Document Type: EA-Administrative Record
Index Field: Environmental Assessment
Project Name: Knoxville Parking Garage
Project Number: 2012-23

KNOXVILLE PARKING GARAGE
ENVIRONMENTAL ASSESSMENT
Knox County, Tennessee

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Knoxville, Tennessee

Cooperating Agency:
CITY OF KNOXVILLE

September 2012

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Symbols, Acronyms, and Abbreviations

µg/m^3	Micrograms Per Cubic Meter
§	Section
AADT	Annual Average Daily Traffic
ACM	Asbestos-Containing Material
APE	Area of Potential Effects
BMP	Best Management Practice
CFR	Code of Federal Regulations
City	City of Knoxville
CO	Carbon Monoxide
dBA	A-Weighted Decibel
DNL	Day/Night Sound Levels
EA	Environmental Assessment
ESA	Environmental Site Assessment
ES&H	Environmental, Safety & Health, Inc.
ft^2	square feet
I	Interstate
KOC	Knoxville Office Complex
LOS	Level of Service
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NCA	Noise Control Act
NEPA	National Environmental Policy Act
NO_2	Nitrogen Dioxide
NOx	nitrogen oxide
NRHP	National Register of Historical Places
O_3	Ozone
OSHA	Occupational Safety and Health Administration
Pb	Lead
PCB	Polychlorinated Biphenyl
$PM_{2.5}$	Particulate Matter Having a Diameter of Less Than 2.5 Microns
PM_{10}	Particulate Matter Having a Diameter of Less Than 10 Microns
ppb	Parts Per Billion
ppm	Parts Per Million
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	sulfur dioxide
SWPPP	Storm Water Pollution Prevention Plan
THC	Tennessee Historic Commission
TPO	Transportation Planning Organization
TVA	Tennessee Valley Authority
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

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CHAPTER 1 – PURPOSE AND NEED FOR ACTION

The Tennessee Valley Authority (TVA) proposes to construct a parking garage in downtown Knoxville, Tennessee. The project site is in the city block bounded by Walnut Street, Union Avenue, Locust Street, and Summer Place (Figure 1-1). The garage would occupy the northern portion of this block. The 1.1-acre project site is presently occupied by the vacant Liberty Building, a surface parking lot, and an open disturbed area where a demolished building once stood. The garage would accommodate 800 to 1,000 parking spaces in a six-story or seven-story tall structure (approximately 60 to 70 feet tall).

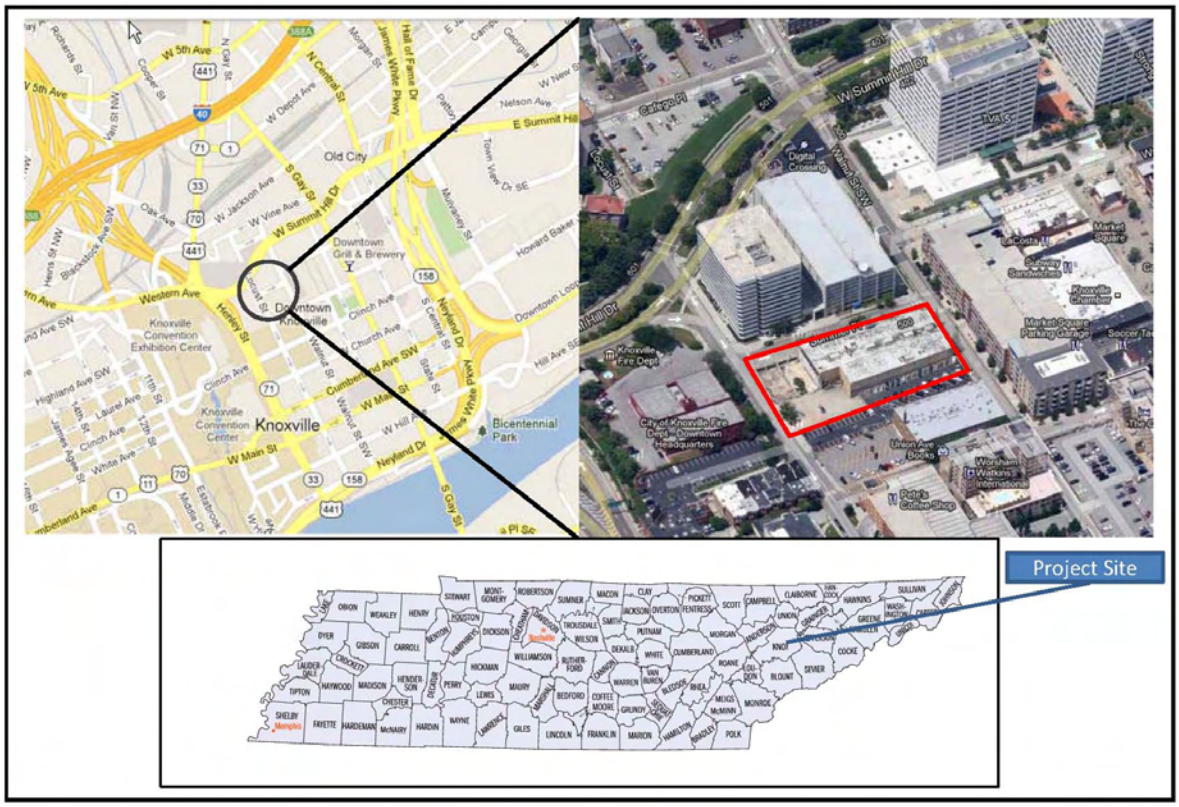

Figure 1-1 Vicinity Map of Proposed Parking Garage

TVA and the City of Knoxville (City) have entered into a conditional Memorandum of Understanding (MOU) for the proposed project. Under the terms of the MOU, the City would purchase the site of the proposed garage and prepare the site for construction. Site preparation would include demolition and removal of the existing Liberty Building, completion of necessary environmental remediation, and completion of any necessary utility and infrastructure changes, improvements, and/or relocations. At this time, the City has not identified the need for utility relocations. Following the completion of these activities, the City would transfer the site to TVA in fee simple interest. TVA would then fund, design, build, own, and operate the parking garage for the use and benefit of TVA employees, tenants of TVA's Knoxville Office Complex (KOC) East Tower, and visitors to downtown Knoxville.

The parking garage would help meet TVA's need for additional parking near its KOC for TVA employees, TVA visitors, and future occupants of TVA's East Tower office space. The garage would also help meet the City's need for more weekend, after hours, and holiday downtown visitor parking spaces. Under the terms of the MOU, TVA would make parking spaces available to the public during evenings, weekends, and holidays in accordance with the City's current free nights/weekends parking program. TVA would retain approximately 100 permanent parking spaces that would not be available as part of the City's parking program.

TVA prepared this environmental assessment (EA) of the proposed parking garage in accordance with the National Environmental Policy Act (NEPA) and its implementing procedures. The City is a cooperating agency in this effort.

1.1 Background

TVA currently has approximately 900 employees working in its KOC. The majority of these employees are in the KOC West Tower. They park at various locations around the KOC, including City and private parking garages and surface parking lots. Some of these employees utilize the City's public transportation system, Knoxville Area Transit, rather than personal vehicles for commuting. TVA is currently searching for a tenant or tenants to occupy its East Tower which can hold up to 1,000 employees. Approximately 2,000 employees could be present if both towers of the KOC were occupied at 100 percent capacity.

