of TVA employees recommended that TVA promote telecommuting in order to reduce the size of the proposed office complex. Comments by David L. Harris and Elisha Hampton McFarland, Jr ,

TVA Response

TVA has evaluated the merits of telecommuting and has allowed this in some situations. Based on this experience, telecommuting might be feasible for some staffs and could reduce the office space needs of those staffs, but the amount of any such reduction is uncertain. The feasibility of telecommuting depends on a number of variables including the

kind of work staffs do, the relationship of a staff to other staffs, and the willingness and capability of individual employees to telecommute.

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Appendix E – Natural Heritage

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TERRESTRIAL ECOLOGY

Plants

The city of Chattanooga area is in the Southern Limestone/Dolomite Valleys and Low Rolling Hills Ecoregion, which is a heterogeneous region, composed predominantly of limestone and cherty dolomite. Landforms are mostly undulating valleys and rounded ridges and hills, with many caves and springs. Soils vary in their productivity, and land cover includes oak-hickory and oak-pine forests, pasture, intensive agriculture, and urban and industrial (USEPA 2007).

Remaining in the existing COC (Alternative 1) or relocating to other existing office space in the city of Chattanooga (Alternative 2) should have no impact on terrestrial ecology, since the locations have previously undergone development and removal of any terrestrial resources.

A field survey of the proposed project site considered under Alternative 3 was conducted on October 6, 2006. The site is crossed by an existing transmission line right-of-way and contains areas of young forest. Existing plant communities include herbaceous vegetation, deciduous forests, and mixed evergreen-deciduous forests. The total acreage of the proposed office complex is approximately 30 acres.

Approximately 8 percent of the proposed office complex site is herbaceous vegetation found in the existing right-of-way. The most common species found are Canada goldenrod, Chinese lespedeza, gray goldenrod, Japanese honeysuckle, late purple aster, narrowleaf silk grass, plume grass, rabbit tobacco, swamp sunflower, tall thoroughwort, and velvet panicum.

The deciduous forest accounts for approximately 90 percent of the proposed project area. The canopy is dominated by black cherry, black oak, red maple, sugar maple, tulip poplar, white oak, and white pine, while the subcanopy consists of bitternut hickory, Carolina buckthorn, and dogwood. The shrub layer includes bush honeysuckle, Chinese privet, and lowbush blueberry. Common vines include Japanese honeysuckle, muscadine, poison ivy, and the herbaceous cover includes Christmas fern and ebony spleenwort.

The mixed evergreen-deciduous forest, or oak-pine forest, accounts for approximately 2 percent of the potential project area. The canopy is dominated by black oak, loblolly pine, red maple, white oak, and white pine, while the subcanopy consists of dogwood. The shrub layer is comprised of Chinese privet and heavenly bamboo. Common vines found are cat greenbrier and Japanese honeysuckle. Herbaceous species are scattered and are mostly Christmas fern and ebony spleenwort.

The plant communities observed within the proposed potential office complex are common, and all are representative of the region.

Invasive Terrestrial Plant Species

There are no invasive species in the existing COC office space (Alternative 1) and none anticipated to be in other existing office space in the city (Alternative 2).

Invasive exotic plant species encountered within the Alternative 3 project area include bush honeysuckle, Chinese privet, heavenly bamboo, Japanese honeysuckle, and sericea

lespedeza. All of these species have the potential to impact the native plant communities adversely because of their potential to spread rapidly and displace native vegetation. One hundred percent of the proposed Alternative 3 project is on land in which the native vegetation has been extensively altered as a result of previous land-use history (e.g., timber harvesting, right-of-way construction and maintenance). Most of these invasive species are Rank 1 (severe threat) and are of high priority to TVA (James 2002), except for the heavenly bamboo.

Animals

Habitats observed within the proposed Alternative 3 office complex site include approximately 95 percent second-growth deciduous forest interspersed with dense privet thickets and approximately five percent early successional habitats. Adjacent to the second-growth forest and just outside of the proposed office complex site boundary is a small, isolated fragment of mature deciduous forest. Early successional habitat includes 0.3 mile of maintained transmission line rights-of-way.

