3.0 AFFECTED ENVIRONMENT

In accordance with CEQ regulations (40 CFR 1502.15), this section describes the existing conditions of the area(s) to be affected by the alternatives under consideration in this EA. As stated in DO-12, the NPS NEPA compliance guidance handbook, only those resources that may experience impact or be affected by alternatives under consideration should be described in this section.

As discussed in Section 1.5 of this EA, the analysis of potential environmental and socioeconomic impacts that may result from the different management alternatives is supplemented in this EA by a general description of potential impacts that should be considered in subsequent NEPA documentation regarding potential future NPS developments to enhance visitor experience. Therefore, for the purposes of this EA, the affected environment has been expanded to include all resources that may be affected by future NPS developments, not just those resources that would be affected by the different management scenarios analyzed in detail in this EA. Because site-specific future development scenarios have not yet been determined, the discussion of the affected environment for those resource areas that would only be affected by potential future NPS developments is very broad in nature. For the most part, a regional resource description is presented, rather than site-specific conditions.

3.1 NATURAL RESOURCES

3.1.1 Soils and Topography

Parent Material: The unconsolidated mass in which soil forms. The characteristics of the parent material determine soil characteristics, such as thickness and texture of the horizons, mineralogy, color, and reaction.

The parent material of the soils within Alcorn County consists of alluvium, loam, or marine deposits. Millions of years ago, alluvium consisting of sand, silt, and clay, was deposited on the land as the Gulf of Mexico seas receded. Throughout Alcorn County, the loess is rarely more than four feet thick, and is mixed with sandy material of the Coastal Plain. Consequently, many of the County's soils formed partly in loess and partly in the underlying sandy material (SCS, 1971).

Soil Association: A landscape, named for its major soil types, that has a distinctive proportional pattern of soils, generally consisting of one or more major soils and at least one minor soil type.

Soil Series: A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All soils of a series have horizons that are similar in composition, thickness, and arrangement.

Two soil associations underlie the City of Corinth and its adjacent lands: the Mantachie-Arkabutla-Rosebloom association and the Providence-Ora-Paden association. Soils of the Mantachie-Arkabutla-Rosebloom association are nearly level, have a sandy loam to silt loam subsoil, and are somewhat poorly drained to poorly drained (SCS, 1971). The primary soil series of this association are discussed in **Table 3.1.1-1**. Soils of the Providence-Ora-

Paden association are nearly level to strongly sloping, moderately well-drained, and have a fragipan (SCS, 1971). The primary soil series in this association are also discussed in **Table 3.1.1-1**.

Table 3.1.1-1. Characteristics of Soil Series Underlying the Corinth, Mississippi Area

Soil Association	Soil Series	Characteristics
Mantachie-Arkabutla-Rosebloom	Mantachie (sandy loam)	• Nearly level-slopes are 0 to 2%; found in bottom lands • Somewhat poorly drained; runoff is medium; erosion hazard is slight • Strongly acidic • Formed in loamy material washed from sandy to loamy soils of the uplands
	Arkabutla (silt loam)	• Nearly level-slopes are 0 to 2%; found in bottom lands • Somewhat poorly drained; runoff is medium; erosion hazard is slight in cultivated areas • Strongly to very strongly acidic • Formed in foamy sediment washed from uplands
	Rosebloom	• Poorly drained; runoff is slow to very slow • Strongly acid • Formed in silty material; found on floodplains
Providence-Ora-Paden	Providence (silt loam)	• Gently sloping to moderately sloping • Moderately well-drained; runoff is medium; erosion hazard is severe in cultivated areas • Very strongly acid to strongly acid • Formed in loamy material; has a fragipan
	Ora	• Nearly level to strongly sloping • Moderately well-drained; eroded • Very strongly to extremely acidic • Formed in loamy material; has a fragipan
	Paden (silt loam)	• Nearly level to gently sloping-slopes range from 0 to 5% • Moderately well-drained; runoff is medium • Very strongly acidic • Formed in loamy material; has a fragipan

Source: SCS, 1971

Soils in the affected area of eastern McNairy County, Tennessee are of the Paden-Saffell-Pickwick soil association. These soils were formed in loamy and gravelly alluvium deposited by the Tennessee River. Pickwick and Paden soils, found on old high terraces of the Tennessee River, have well-developed soil profiles due to their age; Saffell soils have comparatively thin profile development due to slope and the stratification of their parent material. Soils in the Paden-Saffell-Pickwick association are gently sloping to steep, moderately well-drained to well-drained. The association consists of 34 percent Paden soils, 12 percent Saffell soils, 8 percent Pickwick soils, and minor soils, including Smithdale, Luverne, Iuka, Enville, Bibb, and Freeland (NRCS, 1997a). These soil series are described in **Table 3.1.1-2**.

Table 3.1.1-2. Characteristics of the Soil Series Underlying the Affected McNairy County, Tennessee Area

Soil Association	Soil Series	Characteristics
Paden-Saffell-Pickwick	Paden (silt loam)	• Slopes range from 2 to 5% • Very deep, moderately well-drained; high water capacity; high water table • Very strongly to strongly acidic • Formed from loamy alluvium from the Tennessee River; found on broad, undulating terraces of the Tennessee River • Has a compact, slowly permeable fragipan • Poorly suited to building site development without management considerations* due to low strength and seasonal wetness
	Saffell (sandy loam)	• Slopes range from 5 to 30% • Very deep, well-drained; low water capacity; no high water table • Very strongly acidic to strongly acidic • Gravelly, with a loamy subsoil • Formed in deep gravelly sediments deposited by the Tennessee River; found on rolling to hilly terraces of the Tennessee River • Poorly suited to building site development without management considerations*
	Pickwick (silt loam)	• Slopes range from 2 to 12% • Very deep, well-drained; high water capacity; no high water table • Very strongly acidic to strongly acidic • Formed from loamy alluvium from the Tennessee River; found on undulating terraces of the Tennessee River • Suited to most residential and commercial uses
*Management considerations include mixing the upper part of the soil with coarser, textured material to increase the soil's strength and stability (for road and street developments), providing drainage and diverting runoff to reduce wetness (for building foundations), and placing roads and streets in less-sloped areas to reduce the amount of cut and fill needed.		

Source: NRCS, 1997a

Soils in Hardeman County, Tennessee formed from one of three general parent materials: loamy coastal plain deposits, loess (windblown silt), or alluvium. Four soil associations underlie the affected area in eastern Hardeman County; the Luverne-Smithdale-Chickasaw association and the Kurk-Adaton-Providence association underlie the majority of the area, while the Chenneby-Rosebloom-Urbo and the Iuka-Ochlockonee-Chenneby associations underlie smaller portions (NRCS, 1997b).

Soils of the Luverne-Smithdale-Chickasaw association are found in uplands, and formed in clayey and loamy marine deposits. In general, these soils are deep to very deep, well-drained, and are undulating to steep. The association consists of 35 percent Luverne soils, 18 percent Smithdale soils, 15 percent Chickasaw soils, and 32 percent minor soils, including Tippah, Wilcox, Providence, Chenneby, and Enville soils. Soils of the Kurk-Adaton-Providence association are found on stream terraces, and formed in a mixture of loess and silty alluvium and in loess and loamy marine deposits. These soils are very deep, moderately well-drained to poorly drained, and are nearly level to undulating. This association consists of 34 percent Kurk soils, 28 percent Adaton soils, 14 percent Providence soils, and 24 percent minor soils, including Loring, Lexington, Deanburg, Iuka, and Ochlockonee soils. Soils of the Chenneby-Rosebloom-

Urbo association are found on floodplains of the Hatchie River and its major tributaries, and formed in silty, loamy, and clayey alluvium. These soils are very deep, somewhat poorly and poorly drained, and are nearly level. This association consists of 28 percent Chenneby soils, 19 percent Rosebloom soils, 11 percent Urbo soils, and 42 percent minor soils, including Bibb, Amagon, Iuka, Nugent, and Enville soils. Soils of the Iuka-Ochlockonee-Chenneby association are found on floodplains of secondary streams, and formed in loamy alluvium. These soils are very deep, well drained to somewhat poorly drained, and are nearly level. This association consists of 34 percent Iuka soils, 29 percent Ochlockonee soils, 15 percent Chenneby soils, and 22 percent minor soils, including Nugent, Adaton, Steens, Deanburg, and Enville soils (NRCS, 1997b). Soil series comprising all of these associations are described in **Table 3.1.1-3**.

Table 3.1.1-3. Characteristics of the Soil Series Underlying the Affected Hardeman County, Tennessee Area

Soil Association	Soil Series	Characteristics
Luverne-Smithdale-Chickasaw	Luverne	• Very deep; well-drained • Found on narrow, rolling ridges and steep hillsides; slopes range from 8 to 45% • Formed from stratified, clayey marine deposits; surface layer is sandy loam and clay loam • Most areas unsuited for residential/commercial uses due to slope and slow permeability of subsoil
	Smithdale	• Very deep; well-drained • Found on narrow, rolling ridges and steep, highly dissected hillsides; slopes range from 8 to 45% • Formed from loamy marine deposits; surface layer is sandy loam and loam • Most areas unsuited for residential/commercial uses due to slope and slow permeability of subsoil
	Chickasaw	• Deep; well-drained • Found on hillsides; slopes range from 12 to 45% • Formed in clayey marine deposits, claystone, and clayey shale; surface layer is silty clay and loam • Most areas unsuited for residential/commercial uses due to slope and slow permeability of subsoil
Kurk-Adaton-Providence	Kurk	• Very deep; somewhat poorly drained • Found on slightly convex knolls on nearly level stream terraces; slopes range from 0 to 3% • Formed in loess and silty alluvium; surface layer is silt loam • Poorly suited to most residential/commercial uses due to seasonal wetness
	Adaton	• Very deep; poorly drained • Found on broad, nearly level stream terraces; slopes range from 0 to 2% • Formed in loess and silty alluvium; surface layer is silt loam • Poorly suited to most residential/commercial uses due to seasonal wetness
	Providence	• Very deep; moderately well-drained • Found on narrow, convex ridges on undulating stream terraces; slopes range from 2 to 8% • Formed in loess and loamy marine deposits; surface layer is silt loam and silty clay loam

Chenneby-Rosebloom-Urbo	Chenneby	• Very deep; somewhat poorly drained • Found on floodplains; slopes range from 0 to 2% • Formed in loamy alluvium; surface layer is silt loam and silty clay loam • Poorly suited for most residential/commercial uses due to flooding and wetness
	Rosebloom	• Very deep; poorly drained • Found on floodplains; slopes range from 0 to 2% • Formed in silty alluvium; surface later is silty clay loam • Poorly suited for most residential/commercial uses due to flooding and wetness
	Urbo	• Very deep; somewhat poorly drained • Found on floodplains; slopes range from 0 to 3% • Formed in clayey alluvium; surface layer is silty clay loam • Poorly suited for most residential/commercial uses due to flooding and wetness
Iuka-Ochlockonee-Chenneby	Iuka	• Very deep; moderately well-drained • Found on floodplains along secondary streams; slopes are 0 to 2% • Formed in loamy alluvium; surface layer is silt loam • Poorly suited to most residential/commercial uses due to flooding
	Ochlockonee	• Very deep; well-drained • Found on floodplains along secondary streams; slopes range from 0 to 2% • Formed in loamy alluvium; surface layer is silt loam • Poorly suited to most residential/commercial uses due to flooding
	Chenneby	• Very deep; somewhat poorly drained • Found on floodplains along secondary streams; slopes range from 0 to 2% • Formed in loamy alluvium; surface layer is silt loam • Poorly suited to most residential/commercial uses due to flooding

Source: NRCS, 1997b

Prime Farmlands

Prime Farmland: Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops and is available for these uses. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

Prime farmland is one important kind of farmland defined by the U.S. Department of Agriculture (see text box). The importance of this type of farmland lies in its ability to help meet the short- and long-term food and fiber needs of the nation. Prime farmland can be cultivated land, pasture land, forest land, or other land. However, it cannot be urban or built-up land, or water areas (NRCS, 2001). Urban or built up land is defined as any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plans, and water-control structures. Public land is land not available for farming in National forests, National Parks, military reservations, and State parks (NRCS, 1997a). General characteristics of prime farmland include: adequate and dependable moisture supply (from precipitation or irrigation), acceptable acidity or alkalinity and sodium content, a favorable growing season and temperature, few or no rocks, protection from flooding during the growing season, no excessively erodible or saturated with water for long periods, and slopes ranging from 0 to 6 percent (NRCS, 2001).

The affected area in Alcorn County, Mississippi lies in and around the City of Corinth, an urban and built-up area. In addition, there are no soil types in Alcorn County that have few limitations restricting their use (SCS, 1971). It is very unlikely that soils present in the affected area are qualified for prime farmland classification.

There are about 81,035 acres of prime farmland in Hardeman County, Tennessee, covering approximately 19 percent of the County. Although there are scattered areas of prime farmland throughout the County, the vast majority of these lands are in the western part of the County. At least two prime farmland soil types are present in the affected area of the County, although in very minor amounts. These soil types are: 1) Iuka silt loam, occasionally flooded, which are found on floodplains along secondary streams, and 2) Chenneby silt loam, occasionally flooded, which are also found on floodplains (NRCS, 1997b).

There are about 70,016 acres of prime farmland in McNairy County, Tennessee, covering approximately 19 percent of the County. Prime farmland soils are scattered throughout the County. At least one prime farmland soil type is present in the affected area of the County. This soil type is Paden silt loam, with 2 to 5 percent slopes (NRCS, 1997a).

3.1.2 Water Resources

Average annual precipitation in Alcorn County is 52 inches, the vast majority of which falls as rain. Winter and spring are the wettest seasons in Alcorn County, Mississippi, and Hardeman and McNairy Counties, Tennessee. In winter months through the end of March, frequent heavy storms carry moisture north from the Gulf of Mexico in slow-moving, well-developed low pressure systems. Rains can last for several days. Autumn tends to be the driest season. Thunderstorms with brief but intense rains can occur during any month of the year, but are most frequent in July, occurring on one-third of all days in that month and typically between noon and 6 p.m. (SCS, 1971).

Most drainage in Alcorn County is toward the northwest via the Tuscumbia River and its tributaries. Western Alcorn County is drained by the Hatchie River, which enters the southwestern corner of the County and flows northward into Tennessee. Streams in the eastern part of Alcorn County, including Yellow, Chambers, and Sevenmile Creeks, all drain directly into the Tennessee River. Water flows sluggishly through the Tuscumbia River and its tributaries, which are partially filled with silt and sand washed in from upstream (SCS, 1971).

Water users in Alcorn County generally supply their residential, agricultural, commercial, and industrial needs using a combination of surface water (permanent and intermittent streams) and wells (SCS, 1971). In the eastern part of the County, springs and wells provide water for most farm homes, while streams and farm ponds furnish water for livestock. In the western part of the County, dug wells, springs, and deep-drilled wells are the common sources of water. In the City of Corinth (the County seat and largest settlement within Alcorn County), deep-drilled wells supply water for domestic and industrial use (Latch, 2001a).

Seasonal precipitation patterns in Hardeman County are similar to those for Alcorn County. Hardeman County averages 53 inches of precipitation, almost all of it rainfall as opposed to snow. The County includes many streams that flow permanently; it also contains many natural springs and artesian wells. Hardeman County has approximately 830 acres of open water in the form of farm ponds to provide water for livestock and wildlife, as well as for recreational purposes (NRCS, 1997b).

Slopes in Hardeman County range from level to very steep; most of the County could be called gently rolling. The majority of Hardeman County is drained by the Hatchie River and its tributaries. Water velocity in the Hatchie River and tributaries tends to be slow, except during spring, when it is moderate. Annual flooding in late winter and early spring is common (NRCS, 1997b).

Seasonal precipitation patterns in McNairy County are similar to those for Alcorn and Hardeman Counties. At 56 inches, average annual precipitation is slightly higher than its two neighbors. The County's topography generally consists of gently undulating ridges adjoining moderately steep to steep side slopes (NRCS, 1997a).

Three major river systems drain McNairy County: the Hatchie River, the Tuscumbia River, and the Tennessee River. The Hatchie River meanders through a small part of the southwestern edge of the County, but provides direct drainage to only a small portion of it. The Tuscumbia River and its tributary streams drain the western and central sections of McNairy County. The floodplains of both the Hatchie and the Tuscumbia are wide – up to one mile in places – and subject to periodic flooding. Flow in both the Hatchie and Tuscumbia is sluggish. The Tennessee River flows north and drains the eastern portion of the County (NRCS, 1997a).

Jurisdictional Wetlands

The regulatory definition of a Section 404 (Clean Water Act) jurisdictional wetland, according to the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE), is:

"*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*."

Source: EPA, 1980

With one notable exception, all of the sites recommended for inclusion in the Corinth Unit are located on upland (not lowland or wetland) environments. There are few or no streams present. Of those that are present, most are intermittent, not permanent, watercourses, flowing only during wetter seasons or only during rain events. The major exception is the Davis Bridge Battlefield property, located in Hardeman County, Tennessee, along the Hatchie River in a bottomland, wooded setting. This property includes "waters of the United States," and perhaps associated "jurisdictional wetlands," under the jurisdiction of the U.S. Army Corps of Engineers (USACE).

3.1.3 Air Quality

Under the Federal Clean Air Act (CAA), as amended in 1977 and 1990 (40 CFR 50), the U.S. Environmental Protection Agency (EPA) has established air quality standards in regard to the types of air pollutants emitted by internal combustion engines, such as those in aircraft, vehicles, and other sources. These National Ambient Air Quality Standards (NAAQS) are established for six contaminants, referred to as criteria pollutants, and apply to the ambient air (the air that the general public is exposed to every day) (EPA, 2003). These criteria pollutants include carbon monoxide, ozone, particulate matter, nitrogen oxides, sulfur dioxide, and lead, and are described below.

1. ***Carbon Monoxide (CO).*** CO is a colorless, odorless, toxic gas produced by the incomplete combustion of organic materials used as fuels. CO is emitted as a by-product of essentially all combustion.
2. ***Ozone (O_3).*** O_3 is a photochemical oxidant and a major constituent of smog. Ozone is formed when two precursor pollutants, hydrocarbons and nitrogen oxides, react chemically in the presence of sunlight.
3. ***Particulate Matter (PM_{10}).*** PM_{10} are fine particles less than 10 micrometers in diameter. PM_{10} includes solid and liquid material suspended in the atmosphere and formed as a result of incomplete combustion.
4. ***Sulfur Dioxide (SO_2).*** SO_2 is a corrosive and poisonous gas produced mainly from the burning of sulfur-containing fuel.
5. ***Nitrogen Oxides (NOx).*** NO_x are poisonous and highly reactive gases produced when fuel is burned at high temperatures, causing some of the abundant nitrogen in the air to burn as well.
6. ***Lead (Pb).*** Pb is a toxic heavy metal, the most significant emissions of which derive from gasoline additives, iron and steel production, and alkyl lead manufacturing (EPA, 2003).