In 2004, the Knoxville Regional Transportation Planning Organization (TPO) prepared the *Downtown Parking Study Update*. The study considered the parking available in the recently completed Locust Street garage and the proposed Market Square garage. The study showed that the north end of downtown experiences a deficit in parking while the south end has excess parking (TPO 2004). Specifically, the study determined the area around Market Square, the KOC, Maplehurst, the north end of Gay Street and the Old City show a need for additional parking to fulfill increased demand.

1.2 Other Environmental Reviews and Documentation

In July 2012, a Phase I Environmental Site Assessment (ESA) (Environmental, Safety & Health, Inc. [ES&H] 2012) was completed for the project site. Phase I ESAs are conducted when acquiring sites to evaluate the historical use of the site and to determine if there is a potential for hazardous materials use and/or release from the site. The purpose of the Phase I ESA is to identify, to the extent feasible, recognized potential environmental conditions in association with the property. Environmental conditions include the presence or likely presence of any hazardous substances or petroleum products on a property that indicate an existing release, past release, or a material threat of a release of any hazardous substances or petroleum projects into structures on the property or into the ground, groundwater, or surface water of the property.

The ESA was performed by ES&H in accordance with Standard Designation E 1527-05 of the American Society of Testing and Materials. The Phase I ESA results identified evidence of current hazardous substances and petroleum products in the Liberty Building. These findings are discussed in more detail in Section 3.4 of this document.

In August 2012, a geotechnical exploration report was completed for the project site (S&ME 2012b). The report was prepared to characterize site subsurface conditions and provide recommendations regarding foundation design and other related construction information. These findings are discussed in more detail in Section 3.1 of this document.

1.3 Decision to be Made

The primary decision before TVA is whether to construct and operate a parking garage at the proposed project site in Knoxville, Tennessee. The City would not proceed with the purchase of the property if TVA decides not to implement the proposed action.

1.4 Scoping and Public Involvement

1.4.1 TVA Public Scoping

A public scoping notice was placed on TVA's website (http://www.tva.gov/environment/reports/knoxville_parking_garage/index.htm) and an article was published in the Knoxville News Sentinel to solicit public comments on its proposed action to construct and operate the proposed parking garage (Appendix A). Additionally, TVA posted signs on the property announcing the opportunity for public scoping involvement and soliciting comments on the proposal (Appendix A). TVA requested that the public submit comments by July 25, 2012.

TVA received 42 comment submissions on the proposed action through an online comment form and emails. Most of the respondents expressed concern over TVA's purpose and need for the proposal, stating that there was enough parking downtown and another parking garage was not needed. These same respondents requested that if a parking garage were to be built, that the City of Knoxville's Design Guidelines should be followed to accommodate street level commercial and retail uses. However, some respondents felt that a design that could later accommodate future commercial uses would still not fulfill the City's immediate goal of attracting more people downtown. Some respondents expressed concern that if no commercial and residential uses were incorporated into the design, then the parking garage would create a 'pedestrian deadzone' in this area of Knoxville. Many respondents pointed out that such a 'deadzone' would limit the smart growth of the City.

Respondents also suggested that TVA use eco-friendly or 'green' building principles and emphasize the local culture in the design of the structure. Some of these ideas included the use of vertical 'green' walls, solar panels, advanced energy-efficient technologies and a rooftop community garden. One respondent mentioned the need to analyze the potential transportation impacts of the proposed garage on the road network surrounding the project site.

1.4.2 Identification of Relevant Environmental Issues

TVA conducted a preliminary internal review by a network of designated environmental specialists. Based on public scoping comments and its internal scoping, TVA determined that the following resources could be potentially affected by the proposed action and are addressed in this EA:

- Cultural Resources
- Transportation
- Air Quality
- Noise
- Socioeconomics and Environmental Justice
- Land Use
- Solid and Hazardous Waste
- Visual Resources
- Geology

Potential effects related to water quality; recreation; wetlands; floodplains; biological resources, including endangered and threatened species; prime farmland; health and safety; and global climate change were also considered. However, potential effects were found to be absent or minor and these resources do not require further evaluation.

1.5 Necessary Permits or Licenses

During site preparation activities and removal of the Liberty Building, Tennessee Department of Environment and Conservation special waste disposal permits for disposal of asbestos would be needed. Although it is not subject to City of Knoxville Building Permit requirements, TVA would adhere to these requirements during the design and construction of the parking garage.

A Tennessee General National Pollutant Discharge Elimination System Permit for discharges of storm water associated with site preparation and construction activities and a Storm Water Pollution Prevention Plan (SWPPP) would be required. Construction Best Management Practices (BMPs) to minimize impacts to water quality would be outlined in the SWPPP. TVA's construction contractors would prepare the required erosion and sediment control plans and coordinate them with the appropriate state and local authorities.

CHAPTER 2 - ALTERNATIVES

A description of the proposed action and its alternatives, together with a brief comparison of their environmental effects, are contained in this chapter.

2.1 Description of Alternatives

Based on preliminary internal scoping, TVA determined that from the standpoint of NEPA, two alternatives are available. These are Alternative A (the No Action Alternative) and Alternative B (the Proposed Action Alternative).

2.1.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not construct and operate the parking garage. The City would not purchase the property and perform site preparation, including the removal of the Liberty Building. The site of the proposed parking garage would likely remain in its current condition until an alternative use for it is approved. There would continue to be inadequate parking available near TVA's KOC for downtown commuters and the Liberty Building would continue to deteriorate.

2.1.2 Alternative B – The Proposed Action Alternative

Under the Proposed Action Alternative, TVA would construct and operate the proposed parking garage as described in Chapter 1. The City would purchase the site, remove the existing Liberty Building and prepare the site to a "shovel ready" state for transfer to TVA in simple fee interest. TVA would fund, design, construct, operate, and own the garage. As practicable for TVA in its reasonable discretion, TVA would seek input from and cooperate with the City in developing the design of the parking garage, consistent with the City's Downtown Knoxville Design Guidelines (Knoxville/Knox County Metropolitan Planning Commission 2008) including streetscape improvements and incorporation of space on the street level that can be reconfigured as future commercial/retail space.

As preliminarily designed, the garage would be six to seven stories high with 800 to 1,000 parking spaces. The structure would be approximately 60 to 70 feet tall. TVA currently plans to include charging stations for electric vehicles, light-emitting diode lighting, and bicycle lockers. TVA would investigate opportunities to incorporate alternative energy features in the design for the parking structure.

2.1.3 Alternatives Considered but Eliminated From Further Discussion

Over the last 5 years, TVA has completed preliminary investigations of the feasibility of constructing a parking garage at various locations near its KOC. Because of issues with location, cost, and feasibility of purchasing the properties, these alternative locations are not considered further in this environmental review.

2.2 Comparison of Alternatives

The environmental effects anticipated under the two alternatives considered are compared and summarized below in Table 2-1.