Breeding birds commonly found in second growth deciduous forest include Carolina wren, gray catbird, brown thrasher, white-eyed vireo, northern cardinal, indigo bunting, various sparrows, and many other common songbirds. Common reptiles and amphibians in these areas include eastern worm snake, ring-necked snake, black rat snake, eastern hog-nosed snake, common kingsnake, rough green snake, milksnake, Dekay's brown snake, red-bellied snake, southeastern crowned snake and slimy salamander. Common mammals found in second-growth deciduous forest include gray squirrel, striped skunk, white-tailed deer, Virginia opossum, and various rodents.

Breeding birds found in maintained rights-of-ways include Carolina wren, white-eyed vireo, indigo bunting, field sparrow, eastern towhee and other common birds. No amphibians are expected in the dry upland maintained rights-of-way within the proposed Alternative 3 office complex site. Reptiles common in early successional habitats include racers, black rat snake, and common garter snake. Mammals found in early successional habitats include eastern cottontail, hispid cotton rat, meadow vole, and white-tailed deer.

Unique and important terrestrial habitats, such as heronries and caves, were also searched for during field investigations. The TVA Natural Heritage database has no records of caves within 3 miles of the proposed office complex site. Three great blue heron colonies have been reported from the project area. One small colony was found during field investigations approximately 250 feet from the proposed office complex site. This colony contains five great blue heron nests in a single loblolly pine.

Three heron colonies are known to occur within 3 miles of the proposed office complex site. Two of these colonies are greater than 0.5 mile from the project area and are at adequate distances from proposed office complex site. The third colony consists of five nests and is located approximately 250 feet from the proposed office complex site.

THREATENED AND ENDANGERED PLANTS

There are no threatened or endangered plants or animals that would be impacted by utilizing the COC (Alternative 1) or other existing office space within the city (Alternative 2).

A review of the TVA Regional Natural Heritage database indicates there are one federally listed (*Scutellaria montana*) and three state-listed plant species known within 5 miles of the

Alternative 3 project site (Table E-1). Two additional federally listed species and one candidate species are reported from Hamilton County, Tennessee.

During the field survey of the Alternative 3 site conducted in October 2006, no federally or state-listed plant species or habitat for these species were present on lands that would be affected by the proposed potential project. No designated critical plant habitat is located within the proposed project area

Table E-1. Endangered, Threatened, and Other Plant Species of Conservation Concern Known From the Hamilton County, Tennessee, Project Area

Common Name	Scientific Name	Federal Status	Tennessee State Rank/Status
American ginseng	<i>Panax quinquefolius</i>	--	S-CE (S3S4)
Creekgrass	<i>Potamogeton epihydrus</i>	--	SPCO (S1S2)
Large-flowered skullcap	<i>Scutellaria montana</i>	THR	THR (S2)
Monkey-face orchid	<i>Platanthera integrilabia</i>	CAND	END (S2S3)
Small whorled pogonia	<i>Isotria medeoloides</i>	THR	END (S1)
Virginia spiraea	<i>Spiraea virginiana</i>	THR	END (S2)
Yellow jasmine	<i>Gelsemium sempervirens</i>	--	SPCO (S1S2)

Status abbreviations: S-CE = Special Concern-Commercially Exploited, SPCO = Special Concern, THR = Threatened, END = Endangered, CAND = Candidate for listing.

S1 - critically imperiled with 5 or fewer occurrences; S2 – imperiled with 6 to 20 occurrences; S3 – rare or uncommon with 21 to 100 occurrences; S4 – widespread, abundant, and apparently secure with more than 101 occurrences.

THREATENED AND ENDANGERED ANIMALS

Aquatic Animals

A review of the TVA Natural Heritage database (2007) indicated that two federally listed as endangered, one federally listed as threatened, and two state-listed aquatic species are known to occur in Hamilton County, TN (Table E-2). However, only three of these species: the pink mucket, the orange-foot pimpleback, and the snail darter are known to occur in the Tennessee River within a 10-mile radius of the Alternative 3 site at the TVA Chickamauga Dam Reservation. One historic occurrence of the pink mucket is known several miles upstream of the proposed Alternative 3 site. However, impoundment of Chickamauga Reservoir has eliminated suitable habitat for pink mucket within the area potentially affected by this project. Orange-foot pimpleback and snail darter are present in the Chickamauga Dam tailwater, but neither of these species is reported from upstream of the dam. Although, Chickamauga crayfish and the highfin carpsucker are known from Hamilton County, Tennessee, there are no known occurrences within the potentially affected watershed.