In addition to these six criteria pollutants, Volatile Organic Compounds (VOCs) are a source of concern and are regulated as a precursor to ozone. VOCs are created when fuels or organic waste materials are burned. Most hydrocarbons are presumed to be VOCs in the regulatory context, unless otherwise specified by the U.S. EPA.

The NAAQS include primary and secondary standards (see text box). Areas where the ambient air quality does not meet the NAAQS are said to be non-attainment areas. Areas where the ambient air currently meets the national standards are said to be in attainment. Alcorn County, Mississippi and McNairy and Hardeman Counties, Tennessee are in attainment for all six criteria pollutants (EPA, 2003).

NAAQS for Criteria Pollutants

Under the CAA, the EPA has established limits on the average levels of pollutants in the air to which the general public is exposed (ambient air). **Primary Standards** establish the level of air quality necessary to protect public health from any known or anticipated adverse effects of a pollutant, allowing a margin of safety to protect sensitive members of the population. **Secondary Standards** establish the level of air quality necessary to protect public welfare by preventing injury to agricultural crops and livestock, deterioration of materials and property, and adverse impacts on the environment, including prevention of reduced visibility.

Existing information on air quality was reviewed to identify air quality issues, with particular attention paid to background ambient air quality compared to the primary NAAQS. Relevant regulatory requirements under the conformity provision of Section 176(c) of the CAA, as amended in 1990, provide that Federal agencies are prohibited from engaging in, supporting in any way, providing financial assistance for, licensing, permitting, or approving, any activity which does not conform to an applicable State implementation plan under the CAA. Federal actions must be "in conformity" with whatever restrictions or limitations the State has established for air emissions necessary to attain compliance with NAAQS.

For the State of Mississippi, the Mississippi Department of Environmental Quality (MDEQ), Office of Pollution Control, Air Division is responsible for ensuring that air quality within the State protects public health and welfare. The division is charged with controlling, preventing, and abating air pollution to achieve compliance with air emission regulations under the Mississippi Air and Water Pollution Control Law (MS Code Annotated 49-17-1 through 49-17-43), in addition to complying with the Federal CAA and its regulations (MDEQ, 2001b).

For the State of Tennessee, the Tennessee Department of Environment and Conservation (TDEC), Division of Air Pollution Control was established to accomplish control and abatement of air pollution in the State and to maintain the purity of the air resources within the State to protect normal health, general welfare, and physical property of the people, while preserving maximum employment and enhancing the industrial development of the State. Air emission standards are established by the Division of Air Pollution Control and procedural requirements for monitoring industries in Tennessee are conducted via the issuance of construction and operating permits to achieve compliance with the Tennessee Air Quality Act (Tennessee Code Annotated Section 53-3408 et seq.) and its implementing regulations (TDEC, No date 1).

Federal activities that are transit-related must meet U.S. EPA's Transportation Conformity Rule; all other Federal activities are subject to U.S. EPA's General Conformity Rule (40 CFR 51). The action being proposed by the NPS would come under the General Conformity Rule. For Federal actions subject to the General Conformity Rule, a conformity determination must be made for each pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a Federal action would equal or exceed the thresholds established under the rule. These thresholds are referred to as *de minimis* criteria, and vary depending upon the pollutant. For these purposes, the term *de minimis* refers to, among other things, emissions that are "so small as to be negligible or insignificant." If an action is below the *de minimis* emission threshold, then a conformity determination is not required under the General Conformity Rule. The thresholds established under the General Conformity Rule are 100 tons per year or less for each in order to qualify for *de minimis*. If the *de minimis* criteria are exceeded, then a conformity determination must be made pursuant to the requirements of the General Conformity Rule. Even though Alcorn, McNairy, and Hardeman Counties are in attainment for all criteria pollutants, this project must establish its compliance with *de minimis* criteria because of the General Conformity Rule.

3.1.4 Vegetation and Wildlife

Each of the sites being considered for inclusion into the Corinth Unit is located in what ecologists and botanists term the Southern Mixed Forest Province (Bailey, 1995). Prior to the arrival of European Americans, northeastern Mississippi and southwestern Tennessee were virtually entirely covered by forest (NRCS, 1997b). The old-growth forests of this province were logged and cleared for the first time by European-American settlers in the eighteenth and nineteenth centuries. Now, only fragments of second-growth forest remain, interspersed with cropland, pasture, grazing land, and developed areas. About 60 percent of Hardeman County, for example, is forested today (NRCS, 1997b).

What is "Climax Vegetation?"

Climax vegetation is the structure and species composition that a particular floral community in a given ecosystem or biome (large-scale plant communities) will tend toward via the successional process in the absence of disturbances such as fire, major disease or insect infestations, clearing, or logging. Depending on the type of community (e.g., forest vs. grassland), it can take anywhere from decades to centuries for the climax community to be reached. Climax communities are regarded as self-perpetuating (able to persist indefinitely unless disturbed). A farm field abandoned in northern Mississippi or southern Tennessee will eventually end up as a tall forest, but this will take more than 100 years.

Climax vegetation in the Southern Mixed Forest Province consists of medium-height to tall forests of broadleaf deciduous and needleleaf evergreen trees, principally pines (Bailey, 1995). Common broadleaf canopy or overstory trees in this part of the province include oaks (*Quercus sp*.), hickories (*Carya* sp.), beech (*Fagus grandifolia*), sweetgum (*Liquidambar styraciflua*), blackgum or black tupelo (*Nyssa sylvatica*), red maple (*Acer rubrum*), and winged elm (*Ulmus alata*). Loblolly pine (*Pinus taeda*), shortleaf pine (*P. echinata*), and other southern yellow pine species, singly or in combination, may also be present. The oak-history forest tends to predominate on upland sites where most of the potential Corinth Unit properties are found; southern yellow pines frequently predominate on sites where the oak-history forest has been cut (NRCS, 1997b).

Important non-dominant species in the Southern Mixed Forest Province include pignut hickory (*Carya glabra*), mockernut hickory (*C. tomentosa*), shortleaf pine, southern sugar maple (*Acer barbatum*), American hornbeam (*Carpinus caroliniana*), flowering dogwood (*Cornus florida*), inkberry (*Ilex glabra*), American holly (*I. opaca*), yellow-poplar (*Liriodendron tulipifera*), eastern hophornbeam (*Ostrya virginiana*), southern red oak (*Quercus falcata*), and post oak (*Q. stellata*). Understory and ground cover species include tickclover (*Desmodium spp*.), lespedeza (*Lespedeza spp*.), butterfly pea (*Clitoria mariana*), senna (*Cassia spp*.), tephrosia (*Tephrosia virginiana*), galactia (*Galactia spp*.), wild indigo (*Baptisia spp*.), and *Heterotheca graminifolia*.

The main grasses in the Southern Mixed Forest Province are bluestem, panicums, and longleaf uniola. Shrubs and small trees, including dogwood, viburnum, haw, blueberry, American beautyberry, youpon, and numerous woody vines, are common. Some of the cultivated plants occurring on croplands in Alcorn, Hardeman, and McNairy Counties, such as soybeans, corn, cotton, wheat, grain sorghum, and hay crops, and on pastureland, including tall fescue, white

clover, bermudagrass, alfalfa, and lespedeza, have value for wildlife as food, cover, or nesting materials (SCS, 1971; NRCS, 1997a; 1997b).

Mammals in the Southern Mixed Forest Province include a number of species widespread throughout eastern and southern North America, such as the opossum, raccoon, striped skunk, red and gray foxes, coyote, bobcat, white-tailed deer, feral pig, gray, fox and southern flying squirrels, and cottontail rabbit. Several species of wetland furbearers also occur in these three counties, including mink, muskrat, and beaver (NRCS, 1997b).

Figure 3.1.4-1. Second Growth Forest on Union Earthworks Near Farmington (Alcorn County)

Birds in the province are just as diverse, including representatives from the game birds, songbirds, raptors, waterfowl, and other groups. Prominent species include the wild turkey, bobwhite quail, mourning dove, warblers, woodpeckers, robin, cardinal, eastern meadowlark, flycatchers, sparrows, Carolina wren, Carolina chickadee, blue jay, ruby-throated hummingbird, eastern towhee, and tufted titmouse (Bailey, 1995). Low to moderate population levels of migratory waterfowl, such as the mallard, wood duck, blue-wing teal, widgeon, bufflehead, Canada geese, and snow geese, also occur, drawn by farm ponds and larger flood control reservoirs. Common birds of prey include the red-tailed hawk, kestrel, barred owl, and screech owl (NRCS, 1997b).

Figure 3.1.4-2. Corinth October Battlefield Site, Located in an Old Field Habitat Type Dominated By Annual and Perennial Grasses

Many reptiles and amphibians are found in Alcorn, McNairy, and Hardeman Counties. Snakes include the cottonmouth, copperhead, rough green snake, rat snake, coachwhip, and speckled kingsnake. Salamanders, frogs, and turtles are also common (USDA, 1995).

Most of the potential Corinth Unit sites are located in semi-rural settings. Some of the sites are wooded (see **Figure 3.1.4-1**), while others are old fields (**Figure 3.1.4-2**). Still others partially cleared and partially wooded. In general, the sites support wildlife typical of semi-rural and rural areas in this part of the United States. Habitats

are highly fragmented (broken into smallish units of irregular shape) with many edges. Along edges between two or more different habitats, both species associated primarily or exclusively with only one habitat or the other can be found there. Therefore, the "edge effect" tends to raise species diversity on any one site, but generally signifies low to moderate overall wildlife diversity across the region.

Figure 3.1.4-3. Bottomland Forest and Hatchie River at the Davis Bridge Battlefield Site

Of all of the sites being considered for inclusion in the Corinth Unit, the site with the greatest value for wildlife is the Davis Bridge Battlefield site on the Hatchie River. The site is includes bottomland, riverine forest with relatively mature trees (see **Figure 3.1.4-3**). This site would be expected to support a greater diversity and abundance of wildlife characteristic of the region than any of the other potential Corinth Unit sites.

3.1.4.1 Threatened and Endangered Species and Species of Concern

The most recent and comprehensive data regarding the potential presence of federally and State-listed plant and animal species within Alcorn County, Mississippi, and Hardeman and McNairy Counties, Tennessee, are presented below, by county. Also provided below is a description of each State's ranking criteria for plant and animal species within the State.

Alcorn County, Mississippi

No federally listed threatened or endangered plant or animal species are known to occur in Alcorn County (USFWS, 2000; Gregg, 2002). However, five species of plants and six species of animals are listed by the Mississippi Natural Heritage Program as being of "special concern" in Alcorn County, for the reasons given below. Mississippi special concern plant species recorded from Alcorn County are listed in **Table 3.1.4-1**; special concern animal species are listed in **Table 3.1.4-2**.

Table 3.1.4-1. Mississippi Special Concern Plant Species Occurring in Alcorn County

Scientific Name	Common Name	State Rank
Chelone glabra	White Turtlehead	S3
Platanthera integrilabia	White Fringeless Orchid	S1
Platanthera peramoena	Purple Fringeless Orchid	S2, S3
Salvia urticifolia	Nettle-lead Sage	S2, S3
Silene ovata	Ovate Catchfly	S1, S2

Source: MMNS, No date 1

Table 3.1.4-2. Mississippi Special Concern Animal Species Occurring in Alcorn County		
Scientific Name	**Common Name**	**State Rank**
Aimophila aestivalis	Bachman's Sparrow	S3?B, SZN
Cyprinella whipplei	Steelcolor Shiner	S3
Etheostoma zonistium	Bandfin Darter	S2
Procambarus ablusus	A crayfish	S3
Pseudotriton rubber	Red Salamander	S3
Zapus hudsonius	Meadow Jumping Mouse	S1

Source: MMNS, No date 2

The Mississippi Natural Heritage Program uses the ranking system developed by The Nature Conservancy. State ranks are assigned to native plant and animal species based on the species' documented occurrences and distribution in the State of Mississippi. Other factors affecting a species' State rank include the species' habitat and threats to existing populations. The applicable Mississippi State rankings are defined as follows:

State Rank:

S1 Species is critically imperiled in Mississippi because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it vulnerable to extirpation.

S2 Species is imperiled in Mississippi because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it vulnerable to extirpation.

S3 Species is rare or uncommon in Mississippi (21 to 100 occurrences).

SZ No occurrences of the species in the State; not of practical conservation concern in the State, because there are no definable occurrences, although the taxon is native and appears regularly in the State.

State Rank Qualifiers:

? Not exact
N Non-breeding

The Mississippi species of special concern have no legal protection, but the State monitors their status and keeps the U.S. Fish and Wildlife Service (USFWS) aware of this information. If the status throughout the entire range of a given species, sub-species, or variety were to deteriorate even more in the future, this plant or animal could conceivably become listed as threatened or endangered by the Federal government, whereupon it would receive protection under the Federal Endangered Species Act (ESA).

Hardeman County, Tennessee

One federally listed endangered species, the gray bat (*Myotis grisescens*), has been documented in Hardeman County. This species is represented by a single record from 1968, when one specimen was mist-netted above Clear Creek (Brians, 2002). The gray bat is a small bat that roosts in caves generally within one mile of a water body. In the summer, gray bats use warm caves, in which they establish maternal and bachelor colonies. In the winter, they relocate and hibernate in several small cold caves. Gray bats are insect eaters and often hunt and feed over water (Johnson and Wehrle, 2002).

Gray bats can be adversely affected by logging if their roost sites are disturbed or if wooded corridors that furnish them cover on nightly flights between roosting and feeding sites are removed. As insect eaters, they are also susceptible to pesticides. A recovery plan for the gray bat was approved in 1982, and the species is noted to be increasing throughout its range (NPWRC, No date). Gray bat populations have risen because of better protection measures, including gates, fences, and signs around caves; better cave gate designs to restrict human disturbance; and improved public education programs. The USFWS has issued no-jeopardy biological opinions on probable impacts of some pesticides on the gray bat; these identify buffer zones and/or time restrictions on pesticide application as reasonable and prudent measures to minimize incidental take (NPWRC, No date).

Since only one specimen has ever been documented in Hardeman County, and this specimen was recorded 34 years ago, the presence of the gray bat within the County may be regarded as possible, but by no means certain.

Four species and/or varieties of plants and fifteen species and/or sub-species of animals in Hardeman County are listed by the TDEC, Division of Natural Heritage, as endangered, threatened, or special concern (TDEC, 2002a). Tennessee endangered, threatened, or special concern plant species recorded from Hardeman County are listed in **Table 3.1.4-3**; animal species are listed in **Table 3.1.4-4**.

Table 3.1.4-3. Tennessee Endangered, Threatened, or Special Concern Plant Species Occurring in Hardeman County

Scientific Name	Common Name	State Status	State Rank
Ceratophyllum echinatum	Prickly Hornwort	S	S1
Magnolia Virginia	Sweetbay Magnolia	T	S2
Platanthera flava var. flava	Southern Rein-Orchid	S	S2, S3
Symplocos tinctoria	Horse-sugar	S	S2

Source: TDEC, 2002a

Table 3.1.4-4. Tennessee Endangered, Threatened, or Other Rare Animal Species Occurring in Hardeman County

Scientific Name	Common Name	State Status	State Rank
Fallicambarus hortoni	Hatchie Burrowing Crayfish	E	S1
Chondestes grammacus	Lark Sparrow	T	S1B
Limnothlypis swainsonii	Swainson's Warbler	D	S3
Nyctanassa violacea	Yellow-crowned Night Heron		S3
Myotis grisescens	Gray Bat	E	S2
Sorex longirostris	Southeastern Shrew	D	S4
Synaptomys cooperi	Southern Bog Lemming	D	S4
Zapus hudsonius	Meadow Jumping Mouse	D	S4
Macroclemys temminckii	Alligator Snapping Turtle	D	S2, S3
Ophisarus attenuatus longicaudus	Eastern Slender Glass Lizard	D	S3
Sistrurus miliarius streckeri	Western Pygmy Rattlesnake	T	S2, S3
Hyla gratiosa	Barking Treefrog	D	S3
Ammocrypta beani	Naked Sand Darter	D	S2
Ammocrypta vivax	Scaly Sand Darter	D	S2
Noturus stigmosus	Northern Madtom	D	S3

Source: TDEC, 2002a

The TDEC, Natural Heritage Program State status and State ranking system for plants and animals are described below. State ranks are assigned to native plant and animal species based on the species' documented occurrences and distribution in the State of Tennessee. Other factors affecting a species' State rank include the species' habitat and threats to existing populations. Some State status categories apply to State-listed plants only, while some apply only to State-listed animals. In these instances, the correct species type is noted.

State Status:

E **Endangered Species:** Any species or subspecies whose prospects of survival or recruitment within the State are in jeopardy or are likely to become so within the foreseeable future, including, but not limited to, all species of plants and animals determined to be an "endangered species" pursuant to the Federal ESA.

T **Threatened Species:** Any species or subspecies which appears likely, within the foreseeable future, to become endangered throughout all or a significant portion of its range in Tennessee, including, but not limited to, all species of plants and animals determined to be a "threatened species" pursuant to the Federal ESA.

D **"Deemed in Need of Management" (Animals Only):** Any species or subspecies of non-game wildlife which the executive director of the Tennessee Wildlife Resources Agency believes should be investigated in order to develop information relating to populations, distribution, habitat needs, limiting factors, and other biological and ecological data to determine management measures

necessary for their continued ability to sustain themselves successfully. This category is analogous to "Special Concern" status used for rare plants in the State.

S **Special Concern Species (Plants Only):** Any species or subspecies of plant that is uncommon in Tennessee, or has unique or highly specific habitat requirements or scientific value, and therefore, requires careful monitoring of its status.

CE **Commercially Exploited (Plants Only)** (State status modifier): Due to large numbers being taken from the wild and propagation or cultivation insufficient to meet market demand. These plants are of long-term conservation concern, but the TDEC, Division of Natural Heritage does not recommend they be included in the normal environmental review process.

State Rank:

S1 The species is extremely rare and critically imperiled in the State with 5 or fewer occurrences, or very few remaining individuals, or because of some special condition where the species is particularly vulnerable to extirpation from Tennessee.