Table 2-1. Summary and Comparison of Alternatives by Resource Area

Resource Area	Impacts From No Action Alternative	Impacts From Proposed Action Alternative
Geology and Soils	No direct, indirect and cumulative geological impacts	No direct, indirect or cumulative geological impacts are anticipated during construction and operation
Cultural Resources	No direct, indirect and cumulative cultural impacts	Pending State Historic Preservation Officer (SHPO) concurrence, no direct, indirect or cumulative impacts to cultural resources
Transportation	No direct, indirect and cumulative transportation impacts	Minor direct, indirect and cumulative transportation impacts during construction and operation.
Solid and Hazardous Waste	The Liberty Building would continue to deteriorate. Minor direct, indirect, and cumulative impacts are anticipated	Minor direct, indirect and cumulative impacts during site preparation and construction. No direct, indirect and cumulative impacts during operation.
Air quality	No direct, indirect and cumulative air quality impacts	Minor direct, indirect and cumulative impacts during construction. Minor direct, indirect and cumulative air quality impacts during operation
Noise	No direct, indirect and cumulative noise impacts	There would be short-term minor direct noise impacts during the construction of the proposed parking garage. To minimize these impacts and to comply with the City's noise ordinance, construction would take place from 7:00am to 6:00pm. During operation, there would be no indirect, indirect, or cumulative noise impacts
Land Use	No direct, indirect and cumulative Land Use Impacts	No direct, indirect or cumulative Land Use impacts are anticipated during construction and operation
Visual resources	Minor direct, indirect and cumulative impacts	Minor direct, indirect and cumulative impacts during construction Minor beneficial direct, indirect and cumulative impacts during operation
Socioeconomics	Minor direct, indirect and cumulative socioeconomic impacts No direct, indirect or cumulative impacts to disadvantaged populations	Minor beneficial direct, indirect and cumulative socioeconomic impacts No direct, indirect or cumulative impacts to disadvantaged populations

2.2.1 Identification of Mitigation Measures

The City has committed to adhere to the following conditions during structure demolition and site preparation before releasing the land to TVA to reduce potential adverse impacts:

- Waste materials would be removed from the area and properly disposed of at approved solid waste facilities or recycled in compliance with Tennessee waste regulations and laws;

- Asbestos-containing material (ACM) abatement and disposal would be conducted before demolition of the Liberty Building;

- The City would comply with the Occupational Safety and Health Administration (OSHA) Lead Standard 29 Code of Federal Regulations (CFR) 1926.62 during building demolition; and

- If necessary, emissions from open demolition areas, paved, and unpaved roads would be mitigated using wet suppression.

TVA would adhere to the following conditions before and during construction and operation of the parking garage to reduce potential adverse impacts:

- Following the City's purchase of the property, a Phase I cultural resources survey would be conducted before any work occurs that could potentially affect a historic property. If it is determined, in consultation with the SHPO, that historic properties would be adversely affected by the proposed undertaking; TVA and the City would, in consultation, enter into a Memorandum of Agreement (MOA) with the SHPO pursuant to 36 CFR Section (§) 800.6 to resolve any adverse effects.

- Additional geotechnical exploration will be conducted as the design of the parking garage progresses to further identify subsurface conditions across the project site.

- Knoxville's noise ordinance, in which construction would occur only from 7:00 a.m. to 6:00 p.m., would be followed.

2.3 The Preferred Alternative

TVA's preferred alternative is Alternative B, the Proposed Action Alternative. Under Alternative B, the City would purchase the project site and transfer the property to TVA for funding, design, construction and operation of the proposed parking garage as described in Chapter 1.

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CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the affected environment and potential environmental consequences of the alternatives evaluated in detail. The affected environment, which is the portion of the existing environment that could be affected by the project, varies for each resource. The information in this chapter established the baseline conditions against which decision maker and the public can compare the potential effects of the alternatives under consideration.

3.1 Geology and Soils

The project site is located within the Appalachian Valley and Ridge Physiographic Province of East Tennessee. This Province is characterized by elongated, northeasterly-trending ridges formed on highly resistant sandstone and shale. Between ridges, broad valleys and rolling hills are formed primarily on less resistant limestone, dolomite, and shale. (S&ME 2012b)

The project is underlain by approximately 5 to 10 feet of fill, 20 to 53 feet of residual soil, and dolomite bedrock having clay-filled and partially clay-filled voids. The residual soils found on site consist of reddish brown, tan, and yellowish brown clay soil with varying quantities of chert fragments. These soils are classified as lean clay and fat clay. The bedrock is of the Copper Ridge Dolomite Formation of the Knox Group. This formation is generally composed of gray, coarse to medium-grained, knotty dolomite in the upper zone and dark-gray crystalline dolomite in the lower zone.

Since the bedrock under the site contains carbonate rock (dolomite), it is susceptible to the hazards of irregular weathering, cave and cavern conditions, and overburden sinkholes. Sinkholes primarily occur due to differential weathering of the bedrock and “flushing” or “raveling” of overburden soils into the cavities in the bedrock. A few closed depressions, which are indicative of past sinkhole activity, were observed in the vicinity of the project site. The project site falls within Seismic Site Class D and fine grained soils encountered above the general water table elevation are not anticipated to be susceptible to liquefaction. Fault movements in this area are deep-seated and do not typically produce surface features.

3.1.1 No Action Alternative

Under the No Action Alternative, the project site would be left unchanged and no construction would occur. The implementation of the No Action Alternative would have no direct, indirect, or cumulative geological impacts.

3.1.2 Proposed Action Alternative

Due to the soil profile, the proposed garage would be supported using deep, rock bearing foundations. The use of these foundations and the implementation of measures outlined in the 2012 S&ME geotechnical report would reduce the potential risk of sinkholes on the project site. During site preparation activities special consideration would be given to the removal of the existing foundations of the demolished building, removal of floor slabs, and removal of subsurface utilities. These items, if left in place prior to construction of the garage, could create difficulty during (deep) foundation construction. Additional geotechnical exploration would be conducted as the design of the parking garage progresses because actual subsurface conditions could vary between, or near, boring

locations. No significant direct impacts to geological resources are anticipated under the Proposed Action Alternative, as site suitability would be taken into account during site preparation activities and construction of the parking garage. No mining, mineral extraction, or petroleum exploration, drilling, or deep excavation that could cause or contribute to bedrock subsidence are anticipated. Therefore, no indirect or cumulative geological impacts would occur.

3.2 Cultural Resources

The human occupation of east Tennessee began at the end of the Ice Age with the Paleo-Indian Period (13,500 – 11,000 years before present, or "B.P."). In the southeastern U.S., prehistoric archaeological chronology is broken into four broad time periods: following the Paleo-Indian Period are the Archaic (11,000 – 3,000 B.P.), Woodland (3,000 – 1,100 B.P.), and Mississippian (1,100 – 500 B.P.) periods. Prehistoric land use and settlement patterns vary during each period, but short-term and long-term habitation sites are generally located on flood plains 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 in east Tennessee began in the middle of the 17th century with the rise of the fur trading industry. Due in part to the introduction of infectious diseases to which Native Americans lacked natural immunity, these interactions resulted in a rapid collapse of the native population, the cessation of elaborate ceremonialism and mound building, the rise of political networks between native groups and European colonists, and intense inter-tribal warfare.

James White established a fort below the confluence of the French Broad and Holston rivers in 1786. The site was selected as a territorial capitol in 1791 and given the name Knoxville, in honor of General Henry Knox. In the same year, White laid out 64 one-half-acre lots and formally organized the town. Two lots were set aside for churches and four for schools. The arrival of the East Tennessee and Georgia Railroad in 1855 made Knoxville a strategic center during the Civil War. Following the Civil War, Knoxville became a major urban center and in 1896 claimed to be the third largest wholesaling center in the entire South. From 1895 to 1904 over 5,000 new homes were constructed in Knoxville. Since its founding, Knoxville has grown to be Tennessee's third largest city (Wheeler 1998).

Based on Sanborn Fire Insurance Maps, between 1890 and 1903, the block in which the proposed garage is planned was occupied by residential homes and the Girls High School. By 1917, the Girls High School had been renamed as the Boyd Jr. High School, the residential homes had been converted to a hotel, and a steam laundry business had been constructed in the northeast corner of the block. By 1950, the northern portion of the block had been filled with residential homes and small businesses, and parking lots were built on the northwest portion of the block. By 1968, buildings had been cleared from the northeast quadrant of the block to create a larger parking lot. The Liberty Building was built in the early 1970s, in the northeast quadrant of the block, and was occupied by TVA for much of the period until about 1993 (ES&H 2012). The adjoining road north of the project site was named Asylum Street from 1809 until it was renamed Western Avenue around 1950. Western Avenue was then renamed its current designation of Summer Place around 1970.