Table E-2. Federally Listed and State-Listed Aquatic Animals Known to Occur in Hamilton County, Tennessee

Common Name	Scientific Name	Federal Status	State Status
Fish			
Highfin carpsucker	<i>Carpodes velifer</i>	-	NMGT (S2S3)
Snail darter*	<i>Percina tanasi</i>	THR	THR (S2S3)
Mussels			
Orange-foot pimpleback*	<i>Plethobasus cooperianus</i>	END	END (S1)
Pink mucket*	<i>Lampsilis abrupta</i>	END	END (S2)
Crayfish			
Chickamauga crayfish	<i>Cambarus extraneus</i>	-	THR (S1S2)

Status Codes: END = Endangered; NMGT = In Need of Management; THR = Threatened.

State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable

*Species known to occur in potentially affected watersheds within a 10-mile radius of the project

Species Accounts for Species of Federal Concern

Fish

Snail Darter occurs, at present, in the upper Tennessee River system in the mainstem of the Tennessee River and the lower sections of the Hiwassee, French Broad, Holston, Sequatchie, and Paint Rock Rivers, as well as South Chickamauga Creek, Big Sewee Creek, and the Little River (Natureserve 2007). The snail darter occurs in larger creeks inhabiting sand and gravel shoal areas, and in deeper rivers and reservoirs where current is present. Etnier & Starnes (1993) reports that impoundment in the Tennessee Valley has fragmented much of the snail darters range.

Mussels

Orangefoot Pimpleback is thought, at present, to be restricted to the lower Ohio River, middle reaches of the Cumberland River and the lower Tennessee River in northern Alabama and western Tennessee (NatureServe 2007). Generally, the orangefoot pimpleback is a big river species with reports of individuals being found at 12 to 18 feet (Parmalee 1998). The major threats to this species are continued human modification of large rivers (NatureServe 2007).

Pink Mucket was formerly scattered throughout the Mississippi, Tennessee, Cumberland, and Ohio River drainages (NatureServe 2007). It is typically a big river species found on rocky bottoms with swift current in depths up to three feet (Parmalee 1998) as well as deeper waters with sandy/gravel substrate (NatureServe 2007). Reasons for decline of the pink mucket include modification of habitat, water quality degradation, and over-harvesting by commercial anglers.

Because no state-listed or federally listed aquatic animals are known to occur in the Tennessee River upstream of Chickamauga Dam, no direct or indirect impacts would occur to these species as a result of construction on this tract. Application of BMPs and permit requirements during construction would ensure that no impacts to water quality in the Tennessee River would occur. There would be no cumulative impacts to listed species as a result of Alternative 3.

Terrestrial Animals

No federally or state-listed terrestrial animal species were observed during 2006 field investigations of proposed Alternative 3. A review of the TVA Natural Heritage database during December 2006 indicated that one federally listed species is reported from Hamilton County, Tennessee, and six state-listed species reported from within 3 miles of the project (Table E-3). One additional species considered uncommon by the Tennessee Natural Heritage Program, but without official status in the state, is known from the region.

Table E-3. Endangered, Threatened, and Other Species of Conservation Concern Known From the Hamilton County, Tennessee, Project Area

Common Name	Scientific Name	Federal Status	State Status
Birds			
Bachman's Sparrow	<i>Aimophila aestivalis</i>	--	END (S2)
Bald eagle	<i>Haliaeetus leucocephalus</i>	THR	NMGT (S3)
Barn owl	<i>Tyto alba</i>	--	NMGT (S3)
King rail	<i>Rallus elegans</i>	--	NMGT (S2)
Least bittern	<i>Ixobrychus exilis</i>	--	NMGT (S2)
Peregrine falcon	<i>Falco peregrinus</i>	--	END (S1)
Sharp-shinned hawk	<i>Accipiter striatus</i>	--	NMGT (S3)
Virginia rail	<i>Rallus limicola</i>	--	NOST (S1)

Status codes: END = Endangered; THR = Threatened; NMGT = In Need of Management; NOST = Tracked but not State-Listed; S1 = Extremely Rare; S2 = Imperiled; S3 = Rare or Uncommon; B = Breeds in Tennessee; N = Nonbreeding in Tennessee

Birds

Bachman's sparrows nest in oak or pine savannahs, (forested habitat with an open understory), and occasionally old-field habitat. Suitable habitat for this species does not exist within the proposed site.