S2 The species is very rare and imperiled within the State, 6 to 20 occurrences and less than 3,000 individuals, or few remaining individuals, or because of some factor(s) making it vulnerable to extirpation from Tennessee.

S3 The species is rare and uncommon in the State, from 21 to 100 occurrences.

S4 The species is widespread, abundant, and apparently secure within the State, though it may be quite rare in parts of its range, especially at the periphery, and is of long-term concern.

State Rank Qualifiers:

B Breeding

McNairy County, Tennessee

No federally listed threatened or endangered plant or animal species are listed in McNairy County. The red-cockaded woodpecker (*Dendrocopos borealis*) was formerly present in the County, but has now been extirpated from the entire State of Tennessee (Brians, 2002).

Twelve species and/or varieties of plants and fifteen species and/or sub-species of animals in McNairy County are listed by the TDEC, Division of Natural Heritage, as endangered, threatened, or special concern (TDEC, 2002b). Tennessee endangered, threatened, or special concern plant species recorded from McNairy County are listed in **Table 3.1.4-5**; animal species

are listed in **Table 3.1.4-6**. Descriptions of the State status and State ranking system for species in McNairy County are the same as those provided for Hardeman County above.

Table 3.1.4-5. Tennessee Endangered, Threatened, or Special Concern Plant Species Occurring in McNairy County

Scientific Name	Common Name	State Status	State Rank
Aster ericoides	White Heath Aster	T	S1
Cyperus plukenetii	Plukenet's Galingale	S	S1
Drosera capillaris	Pink Sundew	T	S1
Eleocharis tortilis	Twisted Spike-rush	S	S1
Magnolia virginiana	Sweetbay Magnolia	T	S2
Panax quinquefolius	American Ginseng	S-CE	S3, S4
Plantago cordata	Heart-leaved Plantain	E	S1
Platanthera flava var. flava	Southern Rein-Orchid	S	S2, S3
Polygala mariana	Maryland Milkwort	S	S1
Polytaenia nuttallii	Prairie Parsley	T	S1
Silene ovata	Ovate Catchfly	E	S2
Stylisma humistrata	Southern Morning-glory	T	S1

Source: TDEC, 2002b

Table 3.1.4-6. Tennessee Endangered, Threatened, or Other Rare Animal Species Occurring in McNairy County

Scientific Name	Common Name	State Status	State Rank
Aimophila aestivalis	Bachman's Sparrow	E	S2
Anhinga anhinga	Anhinga	D	S1B
Buteo lineatus	Red-shouldered Hawk		S4B
Chondestes grammacus	Lark Sparrow	T	S1B
Limnothlypis swainsonii	Swainson's Warbler	D	S3
Thryomanes bewickii	Bewick's Wren	E	S1
Sorex longirostris	Southeastern Shrew	D	S4
Macroclemys temminckii	Alligator Snapping Turtle	D	S2, S3
Ophisarus attenuatus longicaudus	Eastern Slender Glass Lizard	D	S3
Sistrurus miliarius streckeri	Western Pygmy Rattlesnake	T	S2, S3
Hyla gratiosa	Barking Treefrog	D	S3
Ammocrypta beani	Naked Sand Darter	D	S2
Ammocrypta vivax	Scaly Sand Darter	D	S2
Etheostoma pyrrhogaster	Firebelly Darter	D	S2
Noturus stigmosus	Northern Madtom	D	S3

Source: TDEC, 2002b

3.2 CULTURAL RESOURCES

A *cultural resource* is an aspect of a cultural system that is valued by or significantly representative of a culture or that contains significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects included in or eligible for inclusion in the National Register of Historic Places (NRHP). All entries in the NRHP are called "historic properties." As defined by the National Historic Preservation Act (NHPA), a historic property or historic resource is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP, including any artifacts, records, and remains that are related to and located in such properties.

National Register of Historic Places (NRHP): The comprehensive list of districts, sites, buildings, structures, and objects of national, regional, state, and local significance in American history, architecture, archaeology, engineering, and culture kept by the NPS under authority of the NHPA of 1966.

Historic Property: A district, site, structure, or landscape significant in American history, architecture, engineering, archaeology, or culture; an umbrella term for all entries in the National Register of Historic Places (NRHP).

For NPS management purposes, tangible cultural resources include archaeological resources, cultural landscapes, structures, museum objects, and ethnographic resources. *Archaeological resources* include any material remains or physical evidence of past human life or activities, which are of archaeological interest, including the record of the effects of human activities on the environment. Archaeological resources are capable of revealing scientific or humanistic information through archaeological research. A *cultural landscape* is a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person exhibiting other cultural or aesthetic values. *Structures* include any constructed work, usually immovable by nature or design, consciously created to serve some human activity. *Museum objects* are material things possessing functional, aesthetic, cultural, symbolic, and/or scientific value, usually movable by nature or design. *Ethnographic resources* include sites, structures, objects, landscapes, or natural resource features assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

Section 106 of the NHPA (P.L. 89-655) provides the framework for Federal review and consideration of cultural resources during Federal project planning and execution. The implementing regulations for the Section 106 process (36 CFR Part 800) have been promulgated by the Advisory Council on Historic Preservation (ACHP). Section 106 mandates that Federal agencies take into account the effects of their undertakings or actions on properties listed or eligible for listing in the NRHP and give the ACHP a reasonable opportunity to comment. The implementing regulations at 36 CFR 800.16(v) define an undertaking as "a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a Federal agency."

In May 1991, the Siege and Battle of Corinth National Historic Landmark (NHL) was designated by the Secretary of the Interior, and includes 16 properties. An NHL is a special type of historic property designated because of its national importance in American history, architecture, archaeology, engineering, or culture. Section 800.10 of the ACHP's regulations (36 CRF 800), as well as Section 110(f) of the NHPA, specify special protections for NHLs. The 16 properties of the Siege and Battle of Corinth NHL are listed in **Table 3.2-1**, along with a description of the condition of and/or potential threats to the resources on each property. Some of the properties included in the NHL are also under consideration for addition to the Corinth Unit of Shiloh NMP, although the NHL-designation applies to a smaller acreage than the acreage under consideration for the Corinth Unit. **Table 3.2-1** notes which NHL sites are also under consideration for addition to the Corinth Unit.

National Historic Landmark (NHL): A special type of historic property (district, site, building, structure, or object) designated by the Secretary of the Interior under authority of the Historic Sites Act of 1935 because of its national importance in American history, architecture, archaeology, engineering, or culture. Section 800.10 of the ACHP's regulations (36 CRF 800), as well as Section 110(f) of the NHPA, specify special protections for NHLs.

Table 3.2-1. Siege and Battle of Corinth NHL Properties and Potential Threats

Property	Potential Corinth Unit Site?	Site Condition/Potential Threats
First Phase, Battle of Corinth October 3rd Battlefield	Yes	• Pastoral character, primarily farmland (pasture) • Five buildings located near the crossing of the Southern Railroad and Wenasoga Road encroach the property
Battery F	Yes	• Area around the battery is under residential development
Battery Robinett	Yes	• Park-like setting • Site of new Corinth Civil War Interpretive Center
Confederate Earthworks Between the Mobile & Ohio Railroad and the Purdy Road (1862 Beauregard Line)	Yes	• Some earthworks impacted by erosion, others are badly damaged, others are in excellent condition • Small heavy construction company located across the street from the earthworks
Harper Road Union Earthworks (Army of the Tennessee: Davies' May 21st Line)	Yes	• Plowed field on west side of earthworks • Earthworks covered by hardwood and pine trees • No significant immediate threats, but nearby residential development pressure could substantially alter historic setting
Union Siege Lines: Maj. Gen. Sherman's and Brig. Gen. Davies' Divisions (Union Army of the Tennessee Siege Fortifications: Davies' May 19th Line)	Yes	• One section of earthworks is covered by mowed grass and open canopy of trees • Cultivated fields surround other section • Phase I Environmental Site Assessment was conducted on the property, and found no hazardous materials on the site • Portions of earthworks have been impacted by field roads, a State highway, cultivation, a post-Civil War farmhouse, and a municipal water facility • No significant immediate threats, but nearby residential development pressure could substantially alter historic setting
Union Siege Lines: Army of the Tennessee (Brig. Gens.	Yes	• Portion of earthworks leveled by cultivation • Covered by overgrowth and trees

McKean's and Sherman's Divisions) and Union Army of the Ohio (Brig. Gens. Wood's and Nelson's Divisions (Nelson's May 17th Line))		• Rifle pits broken in two places by unimproved field roads • Emplacement to southwest of earthworks has been leveled by bulldozing for a farm equipment parking lot and impacted by erosion • Currently impacted by ORV use and logging • No significant immediate threats, but nearby residential development pressure could substantially alter historic setting
Union Siege Line: Army of the Mississippi (Brig. Gen. Paine's Division (Paine's and Stanley's May 17th Farmington Line))	Yes	• Area is kept as a grassy mowed field with few hardwood trees • Portions of earthworks have been impacted by erosion, road right-of-way work, logging and other human activity, and construction of the Farmington municipal water tower • No significant immediate threats, but nearby residential and commercial development pressure could substantially alter historic setting
Confederate Rifle-Pit	No	• Trench infilled by slope wash from the embankment • Earthwork is devoid of sod and subject to erosion
Corinth National Cemetery	No	• Two noncontributing buildings on property • No immediate or future threats identified
Railroad Crossover	No	• Continues to function as an active transportation hub
Davis Bridge: Battle of the Hatchie (October 5, 1862)	Yes	• River banks have eroded slightly • The bridge at the site is no longer extant • A few single-family homes within or near battlefield • No significant immediate threats, but nearby residential development pressure could substantially alter historic setting and the possibility of timbering could contribute to erosion
Duncan House	No	• Alterations since construction include relocation of the house, construction of a full-width porch, removal of some interior partitions and trim
Oak Home	No	• Alterations since construction include enlargement of the house, interior remodeling, and relandscaping and fencing of grounds
Fish Pond House	No	• Alterations since construction include removal of projection on roof that contained a cistern, expansion to the rear of house, minor exterior changes, and removal of an interior sidewall
Curlee House (Veranda House)	No	• Alterations to the exterior since construction include replacement of chimneys and roof and construction of a frame addition to the rear elevation

Sources: NPS, No date; 2003

Table 3.2-2 lists the remaining properties being considered for inclusion into the Corinth Unit, along with existing threats to those properties and/or resources.

Table 3.2-2. Remaining Potential Corinth Unit Sites and Their Current Threats

Property	Site Condition/Potential Threats
Fallen Timbers Battlefield	• Retains a high degree of integrity, although area has been impacted by several roads, cultivation, a post-Civil War farmstead, and scattered houses along the roads • No significant immediate threats, but nearby residential and/or commercial development pressure or subdivision of the battlefield property could substantially alter historic setting
Farmington Battlefield	• Engagement area has been somewhat compromised by construction of modern homes and other structures along the roads and continuing expansion of the Farmington community • Nearby residential and/or commercial development pressure or subdivision of the engagement area properties could substantially alter historic setting

Russell House Battlefield	• Earthworks have been affected by the placement of a utility natural gas line • Area has been impacted by roads, cultivation, and scattered houses along roads • No significant immediate threats, but nearby residential and/or commercial development pressure could substantially alter historic setting
Boxe House Battery	• Battery site sits in a housing subdivision, but is largely covered with trees and the field of fire remains open • Interior walls of earthworks have eroded • Site is threatened by further development that could substantially reduce its integrity and adversely impact extant elements of its historic setting
Corona College	• Property is pastoral and fronted by commercial development along Highway 72 • Property is subject to commercial development due to its location near the intersection of Highways 72 and 45, a growing commercial area in Corinth
Contraband Camp	• Located in semi-urban area with modern homes constructed along adjacent roads • Site covered with underbrush and hardwood and pine trees • No significant immediate threats, but nearby residential and/or commercial development pressure could substantially alter historic setting
Camp Davies	• Site has been impacted by a County road, cultivation, erosion, and establishment of a cemetery • Earthworks of western portion retain a high degree of definition, and lose definition east of County road • No significant immediate threats, but nearby residential and/or commercial development pressure could substantially alter historic setting
Federal Redan	• Site retains a high degree of integrity, but has been impacted by a County road to the north end of the property and erosion • No significant immediate threats, but nearby residential and/or commercial development pressure could substantially alter historic setting
Camp Glendale	• No significant immediate threats, but long-term protection is not ensured

In 1995, the Corinth Civil War Mapping and Documentation Project mapped Civil War features in the Corinth area to provide comprehensive documentation of the area's resources. The project was a public-private partnership involving the NPS' Cultural Resources Geographic Information Systems (CRGIS), the SBCC, the Mississippi Department of Archives and History, Alcorn County, City of Corinth, Tennessee Division of Archaeology, Shiloh NMP, and American Battlefield Protection Program. The project's surveyors mapped 7.5 miles of surviving field fortifications and associated features. Of this total, 69 percent (5.2 miles) of the Civil War trenches were in Alcorn County, Mississippi, 16 percent (1.2 miles) in McNairy County, Tennessee, and 15 percent (1.1 miles) within the Corinth city limits. These resources are fragmented in more than 50 locations in the area. [Research and map files compiled during the preparation of this study may be found in the collections of the NPS' American Battlefield Protection Program.] To determine how many miles of field fortifications were originally dug by the armies during the Siege and Battle of Corinth, CRGIS digitized a military map dating from 1862, collected Global Positioning System positions, and then layered the depicted resources over a modern map. Through this process, CRGIS determined that the original entrenchments extended 40.9 miles. Of those shown on the military map, fewer than 18 percent (7.5 miles) remain extant. Only 16 percent (1.2 miles) of the extant resources were rated in good condition, while 39 percent (2.9 miles) were considered poor and 45 percent (3.4 miles) were rated fair. No buildings remain extant at any of the properties. However, the earthworks are considered structures by NRHP definition.

The Mississippi Department of Archives and History, which includes the State Historic Preservation Officer (SHPO), is responsible for documenting historic sites and properties across the State of Mississippi under the NHPA. In Tennessee, this responsibility is given to the TDEC, Division of Archaeology, which reviews all State and Federal projects to determine the impact on archaeological resources within the State, and to the Tennessee Historical Commission.

Archaeological studies on the Battery Robinett site, to date, have included Ground Penetrating Radar (GPR) testing, systematic shovel tests, and use of metal detectors by NPS archaeologists, contractors, and scholars. The Mississippi Department of Archives and History, conducted an archaeological excavation of Battery Robinett in 1978. The original site was re-established through the use of maps showing the Corinth defenses, as prepared by Union engineers, as well as topographical configurations. The archaeologists established the western line of the Civil War earthworks by excavating four test trenches with a backhoe. Three of these revealed the line of an infilled trench, believed to be the western ditch, in the soil profile. Civil War-era photographs show that the original Battery Robinett had irregular, angular sides, lending it somewhat of a horseshoe appearance (NPS, No date; Wright, 1978). In addition, GPR testing has indicated the subsurface presence of human remains under Colonel Rogers' monument, confirming historical accounts of his burial in front of the earthworks he was attempting to storm when killed. However, other nearby tombstones appear to be commemorative, as GPR testing did not identify any skeletal material underneath them.

Over 300 historic sites and structures in the City of Corinth and Alcorn County have been listed on the NRHP. Two NRHP districts are also present within Corinth: the Downtown Historic District, which contains 91 contributing buildings, and Midtown Historic District, which contains 230 contributing buildings. An additional historic district in Alcorn County, the Rienzi Commercial Historic District, contributes 6 buildings in Rienzi to the NRHP. Fifteen other sites and structures in the City and County are individually listed in the NRHP. In addition, 11 properties within Alcorn County have been designated as Mississippi Landmarks by the Board of the Mississippi Department of Archives and History under the Antiquities Law of Mississippi (TAPP, 2000).

To provide a greater measure of protection and preservation for historic resources, the City of Corinth passed a historic preservation ordinance in 1993, and designated part of downtown Corinth as a local historic district. The Downtown Preservation District follows the same boundaries as the NRHP Downtown Historic District, and includes much of historic commercial core of Corinth. The Preservation District designation requires design review by the Preservation Commission prior to changing existing buildings or new construction within the boundaries of the district. The Commission also works with landowners to preserve historic properties on their lands (TAPP, 2000).

As described by the NPS DO-28, *Cultural Resource Management Guideline*, a cultural landscape is "...a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural

values and tradition." There are currently no identified cultural landscapes at or near any of the properties being considered for inclusion in the Corinth Unit (Koning, 2003).

3.3 VISITOR USE AND EXPERIENCE

> **Visitor/Recreation Experience:**
> The psychological and physiological response from participating in a particular recreation activity in a specific park setting.
>
> Source: Haas, 2001

Visitor or recreation experience is defined as "the psychological and physiological response from participating in a particular recreation activity in a specific park setting" (Haas, 2001). Visitor use and experience are a function of the interaction between an individual's expectations, motivations, past experiences, and personality traits and the recreational carrying capacity of a park. Recreational carrying capacity is defined as "a prescribed number and type of people that an area will accommodate given the desired natural/cultural resource conditions, visitor experiences, and management program" (Haas, 2001). The carrying capacity for a park is formed by the convergence of two human and physical constraints: 1) what is considered to be a crowded condition, given the park's physical and environmental resources and the visitor experience intended by management, and 2) the level of use that a park can sustain without suffering environmental degradation.

The NPS defines recreational carrying capacity as "the type and level of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement the purpose of a park unit and its management objectives" (VERP, 1997). Broadly, it is the maximum number of people that can use a site on an hourly, daily, monthly, or annual basis without degrading the resource base, and while maintaining the integrity of the historic experience. A site's carrying capacity is restricted by several factors, including:

1) the type of visitor experience desired by park managers;
2) the level of resource protection needed to maintain that visitor experience;
3) assurance of visitor safety; and
4) park staffing levels (NPS, 2000b).

Visitor use and experience at a National Park is defined by undergoing a carrying capacity analysis (VERP, 1997). The bases for such an analysis are mission, purpose, and significance statements. A mission statement lays the foundation for the management of a National Park. The purpose statement indicates why the park became a part of the national park system. The significance statement describes the park's role in the regional and national context (NPS, 2000b). A VERP analysis is typically done as part of a park's General Management Plan (GMP). Corinth, as a unit of Shiloh NMP, will be incorporated in Shiloh's GMP when it is updated in the next several years. To date, there has not been an official carrying capacity analysis done for the sites being considered in the BAS (Koning, 2001a; Allen, 2001a).