The area of potential effects (APE) for archaeology would be any area that would be affected by land-disturbing activities associated with site preparation activities and the construction of the proposed garage. The architectural APE is a 0.5-mile viewshed surrounding the project site. A preliminary review indicates three historic properties (Daylight Building, Old Knoxville City Hall, and the Market Square Commercial Historic

District) listed on the National Register of Historical Places (NRHP) are located within the architectural APE.

The Daylight Building was built around 1926-1927 on the site of the former Boyd Jr. High School and was listed on the NRHP in 2009 under Criterion A, historical significance. The Daylight Building served as the initial headquarters for TVA Engineering Staff, Training and Education programs, and Soil Erosion and Reforestation offices. The Daylight Building is the last remaining building representing the early, formative years of TVA in Knoxville that retains its architectural integrity. The Daylight Building is located to the south of the project site on the same block. The Old Knoxville City Hall, also known as the Tennessee School for the Deaf, was built between 1846 and 1899 and was listed on the NRHP in 1972 for its historical significance in government, education, military, social history and architecture. This building was used as a school for the deaf from 1848 to 1924 and then used as Knoxville's City Hall from 1925 to 1980. The Old Knoxville City Hall is located to the northwest of the project site. The Market Square Commercial Historic District was built circa 1870 to 1925 and was listed on the NRHP in 1984 for its historical significance in architecture, community planning and development, and commerce. No previous archaeological surveys have been conducted at the site of the proposed parking garage.

TVA initiated consultation with the Tennessee Historical Commission in a letter dated August 6, 2012 (Appendix B). Pursuant to 36 CFR § 800.4(b)(2), TVA is proposing to use a phased process for identification and evaluation efforts. Following the City's purchase of the property, a Phase I cultural resources survey would be conducted prior to any work occurring that could potentially affect a historic property. Any historic properties (archaeological sites, historic sites, and historic structures) that could potentially be adversely affected by the proposed undertaking would be treated by measures to avoid and/or minimize such effects. If it is determined in consultation with the Tennessee SHPO that historic properties would be adversely affected by the proposed undertaking TVA and the City would enter into a MOA with the SHPO pursuant to 36 CFR § 800.6 to resolve the adverse effects.

Pursuant to 36 CFR § 800.3(f), TVA is seeking the participation of the City, Knoxville-Knox County Metropolitan Planning Commission, Knox Heritage, the East Tennessee Historical Society, and the Market Square District Association as invited consulting parties in the Section 106 process.

Pursuant to 36 CFR § 800.3(f)(2), TVA is also seeking opportunities for participation and comments from federally recognized Indian tribes regarding properties that may have religious and cultural significance to their tribe and are eligible for the NRHP. A letter was sent on July 31, 2012 to the identified federally recognized tribes listed in Chapter 5 (Appendix B).

3.2.1 No Action Alternative

The project site would be left unchanged and no construction would occur. The viewshed of the three identified historic structures also would remain the same. Consequently, implementation of the No Action Alternative would have no direct, indirect, or cumulative cultural resource impacts.

3.2.2 Proposed Action Alternative

The proposed garage would affect the viewshed of some architectural resources eligible for listing, or listed, in the NRHP (the Daylight Building, the Old Knoxville City Hall and the

Market Square Commercial Historic District). It is TVA's opinion, that those effects would not be adverse because the viewsheds of these architectural resources have been compromised by the TVA KOC, the Kimberly Clark office building, the Summer Place parking garage, and recently constructed Market Square and Locust Street parking garages. In the course of conducting phased identification and evaluation under 36 CFR § 800.4(b)(2), TVA will verify and confirm that these viewsheds are not adversely impacted. If, however, in consultation with the SHPO and other consulting parties, it is later determined that the undertaking would have the potential for an adverse effect to an architectural resource or its viewshed, TVA would minimize and/or mitigate these effects in consultation with the SHPO and other consulting parties.

The proposed garage has the potential to affect archeological resources potentially eligible for listing, or eligible for listing, in the NRHP. Based on Sanborn fire insurance maps, nineteenth century archaeological resources may be present within the proposed garage block. Pursuant to 36 CFR § 800.4(b)(2), a Phase I cultural resources survey will be completed to verify the presence of any such archaeological resources.. If such resources are present, the City and TVA would consider avoiding them during site preparation activities and when constructing the proposed garage. If this is not feasible, TVA would mitigate the effects in consultation with the SHPO and other consulting parties.

3.3 Land Use

The project site is approximately 1.1 acres and is surrounded to the east by the Market Street Parking Garage, to the west by the City of Knoxville Fire Station, to the south by a vacant property, and to the north by an office building and parking garage (Figure 1-1). The project site is covered with asphalt pavement, the Liberty building and the basement of a demolished building. The historical use of the property indicates that it has been developed and occupied prior to 1890 (ES&H 2012). Portions of the project site were used as parking lots from the 1950s to mid 1960s. The Liberty building is a three-story block and brick building that was constructed in the early 1970s.

The presence of natural resources is very limited. No vegetation is present, except for trees along the sidewalk of Summer Place. In addition, no water features occur on the property. The property is currently zoned as commercial/business real estate and areas around it are zoned commercial, residential, and public use.

3.3.1 No Action Alternative

No construction would occur and the project site would remain in its current land use condition. The implementation of the No Action Alternative would have no direct, indirect, or cumulative land use impacts.

3.3.2 Proposed Action Alternative

The parking garage would be consistent with the site's land use designation and its use for the past 50 years. The garage would not impact the land use of adjoining sites; the commercial/retail and residential uses would remain in use. No vegetation, except for the trees on Summer Place, or water features would be impacted during construction. Therefore, no direct, indirect, or cumulative land use impacts are anticipated by the implementation of the Proposed Action Alternative.

3.4 Visual Resources

Visual resources are evaluated based on existing landscape character, distances of available views, sensitivity of viewing point, human perceptions of landscape beauty/sense

of place (scenic attractiveness), and the degree of visual unity and wholeness of the natural landscape through the course of human alteration (scenic integrity).

The project site is in an urban, developed downtown area. Within the immediate vicinity of the site, the landscape character is distinctly commercial. The parking garage would be approximately 60 to 70 feet tall and no aerial towers or other exceedingly tall structures are planned for the facility. The scenic attractiveness of the proposed project area is common to minimal, and the scenic integrity is low (Figures 3-1 through 3-3).

Source: ES&H 2012

Figure 3-1 View of Northeast Corner of the Liberty Building

Source: ES&H 2012

Figure 3-2 View of Northwest Corner of Property - Exposed Basement

Source: ES&H 2012

Figure 3-3 View of South Side of Liberty Building. The buildings in the background are, from left to right, the Summer Place parking garage, the KOC, and the Market Square parking garage.

3.4.1 No Action Alternative

The project site would remain as it is and no construction would occur. Deterioration of the Liberty Building and the adjoining exposed basement of the demolished building would continue to adversely affect the aesthetic qualities of this section of downtown Knoxville. Therefore, minor direct, indirect and cumulative impacts are anticipated with the implementation of the No Action Alternative.

3.4.2 Proposed Action Alternative

The proposed action would cause a short-term disruption to the visual resources of the area during site preparation and construction. There would be a minor beneficial impact when the exposed basement is demolished and the site is improved during site preparation. The proposed parking garage is typical of developments found in the downtown region and would not be out of character. There would be beneficial direct, indirect, and cumulative visual impacts associated with the implementation of the Proposed Action Alternative because the construction of the garage would remove the blighted character of the project site.