Bald eagles typically nest near large bodies of waters including lakes, rivers, and riparian wetlands. Their numbers were greatly reduced in the Valley in the mid-1900s due to the use of dichlorodiphenyltrichloroethane and direct persecution. In recent years, bald eagle numbers have greatly increased throughout the Valley. Nesting and post-breeding bald eagles are regularly observed throughout the reservoir system. They are known to nest and winter within Hamilton County. The closest nest is approximately 5 miles from the proposed office complex site. Low-quality nest trees exist just outside the northern boundary of the proposed office complex site.

Barn owls nest in cavities including caves, bluffs, hollow trees, barns, and other abandoned structures. They forage over open landscape such as abandoned farmland, but also in urban habitat such as vacant lots, cemeteries, and parks (Nicholson 1997). No nest or foraging habitat exists within the proposed office complex site.

King rails nest in marshes with shallow water and emergent vegetation such as rushes, sedges, cattails, and grasses (Eddleman et al. 1988). No king rail habitat exists within the proposed office complex site.

Least bitterns inhabit marshes with tall, emergent vegetation bordering open water up to a meter or more deep (Weller 1961). No least bittern habitat exists within the proposed office complex site.

Peregrine falcons are a very rare breeding bird in Tennessee. These birds nest on cliff ledges, bridges, tall buildings, and occasionally in trees. Peregrine falcons currently nest on a bridge approximately 1 mile from the proposed office complex site. This pair is one of three known breeding pairs in Tennessee.

Sharp-shinned hawks nest in pine and pine/hardwood forests. This hawk usually nests in pine trees (Wiggers and Kritz 1991). Nesting habitat exists adjacent to the proposed office complex site but not within the site.

Virginia rails nest in marshes with emergent vegetation such as cattails, sedges, and rushes. No Virginia rail habitat exists within the proposed office complex site.

NATURAL AREAS

Under Alternative 3, a review of data from the TVA Natural Heritage database indicated that nine natural areas and one ecologically significant site are within a 3-mile radius of the city of Chattanooga.

- **Big Ridge TVA Habitat Protection Area (HPA) and Small Wild Area (SWA)** is 0.7 mile northwest of and across the Tennessee River from the proposed action. This 207-acre tract is covered by an old-growth oak-hickory forest and supports populations of large-flowered skullcap (*Scutellaria montana*), a federally listed as threatened species.
- **Nickajack Reservoir State Mussel Sanctuary** is 0.8 mile northwest of the proposed action. The section of the Tennessee River (Nickajack Reservoir) between TRMs 465.9 and 471 at Chickamauga Dam, is designated a sanctuary by the Tennessee Wildlife Resources Agency (TWRA), which prohibits the taking of aquatic mollusks by any means and/or the destruction of their habitat.
- **North Chickamauga Creek Greenway** is 1 mile northwest of the proposed action. This 40-acre linear recreation area runs along North Chickamauga Creek and is adjacent to TVA's Big Ridge HPA/SWA and Greenway Farm. It is managed by the City of Chattanooga.
- **Greenway Farm** is 1.4 miles north of the proposed action. Managed by the City of Chattanooga, the 180-acre site is used for environmental education and consists of open fields, a large quarry, woods, and greenway extension.
- **Booker T. Washington State Recreation Park** is 1.6 miles northeast of the proposed action. Managed by the Tennessee Department of Environment and Conservation, the 353-acre park on Chickamauga Reservoir offers water- and land-bird observation, swimming, picnicking, boating, fishing, and other general recreational activities.