Currently, all of the sites being considered for inclusion into the national park system are identified on "A Guide to the Corinth Campaigns of 1862," a driving tour map published by the SBCC, State of Mississippi, and other local and regional groups (SBCC, 1998). The map

provides brief descriptions of the battle campaigns and identifies twenty-eight stops in northeast Mississippi and the bordering areas of Tennessee. There are driving tour stops at or along all of the contributing resources, with the exception of the Russell House Battlefield.

Recreational carrying capacity is largely limited by the availability of parking. Where parking is available at potential Corinth Unit sites, the lots are generally gravel or dirt, with room for only a few cars. In no case is parking available for more than about 10 vehicles at one time at a site. Once a visitor is at a site, visitor use and experience is generally limited to reading the information on the tour map and the interpretive signs and markers, which vary in condition from fair to excellent. Currently, of all sites being considered for inclusion into the Corinth Unit, the most extensive visitor facilities are available at the Battery Robinett site (Fort Robinett Park). This property has a park-like setting, where people can enjoy picnics and a short walk on the masonry walking path and manicured lawn. Interpretation is provided by several markers, and visitors can view confederate graves, flagpoles, and the reconstructed Battery Robinett markers. There are interpretive markers and walking paths at several other sites. This is also the location of the new Corinth Civil War Interpretive Center, which is currently under construction.

3.4 SOCIOECONOMIC ENVIRONMENT

3.4.1 Population, Economy, and Social Conditions

Corinth, the largest city in Alcorn County, Mississippi, is also the County seat. The population growth rate in the City and the County over the past 20 years has lagged behind the State's (see **Table 3.4.1-1**). Corinth recouped its 1980 population level in the 1990s, following a steep decline. The adjacent counties of Hardeman, Hardin, and McNairy in Tennessee, and Prentiss, Tishomingo, and Tippah in Mississippi, had populations and growth rates comparable to Alcorn County (USCB, 2000a). Over the past 20 years, the populations in McNairy and Hardeman Counties, Tennessee, have increased at about twice the rate of the populations in Alcorn County and the State of Mississippi. **Table 3.4.1-1** presents population data for these counties and the states of Mississippi and Tennessee.

Table 3.4.1-1. Population Data for the Affected Areas of Mississippi and Tennessee

Area	1980 (people)	1990 (people)	2000 (people)	% Change 1980-1990	% Change 1990-2000	% Change 1980-2000
City of Corinth, MS	13,839	11,833	14,054	-14.5	18.8	1.6
Alcorn County, MS	33,036	31,722	34,558	-4.0	8.9	4.6
Hardeman County, TN	23,806	23,372	28,105	-1.8	20.3	18.1
Hardin County, TN	22,280	22,633	25,578	1.6	13.0	14.8
McNairy County, TN	22,525	22,422	24,653	-0.5	10.0	9.5
State of Mississippi	2,520,639	2,573,216	2,844,658	2.1	10.5	12.9
State of Tennessee	4,591,120	4,877,185	5,689,283	6.2	16.7	23.9

Source: USCB, 2000a

With the exception of a regional medical facility, all of the major employers in Alcorn County are manufacturers. With the exception of Aqua Glass Company in Adamsville, Tennessee and Thyseen Krupp in Middleton, Tennessee, all of the employers with more than 500 employees in the affected area are located in the City of Corinth, Mississippi. Particularly large are the commercial printing, internal combustion engine, and telephone and telegraph equipment industrial sectors (MIG, 2000). Major employers in the region are shown in **Table 3.4.1-2**.

Table 3.4.1-2. Major Employers in Alcorn County, Mississippi and Hardeman, Hardin, and McNairy Counties, Tennessee

Name	No. of Employees	Business
Quebecor World	1,000	Magazine printing
Aqua Glass Company	950	Bath products
Magnolia Regional Health Center	866	Hospital
Act Manufacturing	800	Computer & telephone equipment
Thyseen Krupp	791	Elevators
Caterpillar	750	Remanufacturing of diesel engines
Corinthian	629	Upholstered furniture
Kimberly-Clark	600	Nonwoven fabrics
Tenneco Packaging Corporation	524	Kraft linerboard
Packaging Corporation of America	500	Container boxes
Clayton Homes, Incorporated	430	Mobile homes
Angelica Manufacturing	400	Scrub suits
General Electric Company	400	Switchgear operations
Reitter & Schefenacker	400	Automobile parts

Sources: Alliance, 2001; MIG, 2000; TDECD, 2001

Alcorn County's labor force has been stable over the past 10 years, at about 15,500 people. The unemployment rate, which ranged between eight and ten percent from 1990 to 1997, has dropped continuously over the past three years. The average for the first six months of 2001 was about five percent (MESC, 2001). The labor force in McNairy and Hardeman Counties has been stable at about 9,500 and 10,300 respectively, over the past 10 years, while Hardin County's has grown by 13 percent. Unemployment rates have generally been slightly lower than in Alcorn County, but are now at 5 to 6.5 percent (Herron, 2002).

Tourism is a small sector of the local economy, with a fair number of seasonal or part-time workers. The three industrial sectors that comprise the hospitality industry are eating and drinking places, hotels and other lodging places, and amusement and recreation services. In 1999, non-farm earnings in these three sectors totaled 2 percent in McNairy County, less than 2 percent (est.) in Hardeman County, and 3 percent in Hardin and Alcorn Counties (BEA, 1999).

There are 8 hotels in Alcorn County, with a total of approximately 400 hotel rooms, and 4 bed & breakfasts, with a total of 20 rooms. The nearest community in Tennessee with lodging facilities is Savannah. It has 8 hotels with a total of 329 hotel rooms (TDECD, 2001). Based on a survey of 70 percent of the lodging rooms available for rent in Alcorn County, the average annual occupancy rate was 41.4 percent in 1999 and 53.2 percent in 2000, while the average daily cost

declined slightly, from $52.39 in 1999 to $51.32 in 2000 (CATPC, 2001). However, revenue per available room actually increased, from $21.69 in 1999 to $27.30 in 2000. Revenue per available room is the average annual gross rental revenue for a lodging room. Nationally, the average annual occupancy percentage in the 1999-2000 timeframe was in the low 50s to mid 60s, while average annual room rates have generally been stable to slightly increasing (STR, 2000). Based on aggregate statistics, it does not appear that there is currently a hotel shortage in Corinth. Periods of high occupancy could only be determined by conducting a survey, which would be difficult to do since this information is considered proprietary.

Land uses within downtown Corinth include civic, retail, office, quasi-public, and some light industrial activities. There are several retail establishments in downtown Corinth that support the tourism industry, including gift shops, restaurants, a bicycle shop (currently planning for rentals), and services, including a hardware store and repair shops. The majority of ground floor uses in downtown include offices, with the banking and law sectors being most prevalent. However, many ground floor retail spaces are currently vacant. Many second floor spaces are also vacant, with the highest use being for office space. Several second floor office spaces are currently undergoing renovations to apartments (Alliance et al., 2003).

Corinth imposes a two percent sales tax on lodging and food service, in addition to the seven percent State of Mississippi sales tax. City revenue from the tax has increased steadily over the past four years, from $509,904 in fiscal year (FY) 1997 to $624,134 in FY 1999 (CAPTC, 2001; MDA, 2001). The estimated amount of visitor spending in Corinth in FY 1999 on lodging and food was $31,206,700.

3.4.2 Transportation

There is no public transportation in any of the affected counties of Mississippi and Tennessee, although there is a Greyhound bus station in the City of Corinth. The primary north-south access route in the region is U.S. Route 45, a limited-access, 4-lane freeway that runs through the western part of Corinth (MDOT, 1990). The freeway has four full intersections in Corinth, Mississippi, and one in Eastview, Tennessee, approximately 15 miles east of the Davis Bridge Battlefield site. The main east-west roads are Mississippi State Route 2 and U.S. Route 72, to the north and south, respectively, of downtown Corinth. Both are referred to as conventional highways, with two to four lanes of traffic and direct vehicular access from abutting properties (i.e., there are no frontage roads) (MDOT, 1990). U.S. Route 72, a four-lane highway, is the main retail/big box shopping strip in Alcorn County. In the impacted area of Tennessee, the main east-west road is State Route 57, a 2-lane highway with a 55 mph speed limit. The primary north-south road is U.S. Route 45, where the speed limit is 65 mph.

There are two primary points of entry serving downtown Corinth from U.S. Route 72, and 4 secondary points of entry into downtown: one from U.S. Route 45 and three from Mississippi Route 2. These points of entry are described in **Table 3.4.2-1**.

Table 3.4.2-1. Characteristics of Corinth Downtown Entry Points		
From Regional Highway	**Entry Point**	**Characteristics**
U.S. Route 72	Tate Street to Fillmore Street	Two-lanes through spotty industrial corridor; leads directly to tourist destinations.
	Cass Street	Four-lane commercial street; highest capacity entrance, but less direct to access tourist attractions.
U.S. Route 45	Wenasoga Road to Linden Street	Narrow, two-lane, low capacity road served by a fully directional interchange; passes through a residential areas; indirect route into town.
Mississippi Route 2	Shiloh Road	Direct and attractive route between Corinth and Shiloh.
	North Harper Road	Alternate to Shiloh Road.
	North Polk Street	Two-lane direct route through downtown.

Source: Alliance et al., 2003

In Corinth, the road system is comprised of an irregular grid system in the downtown area and in western Corinth, with north-south roads providing access to the rest of the City. The primary north-south roads are City-maintained Shiloh Road, Harper Road, and Polk Street. Outside of the City of Corinth limits, most of the roads are County-maintained. Basic characteristics of County roads are listed in **Table 3.4.2-2**.

Table 3.4.2-2. Characteristics of Access Roads to the Potential Corinth Unit Properties			
Characteristic	**Alcorn County, Mississippi**	**Hardeman and McNairy Counties, Tennessee**	**City Roads**
Speed Limit	35 mph on side roads, 40 mph on main roads	None; maximum of 55 mph	25 to 35 mph
Number of Lanes	2	22	2
Paved Roadway Width	18 to 20 feet on side roads; 40 feet on main collector roads	18 feet typical	22 to 24 feet typical; 48 to 50 feet on main collector roads
Surface Type	Chip and seal	Asphalt, chip, and seal	Asphalt

Sources: Bynum, 2001; Fields, 2002; Hendriks, 2002; Whitehead, 2001b

As a result of major resurfacing work over the past two years, major streets leading to downtown Corinth are generally in good condition. Driving surfaces on most roads are good; however, layers of asphalt have accumulated and accentuated street crowns to the point that they sit considerably higher than adjacent sidewalks. This renders the sidewalks on these roads as both drainage and visual troughs. Sidewalk pavements range from brand new to failing in downtown Corinth and adjacent neighborhoods (Alliance et al., 2003).

The Federal Highway Administration (FHWA) classifies roads based on their function. According to the FHWA, an arterial road is one which provides the highest level of mobility, at the highest speed, for long, uninterrupted travel. Arterial roads generally have higher design standards than other roads, and they typically have multiple lanes and some degree of access control. An example of an arterial network is the Interstate

Arterial Road: A roadway that provides the highest level of service at the greatest speed for the longest uninterrupted distance with some degree of access control.

Source: FHWA, 1999

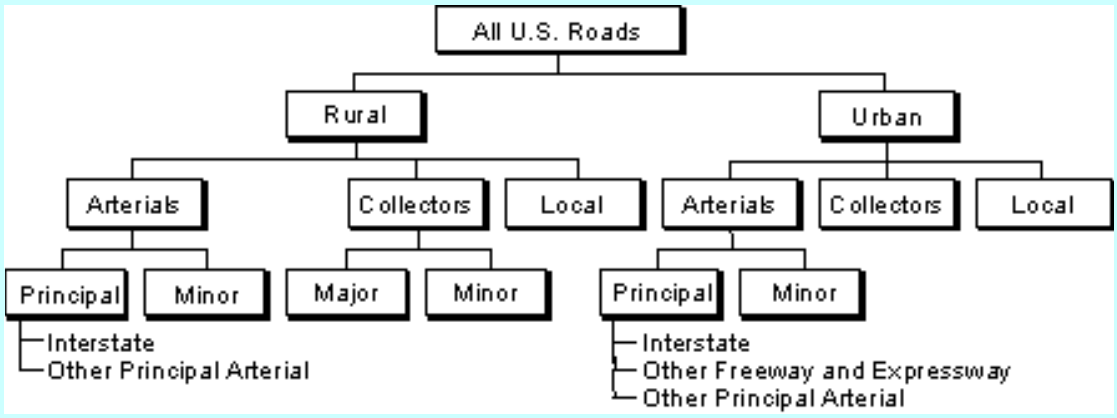
Highway System. Urban areas are generally defined by FHWA as metropolitan areas with populations greater than 25,000 people (FHWA, 1999). Corinth does not fit this criterion; therefore, U.S. Highways 72 and 45 are classified as rural principal arterials. The FHWA divides the rural principal arterial network into two subsystems: interstate highways and other principal arterials (FHWA, 1999). U.S. Highway 45 can be classified as an interstate highway, while U.S. Highway 72 can be classified as a principal rural arterial road.

Collector Road: A roadway that provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterial roads.

Source: FHWA, 1999

Most of the main roads in the affected areas of Mississippi and Tennessee are collector roads. Collector roads provide a lower degree of mobility than arterial roads. They are designed for travel at lower speeds and for shorter distances. Collector roads are typically two-lane roads that collect and distribute traffic from the arterial system. The rural collector system is divided into two subsystems: major and minor collector roads. Major collector roads provide service to county seats and important industrial or agricultural centers that generate significant traffic volumes, but are avoided by arterial roads. Rural minor collector roads collect traffic from local roads (FHWA, 1999).

All public road mileage below the collector system is considered local. Local roads provide basic access between residential and commercial properties, connecting with collector roads and arterial roads (FHWA, 1999). This road classification system is shown in **Figure 3.4.2-1**.



Courtesy: FHWA, 1999

Figure 3.4.2-1. Highway Functional Classification System

Examples of the classifications for roads in the affected areas of Mississippi and Tennessee are shown in **Table 3.4.2-3**. Most of the roads are minor arterial roads or local roads, which are built with road widths, design speeds, and number of lanes to handle certain traffic capacity and flows.

Local Roads: All roads not defined as arterials or collectors. Local roads primarily provide access to land with little or no through movement.

Source: FHWA, 1999

Table 3.4.2-3. Road Classifications in the Affected Areas of Mississippi and Tennessee

	Road Classification				
Road	**Rural Principal Arterial**	**Rural Minor Arterial**	**Major Collector**	**Minor Collector**	**Local**
U.S. Highway 45	X				
U.S. Highway 72	X				
SR 57			X		
SR 234 (TN)				X	
SR 2 (MS)				X	
CR 402, 418 (part), 427			X		
CR 418 (southern part)				X	
Harper Road		X			
Proper Street		X			
Farmington Road (CR 200)					
Wenasoga Road		X			
Shiloh Road		X			
Linden Street, Fulton Street				X	
CR 131					X
Pocahontas Road					X
Legend: CR = County Road; SR = State Route					

Sources: MDOT, 1993a; 1993b

The evaluation of existing roadway conditions focuses on capacity, which reflects the ability of the road network to serve the traffic demand and volume. The capacity of a roadway depends mainly on the street width, number of lanes, intersection control, and other physical factors. Traffic volumes typically are reported, depending on the project and database available, as the daily number of vehicular movements (e.g., passenger vehicles and trucks) in both directions on a segment of roadway, averaged over one full calendar year (average annual daily traffic (AADT)), or averaged over a period of less than a year (average daily traffic (ADT)). They can also be calculated for peak hour traffic. These values are useful indicators in determining the extent to which the roadway segment is used and in assessing the potential for congestion and other problems.

Most of the potential Corinth Unit sites are reached by driving on a State or County arterial road, and then turning onto a County minor collector road or side street. The Mississippi Department of Transportation[1] (MDOT) and the Tennessee Department of Transportation (TDOT) maintain ADT counts on many of the County arterial and collector roads. The traffic counts, shown in **Table 3.4.2-4** and in **Figures 3.4.2-2** and **3.4.2-3**, are non-directional, meaning that all lanes of traffic are counted. Volumes on all local streets are well within the capacities of those streets. Although highway traffic counts have not been conducted on downtown Corinth streets, it is estimated that most of these streets carry from 1,000 to 5,000 vehicles per day, which is well within the capacity of those streets (Alliance et al., 2003).

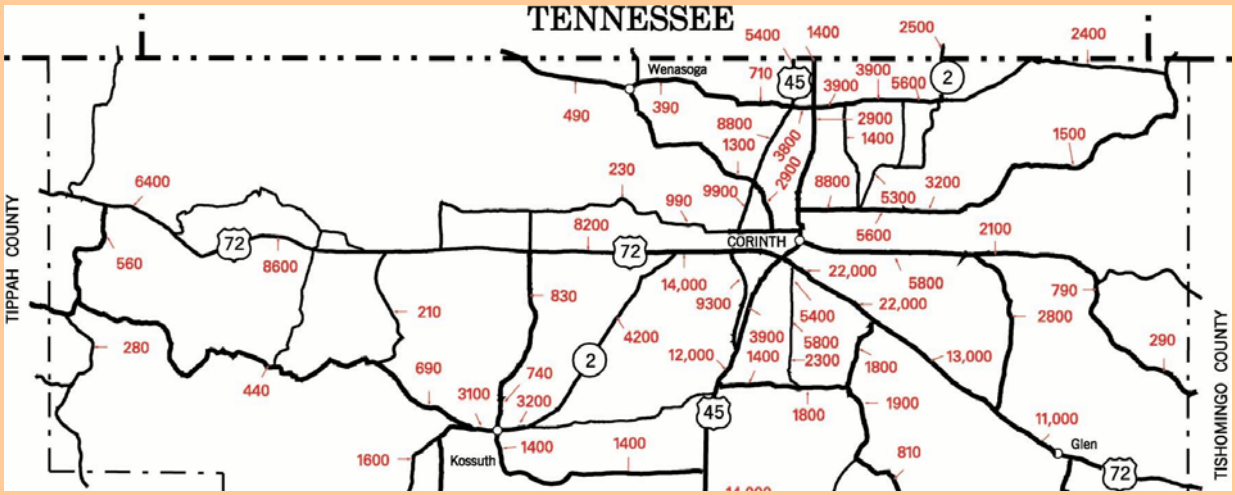
[1] Unless otherwise specifically stated, the information contained herein is made available to the public by MDOT for informational purposes only. Under no circumstances will MDOT be held liable to any party that may choose to rely on this information. Neither MDOT nor any other agencies or entities thereof assume legal liability or responsibility for the accuracy, completeness, or usefulness of any information, application, or product disclosed.