3.5 Solid and Hazardous Waste

In July 2012, a Phase I ESA was performed on the project site. The ESA identifies potential hazardous waste material and proposed remediation measures to be taken on the site before the Liberty Building is removed (ES&H 2012).

To provide a more detailed analysis of the Liberty Building, a pre-demolition hazardous materials survey was performed in July 2012 by S&ME, Inc. (Appendix C). The survey assessed whether the building contained ACM, lead based paint, universal wastes (pesticides, mercury containing equipment, bulbs/lamps and batteries), or regulated materials (e.g., polychlorinated biphenyls [PCBs] or Freon). Table 3-1 identifies the ACM observed during the survey.

Table 3-1. Asbestos-containing Material Observed in Liberty Building

Description of ACM	Location/ Approximate Quantity*
Brown speckled 12-inch by 12-inch floor tile with black mastic	1st, 2nd, and 3rd floor offices / 20,000 square feet (ft^2)
Dry wall joint compound	1st floor west and south hallway and offices / 6,000 ft^2
Gray 12-inch by 12-inch floor tile with black mastic under carpet	2nd floor east offices / 2,000 ft^2
Roofing Felt with tar over wood	Roof at Air Handling Units / 8,000 ft^2
Exterior window glazing	Exterior Windows / 23 windows

Source: S&ME 2012
* Quantities will need to be verified prior to demolition

Samples from differentiated surface colors and surface substrates of exterior and interior paint were collected during the survey. All of the paint samples collected tested positive for lead content. Two areas of discarded fluorescent light bulbs were observed and were determined to be regulated universal waste items. PCB-containing light ballasts and Freon-containing equipment were also observed during the survey. There were no pesticides, batteries, or mercury-containing material observed on site.

Geotechnical drilling was conducted at the Liberty building from July 23 through July 27, 2012 by S&ME, Inc. A total of eight borings were drilled and field screened for organic

vapors, as well as visually inspected for staining and olfactory indications of potential contamination. No visual or olfactory evidence of contamination observed and field screening did not indicate elevated organic vapors (Appendix C).

3.5.1 No Action Alternative

The project site would remain as it is and no construction would occur. The Liberty Building would continue to deteriorate, potentially creating a safety hazard and causing exposure to ACM, PCBs, lead-based paint, and other universal wastes. Implementation of the No Action Alternative would have minor direct, indirect, and cumulative impacts to solid and hazardous waste materials.

3.5.2 Proposed Action Alternative

Under the Proposed Action Alternative, the City would clean up the identified hazardous materials during site preparation. There would be positive direct, indirect and cumulative impacts associated with the demolition of the Liberty Building and the disposal of the abandoned first floor of the demolished building. Both of these structures are deteriorating and contain hazardous materials including ACM and lead-based paint.

The exact amount of solid and hazardous waste generated by demolition of the Liberty Building, preparation of the site, and construction of the parking garage is not known at this time. However, any wastes generated during these activities would be disposed of in accordance with federal and state regulations. TVA would manage its construction waste through a TVA waste disposal contract to access permitted disposal capacity or recycling facilities, as needed.

In order to reduce potential adverse solid and hazardous waste impacts, the City has committed to adhere to the following conditions during structure demolition and site preparation prior to releasing the land to TVA:

- Waste materials would be removed from the area and properly disposed of at approved solid waste facilities or recycled in compliance with Tennessee waste regulations and laws.

- ACM abatement and disposal would be conducted prior to demolition of the Liberty Building.

- The City would comply with the OSHA Lead Standard 29 CFR 1926.62 during building demolition.

Because all of the solid and hazardous wastes from site preparation and construction would be in accordance with the applicable regulations and the mitigation measures identified above, any direct or indirect adverse effects from the generation, management, and disposal of these wastes are likely to be minor. Cumulative impacts would be minimized by use of permitted landfills, which have measures in place to minimize potential environmental impacts. There would also be beneficial impacts during site preparation as the site would no longer be a potential safety hazard or source for exposure to hazardous materials.

3.6 Transportation

The project site is bounded by Walnut Street, Union Avenue, Locust Street, and Summer Place (Figure 1-1). The major arterial routes that garage traffic would be expected to use are Western Avenue (State Route 62), Broadway Street (U.S. 441), Summit Hill Drive and Henley Street (U.S. 441). Walnut Street, Locust Street, Clinch Avenue, and Church Avenue are city streets that function as two-way collectors to the arterial streets. The major intersection in the vicinity of the project site is Western Avenue/Summit Hill Drive at Broadway Street/Henley Street. The majority of commuter traffic to the downtown area in the vicinity of the KOC arrives and departs on Interstate (I)-40 to the west and I-75 to the north via this major intersection.

For the traffic evaluation, Year 2003 turning movement counts for the intersections of Western Avenue/Summit Hill Drive at Broadway Street/Henley Street, Henley Street at Clinch Avenue, and Henley Street at Church Street were provided by the City of Knoxville Traffic Engineering department. Year 2010 turning movement counts were also provided for the intersections of Summit Hill Drive at Locust Street and Summit Hill Drive at Walnut Street. City records indicate that the Year 2003 counts are higher than the Year 2010 counts. The reduction in traffic volumes could be attributed to the economy and/or the completion of Tennessee Department of Transportation's SmartFIX 40 project that added additional routes to and from I-40. Both Market Square and Locust Street garages were completed after 2003 and could have also affected the traffic patterns around the property site, especially on Walnut and Locust Streets. At this time, entrance/exit layout and trips generated by the approximate 800-space to 1,000-space parking garage have not been completed. Therefore, no traffic projections were conducted and the counts were used as provided. Due to the reconstruction of the Henley Street Bridge, current traffic counts could not be performed. The Henley Street Bridge crosses over the Tennessee River serving as a major thoroughfare for downtown workers commuting from South Knoxville. The bridge carries Henley Street (U.S. 441) into downtown Knoxville and Chapman Highway (U.S. 441) into South Knoxville. This temporary bridge closure directly impacts normal traffic patterns in the project's study area.

A capacity analysis was conducted for these intersections using Synchro/SimTraffic. A Level of Service (LOS) index was used to gauge the operational performance at each intersection/roadway segment. The LOS is a qualitative measure that describes traffic conditions related to speed and travel time, freedom to maneuver, traffic interruptions, etc. There are six levels ranging from A to F, with F representing the poorest conditions (See Table 3-2). The results of the intersection capacity analysis are shown in Table 3-3. The only intersection approaching an undesirable LOS is Western Avenue/Summit Hill Drive at Broadway Street/Henley Street during PM peak hour when most commuters are heading home. All other principal intersections operate at LOS B or better indicating minimal travel delays and less congestion.

Table 3-2. Level of Service Index

LOS	Traffic Flow Conditions
A	Free flow operations. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The general level of physical and psychological comfort provided to the driver is high.
B	Reasonable free flow operations. The ability to maneuver within the traffic stream is only slightly restricted. The general level of physical and psychological comfort provided to the driver is still high.
C	Flow with speeds at or near free flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more vigilance on the part of the driver. The driver notices an increase in tension.
D	Speeds decline with increasing traffic. Freedom to maneuver within the traffic stream is more noticeably limited. The driver experiences reduced physical and psychological comfort levels.
E	At lower boundary, the facility is at capacity. Operations are volatile because there are virtually no gaps in the traffic stream. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort.
F	Breakdowns in traffic flow. The number of vehicles entering the highway section exceeds the capacity or ability of the highway to accommodate that number of vehicles. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort.