- **Chickamauga and Chattanooga National Military Park** is 1.8 miles southwest of the proposed action. Managed by the U.S. National Park Service, it was the nation's first designated national military park, established in 1890 to honor Civil War soldiers who fought in the area. Covering over 8,200 acres along the Georgia/Tennessee border, some of the park's offerings include visitor centers, lodging and camping facilities, museum exhibits, trails, walking and car tours, living history demonstrations, special events and programs, and bird migration observation near Craven's House on Lookout Mountain. A 230-acre national environmental study area is part of this military park.
- **Fairview Slopes TVA HPA** is 2.2 miles northeast of the proposed action. The three tracts comprising this 145-acre HPA are dominated by an oak-hickory forest and support populations of *Scutellaria montana*. This area has been used as a roosting site by wintering bald eagles.
- **Rivermont Park** is 2.3 miles northwest of the proposed action. Managed by the City of Chattanooga, this 61-acre park offers picnic pavilions, shelters, a walking trail, tennis courts, and a boat ramp.
- **Three B TVA HPA** is 2.7 miles northeast of the proposed action. This 44-acre tract supports a small population of *Scutellaria montana*.
- **Amnicola Marsh Potential National Natural Landmark (NNL)** is 2.9 miles southwest of the proposed action. This 154-acre ecologically significant site is a natural freshwater marsh near the Tennessee River. It provides habitat and a feeding area for several bird species. A 55-acre portion of the marsh was acquired by TWRA in the mid-80s. The NNL program was established in the 1970s by the U.S. National Park Service to identify nationally significant examples of ecologically pristine or near pristine landscapes. This tract, while meeting the criteria for listing, has not yet been registered as an NNL.

Under Alternative 4, a review of data from the TVA Natural Heritage database indicated that the proposed action is not within, adjacent to, or within 0.5 mile of a natural area or ecologically significant site. Eight managed areas and/or ecologically significant sites are within a 3-mile radius of the proposed action.

- **Chickamauga and Chattanooga National Military Park** is approximately 1.2 miles southwest of the proposed action. Managed by the U.S. National Park Service, it was the nation's first designated national military park, established in 1890 to honor Civil War soldiers who fought in the area. Covering over 8,200 acres along the Georgia/Tennessee border, some of the park's offerings include visitor centers, lodging and camping facilities, museum exhibits, trails, walking and car tours, living history demonstrations, special events and programs, and bird migration observation near Craven's House on Lookout Mountain. A 230-acre national environmental study area is part of this military park.
- **Lookout Mountain Cave Protection Planning Site and The Nature Conservancy Site** is approximately 1.3 miles southwest of the proposed action. The cave, accessed through Ruby Falls, is suitable habitat for the Tennessee cave salamander.
- **The University of Tennessee – Chattanooga Campus**, part of the University of Tennessee's system of statewide campuses, is approximately 1.5 miles northeast of the proposed action.

- **Ross's Landing City Park**, approximately 1.7 miles north of the proposed action and located across from the Tennessee Aquarium on Nickajack Reservoir, is managed by the City of Chattanooga for public use. The park features a river pier, marina, natural amphitheatre, and a greenway.
- **Maclellan Island Audubon Society Wildlife Refuge**, approximately 1.9 miles northeast of the proposed action, is a 19-acre island in the Tennessee River near downtown Chattanooga. The bird sanctuary is managed by Chattanooga's Audubon Society. It is the site of a great blue heron nesting colony.
- **Williams Island State Archaeological Area**, approximately 1.9 miles northwest of the proposed action, is a 452-acre oblong-shaped island in Nickajack Reservoir managed by the Tennessee River Gorge Trust. Along with its significant archaeological resources, the island features a mosaic of farmland, wetlands, and forested lowlands.
- **Tennessee Wildlife Center**, a private wildlife sanctuary on 300 acres and also referred to as Reflection Riding, is approximately 2.8 miles southwest of the proposed action. The site features an arboretum and botanical garden, miles of trails and open spaces with views of Lookout and Raccoon Mountains, and historic features including Indian trails and Civil War sites.
- **Nickajack Reservoir State Mussel Sanctuary** is approximately 3.0 miles northeast of the proposed action. The section of the Tennessee River (Nickajack Reservoir) between TRMs 465.9 and 471 at Chickamauga Dam, is designated a sanctuary by the TWRA, which prohibits the taking of aquatic mollusks by any means and/or the destruction of their habitat.

No Nationwide Rivers Inventory streams and no Wild and Scenic Rivers are in the vicinity of Chattanooga or the proposed alternatives.