Table 3.4.2-4. ADT Counts on Potential Driving Routes to the Corinth Unit Sites

Road	ADT Count (Vehicles)	Potential Corinth Unit Site(s) Located Closest to the ADT Count Location
CR 700 (MS)	490	October Battlefield
SR 2, east of U.S. Rte. 45 (MS)	3,900	1862 Beauregard Line (Confederate Siegeworks); Davies' May 19th, McKean's May 19th, Davies' May 21st, and Davies' May 28th Lines
SR 2, east of U.S. Rte. 45 (MS)	5,600	Fallen Timbers
SR 2, at Tennessee State line	2,500	Fallen Timbers
Polk St./SR 145, north of Madison St. (MS)	2,200	1862 Beauregard Line (Confederate Siegeworks); Davies' May 19th, May 21st, and May 28th Lines; Russell House Battlefield
Polk St./SR 145, south of SR 2 (MS)	2,900	1862 Beauregard Line (Confederate Siegeworks)
Kendrick Rd., east of Harper Rd.	5,600	Boxe House Battery; Nelson's May 17th Lines, Farmington Battlefield
Purdy School Rd., west of U.S. Rte. 45 (MS)	710	October Battlefield; Davies' May 19th, McKean's May 19th, Davies' May 21st, and Davies' May 28th Lines
CR 218 (MS)	2,800	Paine's and Stanley's May 17th Farmington Line; Farmington Battlefield
CR 200 (Farmington Rd.)/Proper St., west of CR 114 (MS)	5,800	Paine's and Stanley's May 17th Farmington Line; Farmington Battlefield
CR 138/Harper Rd. (MS)	1,400	Davies' May 19th, McKean's May 19th, Davies' May 21st and May 28th Lines
CR 427 (MS)	1,900	Camp Davies
Wenasoga Rd., west of U.S. Rte. 45 (MS)	1,300	October Battlefield, Phases I and II; Battery F
Wenasoga Rd., east of U.S. Route 45 (MS)	2,900	Battery Robinett
SR 57, west of McNairy Co. line (TN)	2,530	Davis Bridge Battlefield
SR 57, east of McNairy Co. line (TN)	1,570	Davis Bridge Battlefield
SR 234 (historic Corinth-Davis Bridge portion) (TN)	430	Davis Bridge Battlefield
Butler Chapel Rd. (TN)	390	Davis Bridge Battlefield
Pocahontas Rd. (TN)	490	Davis Bridge Battlefield
U.S. Rte. 45, south of U.S. Rte. 72	9,300	Federal Redan
U.S. Rte. 72, east of U.S. Rte. 45	20,000	Corona College; Federal Redan; Battery Robinett; Camp Glendale
Tate St., south of U.S. Rte. 72	12,000	Corona College; Federal Redan; Battery Robinett
West Linden St., west of North Fulton	2,000 (est.)	Battery Robinett
North Fulton St., north of Tate St.	5,700	Battery Robinett
Intersection of U.S. Rte. 72 and S. Fulton Dr.	22,000	Battery Robinett, Corona College
Harper Rd., north of Proper St.	9,600	Contraband Camp; Davies' May 21st and May 28th Lines
Proper St., west of Harper Rd.	7,000	Contraband Camp

Legend: CR = County Road; SR = State Route; St. = Street; Rd. = Road; Rte. = Route

Sources: TDOT, 2001; MDOT, 2000; Caver, 2001; Whitehead, 2001a; Alliance et al., 2003

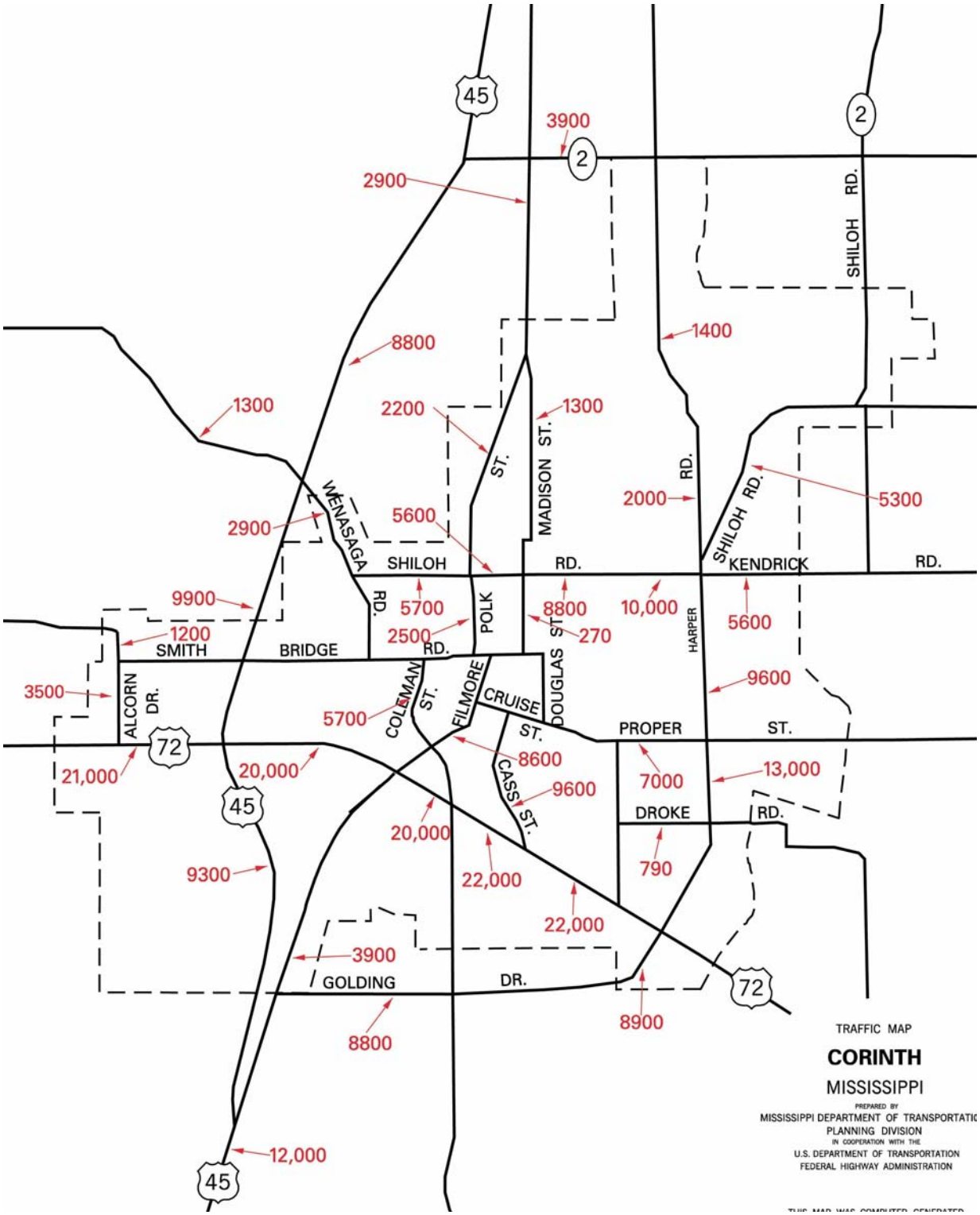


Courtesy: MDOT, 2000

Figure 3.4.2-2. Traffic Counts in Northern Alcorn County

The heaviest traffic is found on State Route 72 and U.S. Highway 45. The highest non-highway traffic counts are found within the City of Corinth, the urban center for the region. Outlying areas get minimal to modest traffic levels, with 2,000 to 3,000 vehicles per day typical. Minor collector roads may accommodate fewer than 1,000 vehicles per day. Within the City of Corinth, traffic counts increase approximately 30 percent in the summer (Whitehead, 2001b).

In addition to the roadways immediately surrounding the potential Corinth Unit sites, several roadways may be used to travel between Shiloh NMP and Corinth. These roadways include, among others, Tennessee State Roads 22 and 142, both of which are minor collector roads, and State Route 57, a major collector road. Tennessee State Road 22 runs north-south through the southeastern corner of McNairy County, Tennessee. The ADT counts on the segment of this road from the Mississippi-Tennessee State line to Shiloh NMP in 2001 ranged from 2,750 vehicles per day near the State line, to 1,340 vehicles per day midway towards Shiloh NMP, to 2,600 vehicles per day near Shiloh. Tennessee State Route 142 runs north-south through the western side of Hardin County, and intersects with State Route 22 near Shiloh NMP. The ADT counts on the segment of this road from the Mississippi-Tennessee State line to Shiloh NMP in 2001 ranged from 1,500 vehicles per day near the State line, to approximately 1,000 midway to Shiloh NMP, to 2,150 near Shiloh. The ADT counts on State Route 57 in this area ranged from 2,060 to 2,330 west of the McNairy-Hardin County line and 3,860 east of the County line (TDOT, 2001).



Courtesy: MDOT, 2000

Figure 3.4.2-3. Traffic Counts in the City of Corinth, Mississippi

The performance of a roadway segment and the level of congestion on a road is generally expressed in terms of the level of service (LOS) of the road. The LOS scale ranges from A to F, with each level defined by a range of volume to capacity ratios. LOS A, B, and C are considered good operating conditions, where motorists experience minor to tolerable delays. LOS D represents below average conditions. LOS E corresponds to the maximum capacity of the roadway. LOS F represents a gridlock situation. **Table 3.2.4-5** describes the LOS designations. These levels are based on the *Highway Capacity Manual* (TRB, 1994).

Table 3.4.2-5. Level of Service Descriptions

LOS	Description
A	Free flow, with low volumes and high speeds, and with users unaffected by the presence of other users of the roadway.
B	Reasonably free flow, but presence of the users in traffic stream becomes noticeable, and speeds begin to be restricted by traffic conditions.
C	Stable flow, but operation of single users becomes affected by interactions with others in traffic stream (users are restricted in the freedom to select their own speeds).
D	High density, but stable flow; speed and freedom of movement are severely restricted; poor levels of comfort and convenience.
E	Unstable flow; operating conditions at capacity with reduced speeds, maneuvering difficulty, and extremely poor levels of comfort and convenience.
F	Forced or breakdown flow with traffic demand exceeding capacity; unstable stop-and-go traffic.

Source: TRB, 1994

With the exception of U.S. Route 72, there are few impediments to traffic flow (i.e., congestion). Most roads in Alcorn, McNairy, and Hardeman counties operate at LOS levels A or B. During rush hour, the LOS on U.S. Route 72 can be reduced to C or D. When train crossings are closed due to passing trains, or in certain areas of 4-way stop signs, the LOS on local roads in Corinth may also be reduced to C or D (Whitehead, 2001b).

Parking

Municipal parking lots in downtown Corinth are currently underused, primarily due to their locations at the periphery of the downtown area. Street parking, on the other hand, is heavily used, and operates at "practical" capacity (85 percent). Practical capacity results in drivers searching for parking spots thinking that there is no parking available because vacant spots are hard to locate. Since most empty on-street parking spaces are located on Cruise Street in downtown, where few shops and offices operate, parking on other downtown streets exceeds practical capacity. At least half of Corinth City blocks experience utilization greater than 90 percent, and 25 percent of the blocks are completely full. Additional parking problems in downtown Corinth include lack of enforcing 2-hour limits on parking, lack of officially designated loading zones, inadequate on-street Americans with Disabilities Act (ADA) stalls, and poor use of space (Alliance et al., 2003).

Where parking is available at potential Corinth Unit sites, the lots are generally gravel or dirt, with room for only a few cars. In no case is parking available for more than about 10 vehicles at one time at a site.

3.4.3 Land Use

Overall land uses in downtown Corinth include civic, retail, office, quasi-public, and some light industrial activities. Uses adjacent to downtown include many historic homes to the north and east. Several churches are located adjacent to the downtown boundary, and often take up more than one City block for surface parking uses. To the south of downtown lie additional service, commercial, and light industrial uses (Alliance et al., 2003).

All of the sites being considered for inclusion into the Corinth Unit of Shiloh NMP are located in the City of Corinth, Mississippi, and in the unincorporated parts of Alcorn County, Mississippi, and Hardeman and McNairy counties, Tennessee. This section will provide an overview of land uses in these counties. The following descriptions are only examples of land uses proximate to the potential Corinth Unit sites. The land uses within the boundaries of each of the potential Corinth Unit sites could be homogenous or heterogeneous, with land use separation distances unknown. Site-specific land uses (i.e., land uses within and surrounding the boundaries of each site) should be discussed in separate future NEPA documentation for any potential future developments undertaken by the NPS, if this alternative is selected as the action to be taken.

Most of the potential Corinth Unit sites are located in rural and rural-residential areas or in the suburban environment of the City of Corinth. The only sites that are close to mixed commercial and residential areas are Corona College and Battery Robinett. The Corona College site is located across the street from two smaller and older single-family homes on one side, and the rear of a restaurant and veterinarian's office on the other side. These commercial buildings are located on Route 72, a main commercial thoroughfare. Battery Robinett is located across the street from an elementary school, and is bordered by an active railroad along one side, and across the street from an abandoned commercial building on the other side. It is also close to downtown Corinth and the light industrial uses that border the western edge of the downtown area. The other sites located in the City of Corinth, including Battery F, October Battlefield (Phases I and II), and the Contraband Camp, are in residential areas. There are single-family homes adjacent to or across the street from these sites. The Contraband Camp is across the street from a small townhouse complex and single-family homes.

Sites in the more rural locations of Alcorn, McNairy, and Hardeman counties are mostly located on side streets, off main roads. While the areas are not densely developed, there are typically a few homes adjacent to the sites. For instance, at Metamora Hill at the Davis Bridge Battlefield, there is a house only a few yards away from one of the interpretive markers at the edge of the gravel lot. The Boxe House Battery is located on a cul-de-sac with five to six homes.

Some of the potential Corinth Unit sites are located in sparsely populated areas. The Union Army of the Ohio, Nelson's May 17th line and the 1862 Beauregard Lines (Confederate

Siegeworks) do not appear to be directly bordered by any residences. The latter is at the end of a dead-end road, across from a local contractor's yard, and backs up to U.S. Highway 45.

Current land uses on all of the sites being considered for inclusion into the Corinth Unit of Shiloh NMP consist of passive outdoor recreation. There are no significant land use changes occurring in the immediate region. Most development activity is occurring within the limits of the City of Corinth.

Zoning and Land Use Restrictions

The City of Corinth has zoning and subdivision regulations. The City also has a comprehensive master plan. This plan is considered outdated since it was prepared about six years ago, prior to the annexation of the area north and east of the City in 2000. The annexed area extends about two miles to the Tennessee border (Morgan, 2001a). The master plan for Corinth, including all pertinent sections, is unavailable for reference (Morgan, 2001a; 2001b; Moore, 2001). There is no zoning or comprehensive land use planning document covering Alcorn County, Mississippi.

The border between McNairy and Hardeman counties runs through the Davis Bridge Battlefield area, although this site is primarily located in Hardeman County, Tennessee. There is no zoning or comprehensive land use planning document covering McNairy County (Moore, 2001). In Hardeman County, the affected area is zoned FAR (forestry, agriculture, and residential). The only commercial use permitted in this zone is home-based business with a special use permit. Hardeman County also has a sign ordinance. Sections of the ordinance that are relevant to the Davis Bridge Battlefield site involve the placement of signs in the rights-of-way. There is no master land use plan for the County (Ellis, 2001). The Fallen Timbers site, located in McNairy County, lies adjacent to the Hardin County border. As stated above, no zoning or comprehensive land use planning document exists for McNairy County (Moore, 2001), nor does one exist for Hardin County (HCEO, 2001).

Land Ownership

Some of the land within the boundaries of the Corinth Unit, with all eligible sites added, is publicly owned; some is privately owned. Only land that is donated to the NPS can be developed as part of the Corinth Unit. Many of the sites are currently owned by the FSBC, a 501(c)(3) organization (see text box). Land ownership estimates, where available, for each of the sites currently being considered for inclusion into the Corinth Unit are provided in Section 2 of this EA. In addition, **Table 2.5-1** in Section 2 details the potential total acreage of each eligible site under each alternative.

What is a 501(c)(3) Organization?

To be tax-exempt as an organization, an organization must be organized and operated exclusively as a charitable, religious, educational, scientific, literary, or other organization as set forth in § 501(c)(3) of the Internal Revenue Code. None of the earnings of the organization may inure to any private shareholder or individual. In addition, the organization may not attempt to influence legislation as a substantial part of its activities and it may not participate in campaign activity for or against political candidates.

Source: IRS, 1998

3.4.4 Utilities and Public Services

In general, **utilities** include the following kinds of facilities and infrastructure:

- *Energy* – gas pipelines and substations, electricity transmission and distribution lines, and electrical substations;
- *Communications* – telephone lines, cable TV lines, and communications towers;
- *Water supply* – water lines and water storage tanks; and
- *Wastewater* – sewage pipelines and sewage treatment plants.

In an urban context, **public services** generally include the following services provided by local municipalities:

- Fire protection;
- Law enforcement; and
- Emergency medical response and hospitals.

Various utilities and public services are located in or around the affected areas of Corinth, Mississippi, and McNairy and Hardeman counties, Tennessee. Gas and water service to residents and businesses of Corinth, Mississippi is provided by a municipal utility, the City of Corinth Gas and Water Department. The Department has several large industrial customers of natural gas and a number of residential and commercial customers. All of the Department's water, approximately three million gallons per day, is obtained from groundwater, pumped from about a dozen wells. The majority of this water serves residential, commercial, and industrial customers in Corinth, although connections to rural water supply systems allow for transfer of water to other parts of Alcorn County (Latch, 2001a).

Telephone service in the City of Corinth is provided by Bell South. Corinth's electricity is provided by the Alcorn County Electrical Power Association, which supplies power purchased from the Tennessee Valley Authority (TVA) to the entire county (Roland, 2001). A sewage collection system, which transports sanitary sewage to a wastewater treatment plant located on Fulton Drive, runs throughout Corinth and is maintained by the Corinth Sewer Department.

The City of Corinth Police Department, located in the Municipal Building, furnishes law enforcement in the affected area. The Corinth Fire Department has three stations (with a fourth in the planning stages), located at City Hall on Childs Street, 6th Street East, and South Alcorn Drive. All three stations would respond in the event of a fire, if necessary (Wood, 2001). Emergency medical services in Corinth include emergency medical technician and ambulance service, which can carry victims to the Magnolia Regional Health Center, located on Alcorn Drive.