Table 3-3. Results of Intersection Capacity Analysis

Intersection	Time of Day	LOS*	Average Delay (seconds)
Western Avenue/Summit Hill Drive at Broadway Street/ Henley Street	a.m.	B	15.1
	p.m.	D	38.0
Summit Hill Drive at Locust Street	a.m.	B	12.2
	p.m.	B	11.4
Summit Hill Drive at Walnut Street	a.m.	B	10.2
	p.m.	B	15.2
Henley Street at Clinch Avenue	a.m.	B	14.8
	p.m.	B	10.5
Henley Street at Church Street	a.m.	B	11.5
	p.m.	A	7.5

*According to Highway Capacity Manual (Transportation Research Board 2010)

3.6.1 No Action Alternative

The project site would be left unchanged and there would be no change from existing transportation conditions. TVA employees would continue to use other city and private garages and surface parking lots, but there would be no additional parking for future East Tower tenants. The implementation of the No Action Alternative would have no direct, indirect, or cumulative transportation impacts.

3.6.2 Proposed Action Alternative

There could be the need to close some portions of the adjoining streets during site preparation activities and the construction of the garage. Any lane closures or detours would be temporary and minor direct, indirect and cumulative transportation impacts are anticipated with the implementation of the Proposed Action Alternative.

All intersections in the transportation study area have adequate capacity (LOS A or B), except Western Avenue/Summit Hill Drive at Broadway Street/ Henley Street (LOS D), during the PM peak hour. This LOS D is due to large turn volumes from eastbound Western Avenue onto southbound Henley Street, from westbound Summit Hill Drive onto southbound Henley Street, and from the northbound Henley Street onto westbound Western Avenue. The traffic generated during the operation of the parking garage is not expected to significantly impact any of these movements.

At the Summit Hill Drive and Walnut Street intersection, westbound Summit Hill traffic is not permitted to turn left (southbound) onto Walnut Street. However, southbound through movements can occur and vehicles can proceed to turn left at the Summit Hill Drive and Locust Street intersection. Consideration should be given to the left turn restriction at Walnut Street during the design of the parking garage. A possible option would be to locate all garage entrances on Locust Street and exits on Walnut Street. Another option would be to restrict turns from the garage based on street network operations. Signal timing may require adjustment after garage construction. Additional coordination with the City of Knoxville Traffic Engineering Department would occur during the parking garage design process.

There could be minor direct, indirect or cumulative transportation impacts during operation of the garage due to the adequate capacity level of the roadways in the vicinity of the project site and the ability to minimize any potential impacts during design of the garage.

3.7 Air Quality

Under the Clean Air Act, the U.S. Environmental Protection Agency (USEPA) established primary and secondary air quality standards. Primary air standards protect the public health, including the health of “sensitive populations, such as people with asthma, children, and older adults.” Secondary air quality standards protect public welfare by promoting ecosystems health, preventing decreased visibility, and damage to crops and buildings. The USEPA has set national ambient air quality standards (NAAQS) for six criteria pollutants: sulfur dioxide (SO_2), particulates ($PM_{2.5}$ and PM_{10}), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and lead (Pb).

Table 3-4. National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
CO	9 ppm	8-hour (1)	None	
	35 ppm	1-hour (1)		
Pb	0.15 µg/m^3 (2)	Rolling 3 month average	Same as Primary	
NO_2	53 ppb (3)	Annual	Same as Primary	
	100 ppb	1-hour (4)	None	
PM_{10}	150 µg/m^3	24-hour (5)	Same as Primary	
$PM_{2.5}$	15 µg/m^3	Annual (6)	Same as Primary	
	35 µg/m^3	24-hour (7)	Same as Primary	
O_3	0.075ppm	8-hour (8)	Same as Primary	
SO_2	75 ppb (9)	1-hour	None	
	None		0.5 ppm	3-hour (1)

Source: USEPA 2011
ppm = parts per million
ppb = parts per billion
µg/m^3 = micrograms per cubic meter
(1) Not to be exceeded more than once per year
(2) Final rule signed October 15, 2008
(3) The official level of the annual NO_2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard
(4) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).
(5) Not to be exceeded more than once per year on average over 3 years.
(6) To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.
(7) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3 (effective December 17, 2006).
(8) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average O_3 concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective May 27, 2008).
(9) Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

USEPA classifies geographic areas as being “attainment” areas, or “nonattainment areas.” A geographic area with air concentrations at or below the NAAQS (for the pollutants identified in Table 3-4), is referred to as an “attainment” area. An area with air concentrations that exceed these standards is referred to as a “nonattainment” area. States and/or their political subdivisions such as Knox County are required to formulate plans for reducing emissions in or affecting nonattainment areas in order to attain the NAAQS. These plans are called State Implementation Plans or SIPs.

USEPA has designated all of Knox County as a nonattainment area for ozone and a part of Knox County, including the City, as a nonattainment area for $PM_{2.5}$ (USEPA 2012). On

August 2, 2012, the USEPA announced that Knox County has monitoring data showing that it has attained the annual and 24 hour $PM_{2.5}$ standards and it suspended requirements to submit a SIP demonstrating attainment of these $PM_{2.5}$ standards. If data continue to show attainment, EPA will redesignate the area attainment. Ozone is a secondary pollutant formed by atmospheric reactions involving volatile organic compounds (VOCs) and nitrogen oxide (NOx). Its formation is a complex process that depends on the intensity and spectral distribution of sunlight, atmospheric mixing and other atmospheric processes as well as the concentrations of NOx and VOCs in ambient air. Since ozone formation occurs as a function of secondary reactions in the atmosphere that occur over time, there typically is a large regional contribution to ozone levels in specific areas.

In addition to emitting criteria pollutants, motor vehicles emit a number of different toxic pollutants. These include acrolein, benzene, diesel particulate matter, formaldehyde, and polycyclic organic matter. EPA has determined that such emissions on an aggregated basis from multiple vehicles can be cancer risk drivers. These are referred to as mobile source air toxics or MSAT. According to the 2009 FHWA interim guidance on MSAT, a meaningful MSAT impact can occur when a project results in a significant increase in traffic capacity. When there are no "meaningful impacts on traffic volumes or vehicle mix," FHWA indicates that MSAT impacts are not expected to be important and require no further MSAT analysis.

3.7.1 No Action Alternative

The project site would be left unchanged and there would be no change from current conditions. The implementation of the No Action Alternative would have no direct, indirect, or cumulative air impacts.

3.7.2 Proposed Action Alternative

Site preparation and construction activities would cause minor short-term air quality impacts in the form of dust from earthwork and demolition of the Liberty Building. These impacts would be mitigated through the development and implementation of BMPs, which would include covering and/or wetting area solids to minimize fugitive dust emission. Substantial construction-related MSAT emissions are not anticipated as construction is not planned to occur over an extended building period. However, construction activity may generate temporary increases in MSAT emissions in the project site.

Some of the parkers using the proposed garage likely will relocate there from other parking spots in the downtown area and neither traffic volumes nor associated emission will increase as a result. However, if it is assumed that all of the 1,000 parking spaces in the garage are used by new drivers to downtown Knoxville, there still would not be a meaningful impact on traffic volumes. There would be minor or negligible air quality direct, indirect and cumulative impacts from the potential increase of vehicles to the downtown Knoxville Area during the operation of the garage. On an annual basis this is expected to increase NOx, $PM_{2.5}$, and CO emissions by approximately 0.16, 0.0022, and 3.2 tons, respectively. These emissions were calculated based on a six story 1,000 space parking garage with weekday occupancy of 90 percent and nights and weekend occupancy of 30 percent. The analysis also included assumptions pertaining to vehicle idle emissions and travel emissions during the time spent in the garage. More details on the assumptions and emissions calculations are contained in Appendix D. These increases are below established significance levels. See Tennessee Air Pollution Control Board Regulations 1200-03-34.02.