The major supplier of gas around the affected areas in McNairy and Hardeman Counties, Tennessee, is the Tennessee Gas Pipeline Company, part of the Eastern Pipeline Group of the El Paso Corporation. This company serves many of the public utility companies in the area (EPC, 2002). Local electric companies in the area include the Pickwick Electric Cooperative, whose

service area includes the cities of Selmer and Adamsville, the Tennessee Valley Electric Company, and the Bolivar Electric Department. Nearby water distributors include the First Utility distributor, located in the City of Counce, the Eastview Utility District, located in the community of Ramer, and the City of Adamsville.

The primary health care facility in McNairy County, Tennessee is the Methodist Health Care McNairy Hospital, located on East Poplar Avenue in Selmer, Tennessee. The facility is located approximately 12 miles from the affected area of the County. The next nearest health care facility to the affected area in McNairy County is the Magnolia Regional Health Center in Corinth.

The closest McNairy County police departments to the affected area of McNairy County are located in the communities of Adamsville and Selmer. The Adamsville City Police Department is located less than 10 miles from the affected area; while the McNairy County Sheriff's Office and Selmer City Police Department are located approximately 12 miles from the area. There are also police departments in Hardin County, Tennessee located relatively close to the affected area. These include the Hardin County Sheriff's Office and the Savannah Police Department, both located in the City of Savannah, about 11 miles from the affected area in McNairy County.

The community of Michie, Tennessee, approximately 5 miles from the affected area in McNairy County, has a Volunteer Fire Department. The Volunteer Fire Department is located on State Highway 22, which runs past the affected area. In addition, the City of Selmer has two fire departments, located about 12 miles from the affected area.

The primary health care facility in Hardeman County, Tennessee is the Bolivar General Hospital, located on Nuckolls Road in the City of Bolivar. This facility, located approximately 19 miles from the affected area in Hardeman County, is not the closest facility to area. The Methodist Health Care McNairy Hospital is located approximately 15 miles away, and is the closest major health care facility to the affected area in Hardeman County. In addition, the Magnolia Regional Health Center in Corinth is also relatively close to the area, located about 17 miles away.

The community of Middleton, Tennessee, located approximately five miles from the affected area in Hardeman County, contains the nearest police and fire departments. The Middleton City Police Department and the Middleton Fire Department are both located on Main Street in the community. The next nearest police and fire departments to the affected area are located in the community of Walnut, Mississippi, approximately seven miles south of the affected area.

3.4.5 Noise

The loudest sounds that can be detected comfortably by the human ear have intensities that are 1 trillion (1,000,000,000,000) times larger than those of sounds that can just be detected. Because of this vast range, any attempt to represent the intensity of sound using a linear scale becomes very unwieldy. As a result, a logarithmic unit known as the decibel (dB) is used to represent the intensity of a sound. Such a representation is called a sound level.

Although the dB scale accurately reflects the sound pressure level of a given sound, it does not accurately reflect the sound exposure levels heard by a human observer. This is because the human ear is progressively reduced in sensitivity to sounds in the lower and upper ranges of the human audible frequency spectrum (approximately 10 Hz to 20,000 Hz). To more accurately assess the loudness of sounds as heard by the human ear, sound levels are measured on the A-weighted decibel (dBA) scale. This sound level scale is progressively reduced in sensitivity to very low and very high pitched sounds, and therefore, mimics a human's sense of hearing.

Normal speech has a sound level of approximately 60 dBA. Sound levels above about 120 dBA begin to be felt inside the human ear as discomfort, and eventually pain at still higher levels (DOD, 1978). Sound level examples are presented in **Table 3.4.5-1**.

Table 3.4.5-1. Common Noise Levels and Their Effects on the Human Ear

Source	Decibel Level (dBA)	Exposure Concern
Soft Whisper	30	Normal safe levels.
Quiet Office	40	
Average Home	50	
Conversational Speech	66	
Busy Traffic	75	May affect hearing in some individuals depending on sensitivity, exposure length, etc.
Noisy Restaurant	80	
Average Factory	80 to 90	
Pneumatic Drill	100	Continued exposure to noise over 90 dB may eventually cause hearing impairment.
Automobile Horn	120	

Source: DOD, 1978

To assess accurately the impacts of noise exposure on an entire community, dBA sound levels are commonly expressed with a measure that describes the cumulative effects of noise levels over time. The most commonly employed cumulative noise measure for environmental analysis is the Day-Night Sound Level (Ldn). This measure (expressed in dBA) describes the cumulative noise exposure expected from all major noise sources over a 24-hour period. Using the Ldn system, 10 dBA is added to the assessment of sound produced by activities occurring between 10 p.m. and 7 a.m. This addition places greater weight on the noise produced by nighttime activities due to the higher sensitivity of communities to noise during these hours.

Certain facilities, communities, and land uses are more sensitive to a given level of noise than others. Such "sensitive receptors" include schools, churches, hospitals, retirement homes, campgrounds, wilderness areas, hiking trails, and certain species of threatened or endangered wildlife. Impacts from noise production are generally assessed with respect to changes in noise levels experienced at sensitive receptors. One of the proposed Corinth Unit sites, the Union Army of the Mississippi-Paine's and Stanley's May 17th Farmington Line, is located very close to a church, and the wayside pull-off for this site is located adjacent to a church cemetery. In addition, a child daycare is located approximately one-half mile from the Contraband Camp site.

Different types of sensitive receptors vary in their acceptance of noise disturbance. As a result, noise impacts for different receptors are often assessed using different noise level standards. Recommended land use and associated noise levels are illustrated in **Table 3.4.5-2**.

Table 3.4.5-2. Recommended Land Use Noise Levels

Land Use Category	Noise Levels (Ldn)*			
	Clearly Acceptable	Normally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential	< 60	60-65	65-75	> 75
Commercial, Retail	< 65	65-75	75-80	> 85
Commercial, Wholesale	< 70	70-80	80-85	> 85
Manufacturing	< 55	55-70	70-80	> 80
Agriculture, Farming	< 75	> 75	N/A	N/A
Natural Recreation Areas	< 60	60-75	75-85	> 85
Hospitals	< 60	60-65	65-75	> 75
Schools	< 60	60-65	65-75	> 75
Libraries	< 60	60-65	65-75	> 75
Churches	< 60	60-65	65-75	> 75
Nursing Homes	< 60	60-65	65-75	> 75
Playgrounds	< 55	55-65	65-75	> 75

*Noise levels depicted are consistent with the Federal Noise Control Act of 1972 (42 USC 4901-4918).

Source: HUD, 1991

Although ambient noise levels have not been measured in the vicinity of any of the potential Corinth Unit sites, the existing acoustic environment can be inferred based on noise levels typically associated with particular land uses in the nearby area. As described in Section 3.4.3, Land Use, of this EA, the locations of the potential Corinth Unit properties are within one of the following types of areas: rural, rural-residential, commercial, and institutional.

Most of the potential Corinth Unit sites are located in rural and rural-residential areas or in the suburban environment of the City of Corinth. The only sites that are close to mixed commercial and residential areas are Corona College and Battery Robinett. Battery Robinett is also located close to downtown Corinth and the light industrial uses that border the western edge of the downtown area. The other sites located in the City of Corinth, including Battery F, October Battlefield, and the Contraband Camp, are in residential areas. In addition, sites in the more rural locations of Alcorn, McNairy, and Hardeman counties are in small rural-residential areas. Some of the potential Corinth Unit sites, such as the Union Army of the Ohio, Nelson's May 17th Line and the 1862 Beauregard Line (Confederate Siegeworks), are located in sparsely populated areas.

Sound levels vary depending on the receiver's distance from a noise source. Thus, the relative effects of sound sources would vary depending on the distance between a receiver's acoustic vantage point and the noise source. In addition, various features of the terrain may add an additional level of sound attenuation. The presence of buildings, standing vegetation (depending on the density and height of the vegetation), and even grass have the potential to reduce noise experienced by an observer.

3.4.6 Recreation

Corinth is located approximately one hour north of Tupelo, Mississippi, approximately 25 miles southwest of Shiloh, Tennessee, and approximately one hour west of the Natchez Trace Parkway. Memphis, Tennessee is located two hours to the northwest of the City. The Corinth Area Tourism Promotion Council (CATPC) and the Mississippi Division of Tourism market the area. Most of the Corinth area's visitor attractions are historical sites related to the Civil War, including Battery Robinett, Corinth National Cemetery, Jacinto Courthouse, the Northeast Mississippi Museum, and a walking tour of the Corinth Downtown Historic and Midtown Historic Districts, both listed on the NRHP.

An interim Civil War Interpretive Center opened in Corinth in 1996, and has been operated for the past 7 years by the SBCC. Most of the sites and exhibits available at the center are small, and it is unlikely that a visitor would spend more than 1 hour at each of them. Visitation to the interim interpretive center has been fairly stable over the past 4 years, ranging from 4,583 to 5,596 visits per year. The months exhibiting the highest visitation have been April, July, and October. Based on visitation reports maintained by the Center, approximately 20 percent of the visitors are from Mississippi and 10 to 15 percent are from the adjacent states of Tennessee and Alabama. Visitors from Illinois and Texas comprise about 10 percent. The remaining 50 to 55 percent of visitors come from all over the United States, with larger numbers from the Great Plains and the Midwest. Visitors from other countries, including Canada, comprise fewer than 100 visits annually, with the largest contingents from Canada and England. These visitation data indicate a steady base of interest in the area (Thompson, 2001a).

A new Corinth Civil War Interpretive Center is currently under construction at Battery Robinett, and is anticipated to open for visitation in spring 2004. Annual visitation to the new Corinth Interpretive Center is expected to range from 150,000 to 250,000 visitors. The basis of this estimate is that the Corinth Interpretive Center is expected to receive more local visitors than the Shiloh Visitor Center since the population within 5 miles of the Center is 10 times that around Shiloh's visitor center, and since the Corinth Interpretive Center is located at the intersection of two major roads. Approximately 350,000 people per year currently visit Shiloh NMP, and approximately 150,000 people visit the Shiloh Visitor Center annually. If the NPS markets the new Corinth Interpretive Center as the initial contact point for Shiloh NMP, most of the dedicated Shiloh traffic would also likely include Corinth in their visit (Harrell, 2003).

Other Civil War sites are within an hour drive of Corinth. The primary attraction in the region is Shiloh NMP in Tennessee, about 20 miles north of Corinth. Shiloh NMP comprises over 3,700 acres. There is a small admission fee. The Park has a visitor's center and a nine-mile self-guided tour of the battlefield. There were 261,472 recreational visits to the Park in 2000. Average annual visitation to the Park in the mid to late 1990s averaged about 350,000, down from 400,000 in 1991 and 1992 (NPS, 2000a).

To the south of Corinth are the Tupelo and Brices Cross Roads National Battlefields, both maintained by the NPS. Each is about 1 acre in size, with wayside markers. To the north, in Tennessee, the State of Tennessee owns Metamora Hill, part of the Davis Bridge Battlefield.

The area around the former Davis Bridge site is owned by the Sons of Confederate Veterans. An interpretive and preservation plan for the Davis Bridge area is being prepared for the Tennessee SHPO (Prouty, 2001), which includes upgrading existing wayside markers at the site and adding more signage at the Davis Bridge site proper. The Town of LaGrange, about halfway between Davis Bridge and Memphis, is a tourist attraction since about 75 percent of the town is in a National Register Historic District (Cogbill, 2001). They also provide a driving tour brochure.

The State of Tennessee does substantial marketing of its Civil War heritage, through its Civil War Heritage Trail. There are brochures of different campaigns and themes, including driving tours. The 'Invasion by River' theme includes sites in the City of Savannah and Shiloh NMP. The 'Fight for West Tennessee' theme includes the Davis Bridge site. In November 1996, Congress passed legislation creating 'Tennessee Civil War Heritage Area' (Curtis, 2001). One of the proposed purposes of the designation was "...to create partnerships among federal, state and local governments and their regional entities and the private sector to preserve, conserve, enhance, and interpret the battlefields and associated sites related to the Civil War in Tennessee" (MTSU, undated). A Statewide board to represent the Heritage Area was established in 1998, and includes State, nonprofit, and Federal (including NPS) members. Approximately $30,000 in grants were awarded in Fall 2001 for preservation projects. Annual Federal matching fund appropriations are expected to average $500,000 (Prouty, 2002).

The State of Mississippi markets its Civil War Itinerary. The first of the six-day tour begins in Corinth. In cooperation with the State of Tennessee, another day could be added to this itinerary, encompassing the sites being considered in the BAS.

There are a number of other Civil War sites that are either unprotected or owned by a local non-profit organization, and consist primarily of a monument and/or a marker. These include Iuka and Britton Lane. Other recreational attractions in the area include several State parks and a National Forest, about one hour west of Corinth. These and other area attractions are shown in **Figure 3.4.6-1**. To get a feel for how many tourists there are to the region, surveys of local attractions were conducted and local tourism studies were consulted. Estimated annual visitation at Corinth area attractions is shown in **Table 3.4.6-1**.

Table 3.4.6-1. Visitation at Corinth Area Attractions

Attraction	Annual Visitation (1999-2000)
Curlee House (Veranda House)	1,700 – 2,000
Corinth Interim Civil War Visitors Center	5,010
Northeast Mississippi Museum	6,000
Tennessee River Museum	7,000
Brice's Cross Roads Visitor Center	8,000
JP Coleman State Park	41,928
Natchez Trace Parkway Visitors' Center	51,249
Alcorn County Welcome Center	63,000
Tishomingo State Park	110,000
Shiloh NMP	357,532
Pickwick Landing State Park	1,500,000

Source: TAPP, 2000

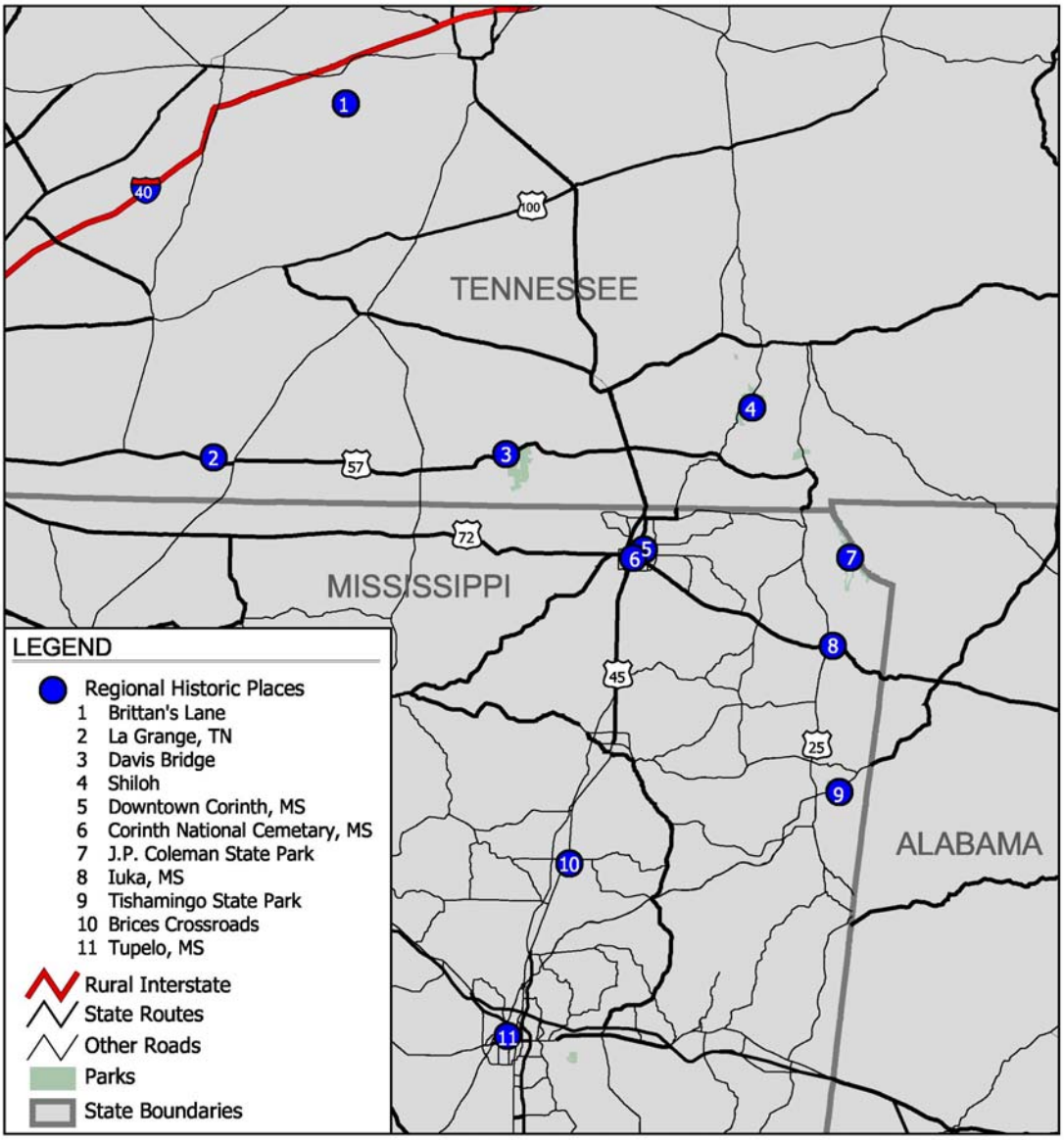


Figure 3.4.6-1. Recreational Resources in the Corinth Area

As shown in **Table 3.4.6-1**, none of the attractions in the immediate Corinth area had more than 10,000 visitors. At a county level, the number of visitors at the Alcorn County Welcome Center increased from 40,000 in 1998, when it opened, to 63,000 in 1999 (TAPP, 2000). On a regional level, on the entire Natchez Trace Parkway there were 5,737,183 recreational visits in 2000, excluding commuter traffic (Winston, 2001). Of these, 51,249 people stopped at the visitor's center between April 2000 and March 2001 (Winston, 2001). Many of these visitors were interested in Civil War history, since the center has an exhibit on the Tupelo National Battlefield. Shiloh NMP had the second largest number of visitors. Pickwick Landing State Park, a dammed portion of the Tennessee River, had the largest number of visitors. The Park is a developed outdoor recreation area with a resort inn and conference center, cabins, camping, a marina, and two miles of developed public swimming beaches.

3.4.7 Human Health and Safety

The primary health facility in Corinth, Mississippi is the Magnolia Regional Health Center, located on Alcorn Drive. The hospital contains 165 beds and a wide range of state-of-the-art diagnostic and treatment capabilities. Various spaces within the facility include an emergency department, Women's Center, pharmacy, surgical complexes, critical care unit, and many more. The hospital is accredited by the Joint Commission on Accreditation of Healthcare Organizations, and is a member of the American Hospital Association. The hospital recently opened an urgent-care clinic, open 365 days a year (Alliance, 2001). Emergency medical technician and ambulance services are available within the community.

Law enforcement to the Corinth area is furnished by the City of Corinth Police Department, located in the Municipal Building on Childs Street. The Alcorn County Sheriff Department is also located in the City of Corinth, on Fulton Drive. Fire protection is provided by the Corinth Fire Department, which has three stations serving the area and a fourth station in the planning process. These three stations are located on Childs Street, 6th Street East, and South Alcorn Drive. In the event of a fire, all three stations respond, if necessary (Wood, 2001).

The primary health care facility in McNairy County, Tennessee is the Methodist Health Care McNairy Hospital, located on East Poplar Avenue in Selmer, Tennessee. The facility is located approximately 12 miles from the affected area of the County, and contains 86 beds (TDH, No date). The next nearest health care facility to the affected area in McNairy County is the Magnolia Regional Health Center in Corinth, discussed above.

The closest McNairy County police departments to the affected area of McNairy County are located in the communities of Adamsville and Selmer. The Adamsville City Police Department is located less than 10 miles from the affected area, while the McNairy County Sheriff's Office and Selmer City Police Department are located approximately 12 miles from the area. There are also police departments in Hardin County, Tennessee located relatively close to the affected area. These include the Hardin County Sheriff's Office and the Savannah Police Department, both located in the City of Savannah, about 11 miles from the affected area in McNairy County.

The community of Michie, Tennessee, approximately 5 miles from the affected area in McNairy County, has a Volunteer Fire Department. The Volunteer Fire Department is located on State Highway 22, which runs past the affected area. In addition, the City of Selmer has two fire departments, located about 12 miles from the affected area.

The primary health care facility in Hardeman County, Tennessee is the Bolivar General Hospital, located on Nuckolls Road in the City of Bolivar. This facility, located approximately 19 miles from the affected area in Hardeman County, contains 61 beds (TDH, No date). However, this is not the closest facility to area. The Methodist Health Care McNairy Hospital, discussed above, is located approximately 15 miles away, and is the closest major health care facility to the affected area in Hardeman County. In addition, the Magnolia Regional Health Center in Corinth is also relatively close to the area, located about 17 miles away.

The community of Middleton, Tennessee, located approximately five miles from the affected area in Hardeman County, contains the nearest police and fire departments. The Middleton City Police Department and the Middleton Fire Department are both located on Main Street in the community. The next nearest police and fire departments to the affected area are located in the community of Walnut, Mississippi, approximately seven miles south of the affected area.

3.4.8 Waste Management

Waste disposal facilities in Mississippi must follow the *Non-hazardous Solid Waste Management Regulations and Criteria*, prepared in accordance with Mississippi Code Annotated, Sections 17-17-27, 17-17-213, 17-17-229, 21-27-207, and 49-17-17. Permits are required to construct, operate, and maintain landfill and rubbish sites in Mississippi. Transfer stations are fixed facilities used for the primary purpose of transferring solid waste from one solid waste transportation vehicle to another for movement to another waste management facility. Transfer stations in Mississippi must have an individual permit or a certificate of coverage under a general permit in order to operate (MDEQ, 1996).

Relevant Types of Waste Disposal Facilities in Mississippi

Municipal Solid Waste Landfill: A discrete area of land or an excavation that receives household waste and that is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257.2. This type of landfill also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, non-hazardous sludge, small quantity generator waste, and industrial solid waste.

Class I Rubbish Site: A waste disposal site that may receive construction and demolition debris, such as wood, metal, brick, mortar, concrete, stone, asphalt, cardboard boxes, natural vegetation, appliances (other than refrigerators and air conditioners), furniture, plastic, glass, wood chips, and other similar wastes approved by MDEQ.

Class II Rubbish Site: A waste disposal site that may receive natural vegetation, brick, mortar, concrete, stone, asphalt, and other rubbish approved by MDEQ.

Source: MDEQ, 1996

Alcorn County's Solid Waste Management Plan (SWMP) was approved by the MDEQ in March 2003 (MDEQ, 2003). The SWMP indicates which facilities the County has in place and quantities of waste expected to be generated over the next 20 years (Bhowal, 2001). All municipal and industrial solid waste from Corinth is taken to the Alcorn County/Corinth Transfer Station, and then transferred to the Prairie Bluff Landfill in Houston, Mississippi (Chickasaw County). The capacity of the Prairie Bluff Landfill is approximately 120 years based on current usage (Eidt, 2001). All municipal and private grass, brush, and yard waste grass in taken to the City of Corinth Class II Rubbish site (Davis, 2001a). Construction waste produced in Corinth is taken to the Alcorn County/Farmington Road Class I Rubbish Site, which is nearing the end of is useful life (Rhodes, 2001).

Hazardous waste produced in Corinth is transferred to the Emile, Alabama Hazardous Waste Landfill operated by Chemical Waste Management, Incorporated (Eidt, 2001). A sewage collection system serving the City of Corinth is maintained by the Corinth Sewer Department. The sewage system transports sanitary sewage to a wastewater treatment plant located on Fulton Drive in Corinth.

The Tennessee Solid Waste Management Act of 1991, as amended (Tennessee Code Annotated Section 68-211-101 et seq.), governs solid waste handling and disposal in the State of Tennessee. Solid waste disposal facilities in Tennessee must follow the Rules of TDEQ, Division of Solid Waste Management, Regulations Governing Solid Waste Processing and Disposal (Chapter 1200-1-7). Permits are required to construct, operate, and maintain the following types of solid waste storage, processing, and disposal facilities in Tennessee: Class I landfills, Class II landfills, Class III landfills, and Class IV landfills (see text box on next page). Certain other kinds of wastes, including medical/infectious wastes, sludge, pesticides, and asbestos, require special waste approval prior to disposal (TDEC, No date 2).

Tennessee has a Hazardous Waste Management Program, which began in 1980. While hazardous waste regulation is also a Federal responsibility under the Resource Conservation and Recovery Act (RCRA), the U.S. EPA has authorized the State of Tennessee to administer the majority of the Federal program in lieu of the EPA. The joint State and Federal program regulates the permitting and inspection of hazardous waste storage, recycling, treatment, and disposal facilities, the management of hazardous waste, and the annual registration of hazardous wastes (TDEC, No date 2).

Waste Disposal Facility Types in Tennessee

Sanitary Landfill: A method of solid waste disposal into or on land without creating hazards to public health or the environment by confining the waste to the smallest practical area, reducing it to the smallest practical volume, and covering it with approved materials.

Class I Facility: A sanitary landfill serving a municipal, insistutional, and/or rural population, used for diposal of the following wastes types: domestic, commericial, institutional, municipal, bulky, landscaping, land clearing, industrial, construction/demolition, farming wastes, shredded automotive tires, etc.

Class II Facility: A landfill receiving waste generated by one or more industrial or manufacturing plants and used for the disposal of solid waste generated by such plants. Wastes may include: industrial, commercial, institutional, farming, bulky, landscaping, land clearing, and construction/demolition wastes, and automotive tires. May also serve as a monofill for ash disposal from incineration of municiapl solid waste.

Class III Facility: A landfill used for the disposal of farming, landscaping, land clearing, and demolition/ construction wastes, shredded automotive tires, and certain wastes having similar characteristics and approved in writing by TDEC.

Class IV Facility: A landfill used for the disposal of demolition/construction wastes, shredded automotive tires, and certain wastes having similar characteristics and approved in writing by TDEC.

Source: TDEC, 2001b

The Tennessee Solid Waste Management Act of 1991 requires each county in Tennessee to assure that at least one solid waste collection system is available to meet the needs of the county's residents (Tennessee Code Annotated 68-211-851(a)). In addition, the Act requires each Municipal Solid Waste Planning Region in Tennessee to prepare a 10-year solid waste management plan for the region and submit annual reports (Tennessee Code Annotated 68-211-813-815 and 871). Tennessee's 95 counties are divided up into 62 Municipal Solid Waste Planning Regions, consisting either of a single county or a group of counties. Hardeman County comprises its own Region; McNairy County is one of four counties in the Shiloh Region. Hardeman County's 10-year solid waste plan was approved in October 1996, and the Region's five-year update to the plan was due in October 2001. The Shiloh Region's 10-year plan was approved in March 1995, and the five-year update to the plan was completed in March 2000 (TDEC, No date 2).

Waste disposal facilities serving Alcorn, Hardeman, and McNairy counties are listed in **Table 3.4.8-1.**

Table 3.4.8-1. Waste Disposal Facilities Serving the Project Areas

Area Served	Facility Location	Facility Name and Contact Address	Facility Type
Corinth/ Alcorn County, Mississippi	Alcorn	Alcorn Co./Corinth Transfer Station P.O. Box 69, Corinth, MS 38834	Transfer Station
	Alcorn	Farmington Rd. Class I Rubbish Site P.O. Box 69, Corinth, MS 38834	Class I Rubbish Site
	Alcorn	City of Corinth Class II Rubbish Site Westview Drive, Corinth, MS 38834	Class II Rubbish Site
	Chickasaw	Prairie Bluff Landfill P.O. Box 573, Houston, MS 38851	Municipal Solid Waste Landfill
Hardeman County, Tennessee	Hardeman (4.3 miles from County Courthouse on Hwy 64)	Bolivar-Hardeman County Landfill 115 North Washington Street, Bolivar, TN 38008	Landfill
McNairy County, Tennessee	McNairy (Airport Road)	Airport Road/Landfill County Courthouse, Selmer, TN 38375	Convenience Center/Class I Facility
	McNairy	McNairy County Landfill McNairy County Courthouse, Selmer, TN 38375	Landfill
	McNairy (Hwy 64, 2.5 miles east of Selmer)	McNairy County Transfer Station 4684 Hwy. 64 East, Selmer, TN 38375	Class I Facility/ Transfer Station
	McNairy (5 miles northeast Selmer on Airport-Purdy Rd.)	McNairy County Demolition Landfill County Courthouse/Court Ave., Selmer, TN 38375	Class III/IV Facility
	McNairy (4750 Hwy 22 South)	MRF Transfer Station P.O. Box 42, Michie, TN 38375	Transfer Station

Sources: MDEQ, 2001a; TDEC, 2001a

3.4.9 Visual Resources

The majority of properties being considered for inclusion into the Corinth Unit are located on the outskirts of Corinth and neighboring towns and villages. These properties are situated in the fringe between urban or developed areas and rural areas that are now beginning to experience development pressure, primarily in the form of semi-rural residential or commercial construction.

Figure 3.4.9-1. Contraband Camp Property (Including Residential Lot with House)

Figure 3.4.9-4. May 19th Union Siege Lines Earthworks

Three of the sites, Battery F, Battery Robinett, and Corona College, are located within the City of Corinth itself. Battery F is located in a low-density residential area. While the battery site and earthworks themselves are wooded, the surrounding property is grassy open space with private, single-family dwellings beyond. Battery Robinett is in a treed, park-like setting in a mixed residential and institutional area of Corinth. The Corona College property, just south of State Route 72, is much smaller and less pastoral in character. The property is surrounded by a mixture of higher-density residential and commercial development, as well as nearby streets.

The Contraband Camp property is located in a relatively low-density residential neighborhood east of downtown Corinth, close to the edge of town. The property contains a large residential lot with a now-unoccupied, already purchased house on one edge of the lot. The lot has a lawn containing large broadleaf trees. The residential lot on the Contraband Camp property is shown in **Figure 3.4.9-1.** The lot is bordered by a residential street, neighborhood houses, a stream in a small, wooded ravine, and a field in back.

Figure 3.4.9-2. Union Siege Lines Near Farmington

Figure 3.4.9-3. Logging on a Parcel Adjacent to the Boxe House Battery and Earthworks

The remaining sites being considered for inclusion in the Corinth Unit are located in somewhat more rural settings. Some of these settings are predominantly wooded, others open, and some mixed. Detailed site descriptions, including viewsheds and adjacent land uses, are provided in Section 2 of this EA. The landscapes represented by the potential Corinth Unit properties are characteristic of the fairly rustic

countryside in northeastern Mississippi and southwestern Tennessee. Visual resources in the area are positive attributes, but not especially outstanding in a national context. The features of historic value, primarily earthworks and parapets, tend to be visible only at close range, both because they are usually less than ten feet high and are often hidden by trees growing on and around them. **Figures 3.4.9-2** through **3.4.9-5** convey the visual quality and resources present at and around some of the potential Corinth Unit sites outside of the City of Corinth limits. Nearby land uses within the viewsheds of these properties include working forests (those that include logging), agricultural fields, and low-intensity industrial sites.

Figure 3.4.9-5. Overlooking Hatchie River (Davis Bridge Battlefield) in Hardeman County, Tennessee

3.4.10 Environmental Justice/Protection Of Children

Executive Order (E.O.) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, requires Federal agencies to identify and address any disproportionate adverse human health or environmental effects of its projects on minority or low-income populations. According to this E.O., each Federal agency must conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons or populations from participation in, denying persons or populations the benefits of, or subjecting persons or populations to discrimination under, such programs, policies, and activities because of their race, color, national origin, or income level.

E.O. 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, directs Federal agencies to "identify and assess environmental health risks and safety risks that may disproportionately affect children." This E.O. requires Federal agencies to "ensure that [their] policies, programs, activities, and standards address disproportionate risks to children."

An examination of environmental justice issues sets the stage for whether any of the alternatives pose disproportionate environmental health or safety risks to children, and if there are disproportionate adverse human health or environmental effects on minority or low-income populations.

When the potential Corinth Unit sites are digitized, it will be possible to pinpoint the exact census tracts in which each site is located, and a more detailed analysis could be conducted using census block groups. Identifying characteristics of a community by census tracts and census

blocks provides detailed information at the local community level, such as the areas surrounding individual sites. This would be particularly applicable in the City of Corinth, where the majority of the potential sites are located. There is at least one site located in each census tract of the City.

According to the 2000 Census, minorities comprise 12.7 percent of the population of Alcorn County, 42.7 percent of the population of Hardeman County, 5.1 percent of Hardin County's population, 7.7 percent of McNairy's population, and 23.7 percent of the population within the City of Corinth (USCB, 2000a). **Table 3.4.10-1** shows the racial breakdown, median household income, and poverty levels for the different counties in which the potential Corinth Unit sites are located, and all of the census tracts that comprise them.

What are Census Tracts & Census Blocks?

Census tracts are small, relatively permanent statistical subdivisions of a county. They contain between 2,500 and 8,000 persons and, when first delineated, are designed to be homogeneous with respect to population characteristics, economic status, and living conditions.

A **census block** is the smallest geographic entity for which the U.S. Census Bureau (USCB) collects and tabulates decennial census information. Block boundaries are typically delimited by visible (street, road, stream, shoreline, etc.) or nonvisible (county line, city limit, property line, etc.) map features.

Source: USCB, 2000b; 1999

Table 3.4.10-1. Population and Income Data, by Geographic Area

Geographic Area	Total Population	Racial/Ethnic Composition			Median Household Income	% Below Poverty
		% White	% African-American	% Other Race*		
ALCORN COUNTY, MISSISSIPPI						
Total County	34,558	87.4%	11.1%	1.6%	$29,041	16.6%
Tract 9501	5,170	97.7%	1.5%	0.9%	$36,977	9.6%
Tract 9502	6,493	83.7%	15.3%	1.0%	$30,395	12.5%
Tract 9503	3,606	90.1%	7.9%	1.9%	$23,285	23.6%
Tract 9504	4,751	98.3%	0.2%	1.5%	$29,678	16.0%
Tract 9505	6,498	66.4%	30.7%	2.9%	$21,080	26.8%
Tract 9506	4,006	98.9%	0.2%	0.9%	$30,081	13.8%
Tract 9507	4,034	87.0%	11.3%	1.7%	$33,241	13.5%
City of Corinth	14,054	76.3%	21.6%	2.1%	N/A	N/A
HARDEMAN COUNTY, TENNESSEE						
Total County	28,105	57.3%	41.0%	1.7%	$26,112	18.0%
Tract 9501	4,014	84.2%	14.5%	1.3%	$30,047	19.9%
Tract 9502	6,524	37.8%	58.7%	3.4%	$27,786	17.5%
Tract 9503	4,084	54.0%	44.6%	1.3%	$31,332	19.9%
Tract 9504	6,190	47.1%	52.0%	1.0%	$27,094	23.3%
Tract 9505	4,215	91.8%	6.9%	1.3%	$30,645	13.6%
Tract 9506	3,078	41.5%	57.6%	0.9%	$26,544	22.8%
HARDIN COUNTY, TENNESSEE						
Total County	25,578	94.9%	3.7%	1.4%	$27,470	17.5%
Tract 9801	3,697	97.6%	1.1%	1.3%	$27,083	17.4%
Tract 9802	4,448	93.9%	4.5%	1.6%	$27,194	19.3%

Table 3.4.10-1. Population and Income Data, by Geographic Area						
Geographic Area	**Total Population**	**Racial/Ethnic Composition**			**Median Household Income**	**% Below Poverty**
		% White	**% African-American**	**% Other Race***		
Tract 9803	3,789	88.8%	9.9%	1.3%	$36,014	10.5%
Tract 9804	4,921	93.3%	5.2%	1.5%	$18,886	31.5%
Tract 9805	5,520	97.9%	0.5%	1.6%	$29,033	16.9%
Tract 9806	3,203	97.8%	1.5%	0.7%	$33,010	13.7%
MCNAIRY COUNTY, TENNESSEE						
Total County	24,653	92.2%	6.2%	1.5%	$28,590	16.5%
Tract 9901	3,804	98.1%	0.8%	1.1%	$30,174	17.7%
Tract 9902	2,118	97.4%	0.5%	2.1%	$26,761	23.5%
Tract 9903	2,899	93.5%	5.1%	1.3%	$30,612	12.4%
Tract 9904	1,703	94.8%	3.8%	1.4%	$30,430	11.4%
Tract 9905	7,748	86.4%	11.6%	2.0%	$31,165	16.9%
Tract 9906	3,420	92.1%	6.6%	1.3%	$29,138	14.4%
Tract 9907	2,961	93.5%	5.4%	1.0%	$28,873	13.6%
* Includes people indicating they belong to 2 or racial groups. N/A = Not Available						

Sources: USCB, 2000a

The racial/ethnic composition of the affected area is shown in **Figure 3.4.10-1**, by census tract. According to the 2000 Census, almost all of the minority residents in Alcorn County reside within the City of Corinth. The census tracts containing approximately two-thirds of the County's total minority population are tracts 9502 and 9505. Tract 9505, which includes downtown Corinth, is the location of Battery Robinett and Corona College. Tract 9502 may also contain some potential Corinth Unit sites. In census tracts 9501, 9503, 9504, and 9506, the minority population is less than 10 percent of the total population within the tract.
Of all of the census tracts in Hardeman County, Tract 9505, the location of the Davis Bridge Battlefield site, has the smallest percentage of minorities, 8.2 percent. The other tracts within Hardeman County have minority populations ranging from 15 to 61 percent. The Fallen Timbers site is located in McNairy County, in Tract 9907. The percentage of minorities in this tract, 6.4 percent, is comparable to the McNairy County-wide average, 7.7 percent.