The largest 2011 annual average daily traffic (AADT) in the immediate vicinity of the project site was located at the intersection of Clinch Avenue and Henley Street with an AADT of 47,351 (Tennessee Department of Transportation 2011). The increase in traffic volume resulting from the proposed garage would only be two percent of the maximum AADT count assuming all 1,000 parking spaces are used by new drivers to downtown Knoxville. This is not a meaningful impact on traffic volumes.

With respect to future MSAT emissions in general, it should be noted that USEPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with USEPA's MOBILE6.2 model forecasts a combined reduction of 72 percent in the total annual emission rate for the priority MSAT from 1999 to 2050 while vehicle-miles of travel are projected to increase by 145 percent (USEPA 2007). This would both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

3.8 Noise

Sound is most commonly measured in decibels on the A-weighted decibel (dBA), which is the scale most similar to the range of sounds that the human ear can hear. The Day-Night Average Sound Level (DNL) is an average measure of sound. The DNL descriptor is accepted by federal agencies as a standard for estimating sound impacts and establishing guidelines for compatible land uses.

Noise, defined herein as undesirable sound, is regulated by the Noise Control Act of 1972 (NCA). Although the NCA gives the USEPA authority to prepare guidelines for acceptable levels of ambient noise, it only charges those federal agencies that operate noise-producing facilities or equipment to implement noise standards. USEPA guidelines, and those of many other federal agencies, state that outdoor sound levels in excess of 55 dBA DNL are "normally unacceptable" for noise-sensitive land uses, such as residences, schools, and hospitals.

The project site is in a primarily commercial and residential area located in the city limits of Knoxville, which has adopted a noise ordinance. Compliance with the noise ordinance would limit construction of the garage to the hours of 7:00 a.m. to 6:00 p.m. because of the site's close proximity to residential property (City of Knoxville 1992).

The ordinance also states that "No person shall cause, suffer, allow, or permit sound from any source which, when measured from the real property boundary of the source of the sound, is in excess of the following standards for commercial use designations:

- When the offending sound emanates from a commercial use between the hours of 7:00 a.m. and 12:00 midnight, sound which has an A-weighted sound pressure level of 80 dBA, or impulsive sound which has an A-weighted sound pressure level of 80 dBA.

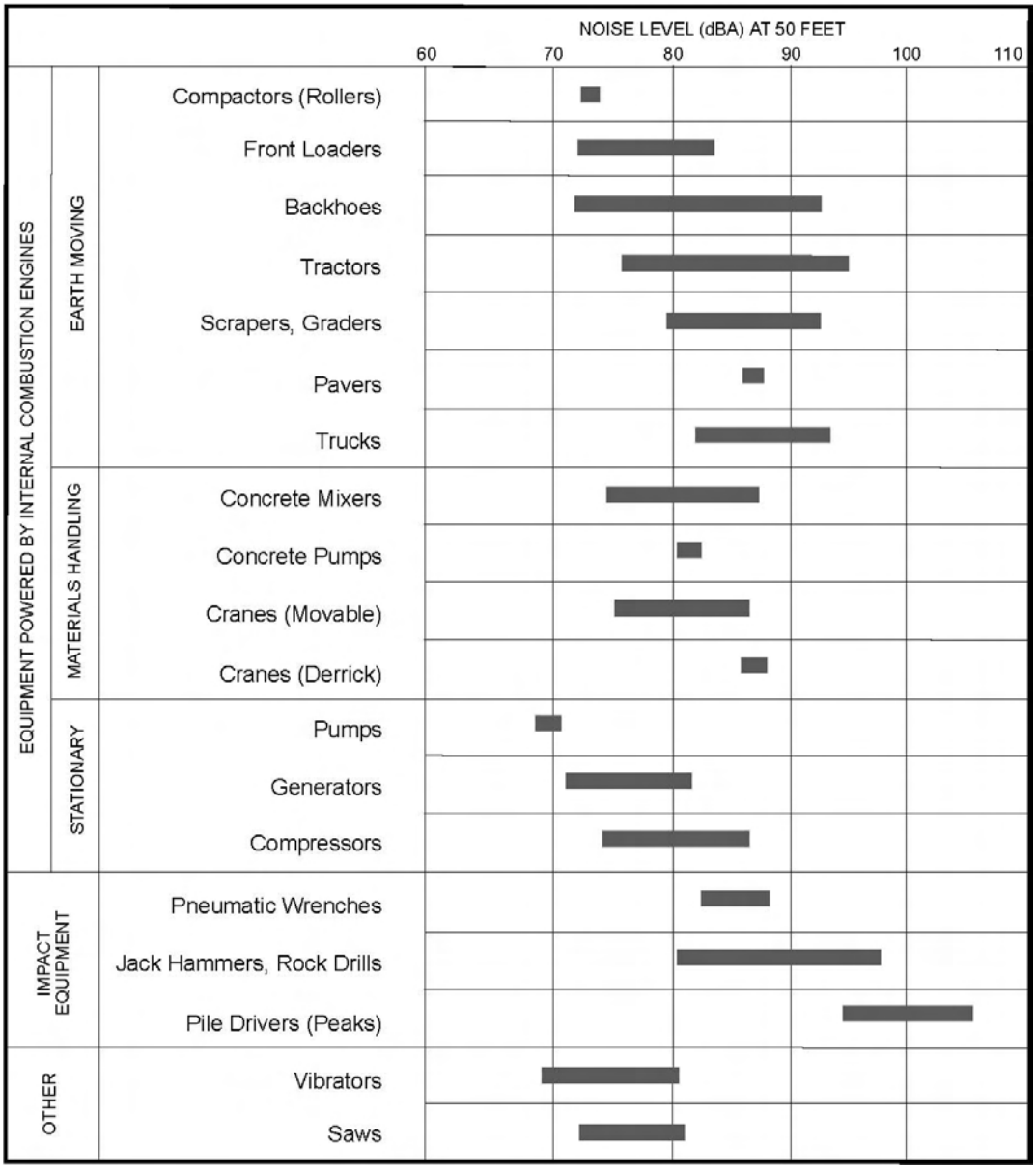
- When the offending sound emanates from a commercial use between the hours of 12:00 midnight and 7:00 a.m., sound which has an A-weighted sound pressure level of 75 dBA, or impulsive sound which has an A-weighted sound pressure level of 80 dBA."

3.8.1 No Action Alternative

The project site would be left unchanged and no construction activities would occur. Therefore, the implementation of the No Action Alternative would have no direct, indirect, or cumulative noise impacts.

3.8.2 Proposed Action Alternative

There would be short-term minor direct noise impacts during preparation of the site and construction of the garage. Noise levels of typical construction and demolition equipment are shown in Figure 3-4. To minimize these impacts and to comply with the City's noise ordinance, activities would be limited to the period of 7:00 a.m. to 6:00 p.m. BMPs would also be used during site preparation and garage construction (e.g., constructing noise barriers) to minimize impacts.



Source: USEPA 1971

Figure 3-4. Noise Levels of Typical Construction Equipment

During operation, vehicle traffic associated with the proposed parking garage would not exceed 75 dBA, which is identified as an 'offending sound' by the City. The parking garage is not a noise producing facility and therefore does not fall under the NCA. There would be no indirect, indirect, or cumulative noise impacts from the implementation of the Proposed Action Alternative during the operation of the parking garage.

3.9 Socioeconomics and Environmental Justice

The 2010 Census indicates the population of the City is 178,874 and the population of Knox County is 432,237 (U.S. Census Bureau 2011). This is an increase of 2.9 percent since the 2000 Census of Population, well below the overall state increase of 11.5 percent. The project site is in Census Tract 1, Block 1070. Census Tract 1 had a population of 1,605 in 2010, an increase of 23.5 percent from the 2000 population of 1,300 (U.S. Census Bureau 2011). Total employment of Knox County in 2009 was 200,264, a 7.2 percent increase from 2000 to 2009.

The City has seen growth over the past decade, especially in the downtown area around Market Square. Knoxville has successfully increased business in the downtown area. Several restaurants, retail shops, residential properties, a movie theater, and the visitor's center have opened since 2000. Much of the increase in the Census Tract 1 population has resulted from residents moving into recently completed apartments and condominiums in both rehabilitated older buildings and recently constructed buildings.

In general, mean income in the City is lower than for Knox County or the State of Tennessee. In 2010, per capita personal income in the City was $21,964, which is lower than the Knox County average of $27,349 and statewide average of $23,722 (U.S. Census Bureau 2011). In addition, median household income from 2006 to 2010 for the City was $32,756, compared to $46,759 for Knox County and $43,314 statewide (U.S. Census Bureau 2011).

Under Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, many federal agencies are to consider any potentially disproportionate human health or environmental risks their activities, policies, or programs may pose to minority or low-income populations. Although TVA is not subject to this Executive Order, it typically evaluates impacts to minority and low-income populations as a matter of policy. The minority population of the City is 23.9 percent of the total, which is above the Knox County average of 13.3 percent, but below the state average of 24.4 percent and the national average of 36.3 percent. The racial and ethnic groups in the City break down as follows: 76.1 percent White, 17.1 percent Black, 0.4 percent American Indian/Alaskan Native, 1.6 percent Asian, 0.2 percent Native Hawaiian, 2.5 percent of two or more races, and 4.6 percent Hispanic (U.S. Census Bureau 2011).

The poverty level in the City is estimated to be 23.4 percent, as of 2006-2010 estimates. This level is higher than the Knox County average of 13.7 percent and the state average of 16.5 percent (U.S. Census Bureau 2011). Nationally, the poverty level was estimated to be 13.8 percent during the same period.

3.9.1 No Action Alternative

No construction would occur and the project site would remain in its current land use condition. The lack of suitable parking would have a minor negative direct socioeconomic impact on downtown visitors and future potential businesses. The implementation of the

No Action Alternative would have no direct, indirect, or cumulative environmental justice impacts.

3.9.2 Proposed Action Alternative

The proposed parking garage would be part of the City's free nights and weekend parking program and could attract additional visitors to the downtown area. The garage could also make the downtown area more attractive to employers and employees, which would increase job potential. Therefore, implementation of the Proposed Action Alternative would provide a minor beneficial impact to the local economy by providing visitor and business parking. The construction and operation of the proposed parking garage would not displace any residents or businesses or impact disadvantaged populations. Therefore, no direct, indirect, or cumulative impacts to disadvantaged populations are anticipated under the Proposed Action Alternative.

3.10 Cumulative Impacts

Cumulative effects of the Proposed Action Alternative would be limited to the City and its surrounding communities. Resources that could be affected cumulatively by the site preparation and construction activities are transportation, visual resources, cultural resources, and air quality. Transportation would continue to be affected by general population increases and development growth in the area. Visual resources would be beneficially impacted by the development of the project site. Cultural resources could be impacted by the proposed action, but these impacts would be minimized by the implementation of the MOA. The proposed action would have minor cumulative air quality impacts, but these would not be on a regional scale. Therefore, the cumulative impacts associated with the implementation of the Proposed Action Alternative would be insignificant. The implementation of the No Action Alternative would have solid and hazardous waste cumulative impacts because the project site would continue to be a potential source of exposure to hazardous materials.

3.11 Unavoidable Adverse Environmental Impacts

Unavoidable adverse impacts on some resources are expected to occur as a result of site preparation and construction of the parking garage. These resources could include cultural resources, transportation, and air quality. These effects could result from land use changes, ground disturbance, concentration of human use and increases in land-based traffic. Some of these adverse effects could be reduced through implementing mitigation measures described in Sections 2.2.1. Construction would generate minor amounts of fugitive dust and noise, but these would be temporary and minor in nature.

3.12 Relationship of Short-Term Uses and Long-Term Productivity

NEPA requires consideration of the "relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (40 CFR § 1501.16). For the proposed parking garage, short-term uses generally are those that are expected to occur during the site preparation and construction (several months), while the long term refers to the operation of the parking garage (e.g., 10 to 20 years). Productivity is the capability of the land to provide market and amenity outputs and values for future generations. The capability of the land to sustain productivity is one factor that influences the quality of life for future generations. The use of the property has been commercial/retail and parking for the last 50 years and would continue to be used in this capacity for the foreseeable future. With no vegetation or exposed soils, long-term productivity would be nonexistent as long as the site has pavement and buildings. Therefore, the proposed use of the property is not likely to adversely affect the long-term productivity of the site.

3.13 Irreversible and Irretrievable Commitments of Resources

A commitment of resources is irreversible when options are lost to future generations. An irreversible commitment of resources suggests that a permanent or long-term (over 50 years) commitment of environmental resources would result from implementing the proposed action. Irreversible commitments of resources also generally occur from the use of nonrenewable resources, such as minerals, cultural resources, and fossil fuels, which have few or no alternative uses at the termination of the proposed action. Conversely, an irretrievable commitment of resources suggests that a short-term (less than 50 years) commitment of resources would result in the lost production or elimination of renewable resources such as timber, agricultural land, or wildlife habitat. Opportunities for use of these resources are foregone for the period of the proposed action, but these decisions are reversible. The use of opportunities foregone is irretrievable.

Construction and operation of the proposed parking garage would result in the irreversible commitment of certain fuels, energy, and building materials. Irreversible impacts to cultural resources could occur, depending on the results of the Phase I survey that would be completed before any demolition or construction on site. The use of the property for the proposed project would constitute an irretrievable commitment of land use. However, because the project site has been use for industrial or commercial/retail land use for more than 50 years and that the proposed garage is consistent with the planned land use, these commitments would likely have minor and insignificant effects with respect to land use.

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CHAPTER 5 – ENVIRONMENTAL ASSESSMENT RECIPIENTS

Federally Recognized Tribes (E-mail Notification of Availability)

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 Nation
Eastern Shawnee Tribe of Oklahoma
United Keetoowah Band of Cherokee Indians in Oklahoma
Mississippi Band of Choctaw Indians
Jenna Band of Choctaw Indians
Muscogee (Creek) Nation
Kialegee Tribal Town
Thlopthlocco Tribal Town
Poarch Band of Creek Indians
Seminole Nation of Oklahoma
Seminole Tribe of Florida
Shawnee Tribe

State Agencies Receiving Notification and Final EA (Hard Copy or CD)

Tennessee Department of Environment and Conservation
Tennessee Department of Transportation
Tennessee Historical Commission
East Tennessee Development District

Organizations Receiving Notification and Final EA (Hard Copy or CD)

City of Knoxville
East Tennessee Historical Society
Knox Heritage
Knoxville-Knox County Metropolitan Planning Commission
Market Square District Association

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Katherine Fenner
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CHAPTER 6 – LITERATURE CITED

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