U.S. Census Bureau (USCB) Poverty Definition

The USCB uses a set of money income thresholds that vary by family size and composition to detect who is poor. If a family's total income is less than that family's threshold, then that family, and every individual in it, is considered poor. Poverty thresholds do not vary geographically, but are updated annually for inflation with the consumer price index. The official definition of poverty counts money income before taxes and excludes capital gains and noncash benefits, such as public housing, Medicaid, and food stamps.

The most recent poverty and median household income data available are the Small Area Income and Poverty Estimates at the county level, prepared by the USCB. The data indicate that poverty rates and income levels are similar across the region. Alcorn County has a slightly higher income level and lower poverty rate than any of the counties investigated, while Hardeman County has the lowest income level and highest poverty rate in the four-county region (USCB, 2000a).

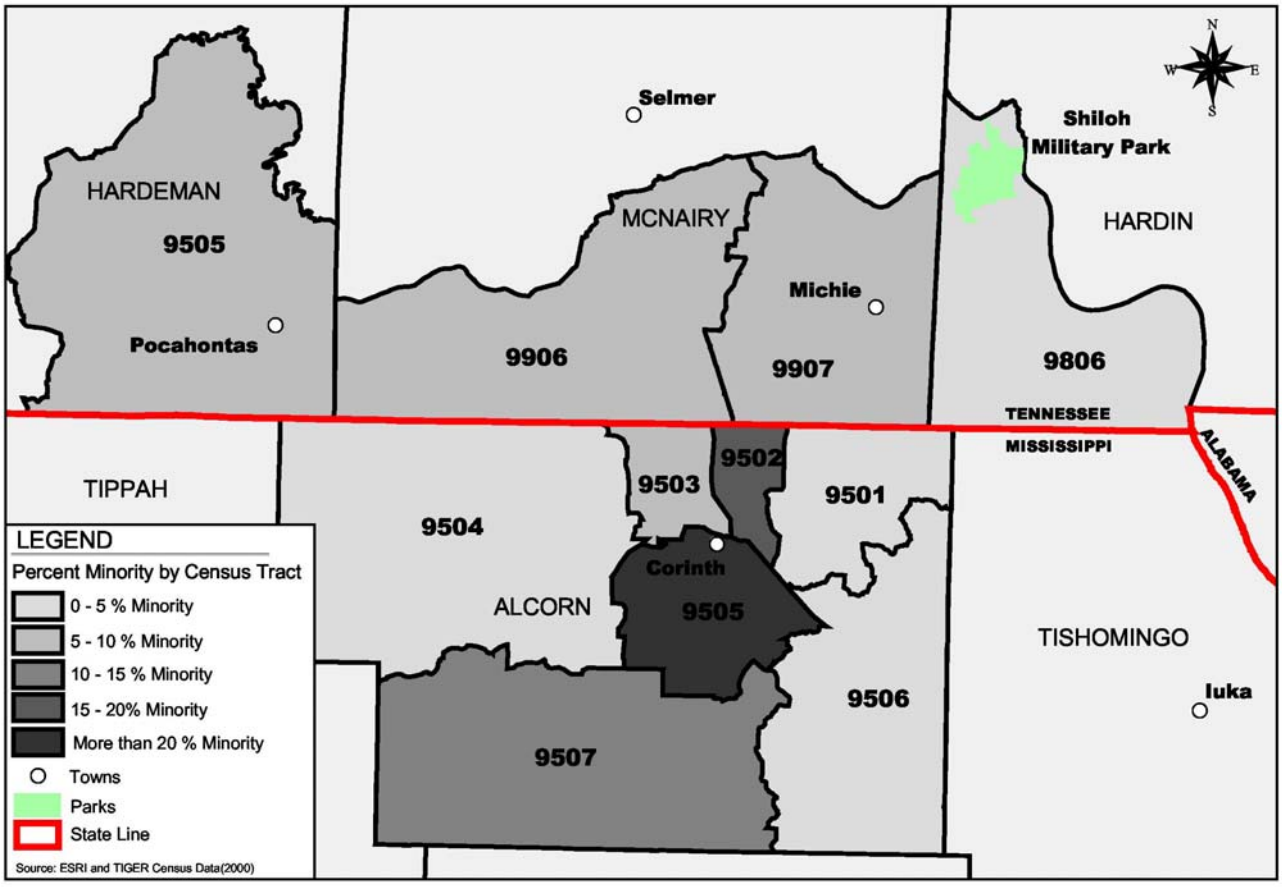


Figure 3.4.10-1. Racial Composition of the Affected Area, by Census Tract

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4.0 ENVIRONMENTAL CONSEQUENCES

4.1 METHODOLOGY

The interdisciplinary study team (see Section 8.0, List of Preparers) followed a structured process to analyze the potential environmental impacts, or effects, resulting from the different management alternatives for those properties or resources that meet the criteria of national significance, suitability, and feasibility for inclusion into the national park system. This process, called the cause-effects-questions process, is described below.

Causes-Effects-Questions:
A Structured Analytic Process

Step 1: Identify the specific activities, tasks, and subtasks involved in the proposed action(s) and alternative(s).

Step 2: For each specific activity, task, and subtask, determine the full range of direct effects that each could have on any environmental resource. For example, removing vegetation could cause soil erosion.

Step 3: For each conceivable direct effect, identify which further effects could be caused by the direct effects. For example, soil erosion could cause stream sedimentation, which could kill stream species, which could diminish the food supply for fish, leading to decreased fish populations. This inquiry can identify multi-stepped chains of potential causes-and-effects.

Step 4: Starting at the beginning of each chain of causes-and-effects, work through a series of questions for each potential effect:

- Would this effect actually occur from this project?
  If not, why not? What would preclude it from happening?
- If the effect cannot be ruled out, characterize which types of data, other information, and analyses are needed to determine the parameters of the effect, including its extent, duration, and intensity. Identify the sources from which the data is to be obtained.

Step 5: Gather the data and conduct the analyses identified by the above steps. Gather and use only relevant information. Focus on getting sound answers to the impact questions.

Step 6: Document the results of this study process. Provide all relevant analytic information, but no extraneous encyclopedia bulk.

The study team proceeded to conduct the investigation and analyses by gathering the data they concluded were relevant for each resource area. Using these data, the team determined which impacts would occur and assessed them according to their duration, extent, intensity, and whether or not the impact would cause an impairment in the Park's resources. These parameters are defined below.

4.1.1 Definitions

Duration of Impact:

Temporary – Impact would occur during the management transition phase only, or in the case of potential future developments, during the site preparation and construction phases only. Once these phases have ended, natural resource conditions are likely to return to pre-transition/construction conditions, unlike cultural resource conditions, which would remain altered.

Short-term – Impact would extend past the management transition phase, or construction phase for future developments, but would not last more than a couple of years, at most.

Long-term – Impact would likely last more than a couple of years, or over the lifetime of the project.

Type of Impact:

Direct – Impacts caused by the alternative(s) at the same time and in the same location as the action.

Indirect – Impacts caused by the alternative(s) that occur later in time or farther in distance than the action.

Extent of Impact:

Localized – Impacts would affect the resource area only on the project site or its immediate surroundings, and would not extend into the region.

Regional – Impacts would affect the resource area on a regional level, extending well past the immediate project site.

Intensity of Impact:

Negligible – Minimal or no impact on the resource.

Minor – Change in a resource area occurs, but no substantial resource impact results.

Moderate – Noticeable change in a resource occurs, but the integrity of the resource remains intact.

Major – Substantial impact or change in a resource area that is easily defined, noticeable, and measurable.

4.1.2 Impairment of Park Resources

The study team analyzed whether impacts would result in an impairment of Park resources based on guidelines set forth in NPS *Management Policies 2001*. Impairment occurs when an impact degrades or harms the integrity of Park resources or values, including opportunities that would otherwise normally be available for the enjoyment of those resources or values had the impact not occurred. Under the NPS Organic Act and the General Authorities Act, impairment of Park resources is prohibited.

NPS *Management Policies 2001* outlines the conditions under which an impact would be likely to result in an impairment of Park resources. According to the Policies, an impact would likely create an impairment to the extent that the conservation of the affected resource or value is: 1) essential to fulfill a purpose established in the enabling legislation or proclamation of the Park; 2) key to the integrity (natural or cultural) of the Park or its opportunities, or 3) identified as a goal in the GMP for the Park. If an impact is an unavoidable result of an action required to maintain or restore the integrity of Park resources or values, and cannot be reasonably mitigated, the impact would be less likely to constitute an impairment of Park resources.

4.1.3 Connected Actions and Cumulative Impacts

Connected Actions

According to the NPS DO-12 handbook, connected actions are actions that are closely related to the proposed action or its alternatives. Connected actions 1) automatically cause other actions, 2) could not or would not proceed unless other actions have previously been taken or occur simultaneously, or 3) are interdependent parts of a larger action. Although no specific connected actions have been identified for this EA, if the boundaries of the Corinth Unit are extended beyond the Battery Robinett site (i.e., selection of Alternative B, C, or D), it is likely that the NPS would undertake developments at each of the additional properties to enhance visitor use and experience. While no site-specific development plans have been determined, such developments could include: improving access to the sites; construction of parking areas for cars, buses, and recreational vehicles (RVs); developing trails around the sites; installing interpretive wayside markers; and providing informational pamphlets that describe the historic events.

In order for this EA to serve also as a planning document, the analysis of potential environmental and socioeconomic impacts that may result from the different management alternatives is supplemented by a general description of potential impacts that could result from NPS developments to enhance visitor experience (under Alternatives B, C, and D only). These potential impacts are discussed by resource area as potential connected actions. Since these developments are not part of the scope of this EA or the decision to be made regarding the boundaries of the Corinth Unit and subsequent land management, the potential impacts that could result from these developments do not affect the ratings or comparison of management alternatives presented in this EA, or the selection of the environmentally preferred alternative, discussed in Section 2.4. Once a management alternative is selected and plans for development

are more fully refined, additional NEPA documentation will be prepared by the NPS to analyze the impacts resulting from any future developments on properties included in the Corinth Unit. The description of the potential impacts from future developments presented in this EA should serve as a planning tool to define the scope of the impacts analysis in subsequent NEPA documentation.

Cumulative Impacts

A cumulative impact is an impact on the natural or human environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency, organization, or person undertakes such other actions (40 CFR 1508.7). Cumulative impacts can result from individually minor and insignificant, but collectively significant actions, taking place over a period of time.

Cumulative impacts were assessed by combining the potential environmental impacts of the alternatives with the potential impacts of known projects occurring or projected to occur within the region of the proposed Corinth Unit. Other construction projects recently occurring within the Corinth area include a new Ford dealership (on the north side of Route 72) and a new shopping center (on the south side of Route 72), both located on Harper Road (Morgan, 2001b); an addition of a Corinth Surgery Center at Magnolia Regional Health Center; the addition of a Community Service Center to the Magnolia Regional Health Center on Harper Road (MRHC, 2003); and an approximately 20-mile hiking and biking trail, with 8 miles of paved trails. The trailhead for the route is on Waldron Street in downtown Corinth. The trail runs east and north through downtown Corinth to the Tennessee border (Geno, 2001). The trail will lead visitors through the historic downtown Corinth area, to nearby earthworks, and to sites such as Battery Robinett and the Corinth National Cemetery. There will be 4 pull-off trails taking visitors to earthworks. In the future, a connection to other trails in Hardin and McNairy Counties, Tennessee, is envisioned to like Corinth with Shiloh.

In addition, various construction projects around the City of Corinth are projected to occur in the near future. These projects include construction of two restaurants on Route 72 and the construction and operation of a new Corinth Civil War interpretive center on Fort Robinett Park (to be maintained as part of the Corinth Unit of Shiloh NMP).

Corinth Civil War Interpretive Center, Fort Robinett Park

Construction of an approximately 11,000 square-foot Corinth Civil War Interpretive Center is currently occurring, and the new Center is projected to be open to visitors in spring of 2004. The interpretive program at the center will focus on the Civil War experience in northern Mississippi and southwestern Tennessee, with emphasis on the 1862 Siege and Battle of Corinth. The center will serve as Fort Robinett Park's initial contact point, as well as an orientation point from which visitors will be encouraged to visit other Civil War resources in the region (OPI, 2000). Operating year-round, the center will be designed to contain a variety of functional spaces, such as a lobby/information desk, exhibit spaces (including interactive media, computer-based programs, videos, and narrative exhibits), auditorium (which would show a film depicting the

Corinth Campaign), conference room/meeting room, and library, as well as outdoor walking paths and wayside exhibits. For the purposes of this EA, it is assumed that the new Corinth Civil War Interpretive Center is in operational phase. Impacts associated with the construction and operation of the center are the subject of another EA.

Heritage Tourism Developments

What is Heritage Tourism?

While there is no one definition of heritage tourism, a forum held by professionals in the tourism industry agreed on the following definition:

Traveling to experience the places and activities that authentically represent the stories and people of the past.

Source: ODTT, 1997

There are active preservation efforts occurring in the Corinth/Alcorn County region to preserve Civil War sites and promote heritage tourism. Local groups have joined to form the Tourism and Preservation Partnership (TAPP) for the purposes of preparing a master plan and improving coordination between preservation and tourism interests. Their future plans are discussed in a planning document entitled *Historic Preservation and Tourism Action Agenda for Corinth and Alcorn County, Mississippi*. Among the key initiatives and recommendations presented in the document are: 1) creating a link between the new NPS Corinth Civil War Interpretive Center and Downtown Corinth, 2) enhancing gateway corridors, 3) identifying, preserving, and protecting historic districts, neighborhoods, and sites, and 4) creating greenways along the hiking and biking trails and key corridors (TAPP, 2000).

Corinth Downtown and Connecting Corridors Action Plan

In order to facilitate heritage tourism development, the Corinth Area Tourism Promotion Council (CATPC), The Alliance, and the TAPP have acknowledged that certain community characteristics, including traffic congestion and downtown parking concerns, are priorities that should be addressed immediately (TAPP, 2000; Alliance et al., 2003). The Alliance, CATPC, Main Street Corinth, Alcorn Board of Supervisors, and the City of Corinth sponsored the preparation of a *Corinth Downtown and Connecting Corridors Action Plan*, which features an area traffic study and streetscape improvement plan for downtown Corinth and gateway corridors (Bynum, 2001; Alliance et al., 2003). This study was completed in January 2003. There are several foci for the study, including:

1) Traffic impacts associated with the new interpretive center and tourist circulation throughout the Corinth area;
2) Tourist parking in downtown Corinth;
3) Signage and wayfinding;
4) Aesthetics and use of downtown areas; and
5) Streetscape improvements to the gateway corridors (Alliance et al., 2003).

The *Action Plan* analyzes existing infrastructure conditions within and around downtown Corinth, and provides specific recommendations to improve traffic (car, bus, and RV) circulation, increase parking availability, and improve streetscapes and travel corridors, taking into account predicted increases in annual visitation from the operation of the new Civil War

Interpretive Center. Aside from technical improvements to the streets and sidewalks for public safety, visibility, and ADA compliance, there are additional improvements proposed in the *Action Plan* that address the aesthetics character of a street or district, wayfinding devices, and pedestrian amenities. These improvements focus on streets within downtown Corinth, those streets connecting downtown to the new Interpretive Center and to surrounding Civil War sites and to the highways, and the U.S. Route 72 corridor itself. Recommended streetscape improvements are location-dependent, and include such things as lighting, special paving, benches, interpretive signage, trees and other vegetation, and the inclusion of wayfinding kiosks (Alliance et al., 2003). Any recommendations within the traffic study would have to receive funding before they could be implemented.

Several primary and secondary entryways from State or U.S. highways to the downtown Corinth area were identified in the *Action Plan*. Recommendations for streetscape improvements to these entryways include review, modification, and adoption of changed zoning ordinances for uses along the roadways to ensure that only tourism-related uses are allowed (i.e., hotels, restaurants, gas stations, apparel stores, tourism-related retail) and that only appropriate signage is allowed to be installed and maintained along the roadways (Alliance et al., 2003). Again, any recommendations within the traffic study would have to receive funding before they could be implemented.

In addition to traffic circulations and streetscapes, the *Action Plan* identified three primary districts in the downtown Corinth area, and made recommendations for marketing these districts based on the niche within each district. The key overlap of the three districts occurs at the crossroads, which is expected to be the core area for public parking lots, the Northeast Mississippi Museum, and the new consolidated Alliance/Tourism/Main Street offices (Alliance et al., 2003). The three primary districts include:

1. **Retail and Entertainment District.** This District includes the public parking lots at the crossroads, the Northeast Mississippi Museum, the Coliseum, Trailhead Park, and the historic Pickwick Theatre Building. The key retail streets on which ground-floor retail uses will focus are Cruise and Waldron Streets. Efforts would be made to modify zoning in this District to ensure ground floor uses that are retail, restaurants, and services shops supporting tourism and neighborhood-scaled retail. Upper floor uses should be offices and apartments. Streetscape improvements should focus along the key retail and pedestrian streets (Alliance et al., 2003).
2. **Civic and Cultural District.** This District focuses on the area's historic homes/places and civic uses, including City Hall. Jackson and Fillmore Streets are the primary pedestrian routes for this District, and should be the first to undergo streetscape improvements (Alliance et al., 2003).
3. **Arts District**. This District has been identified as a future concentrated redevelopment zone within downtown. When a concentrated political, financial, and investor effort can be made for this District, building renovations should focus on providing space for local artists and other retail establishments on ground-floors, and apartments, artists lofts, and offices on upper floors. Existing highway-oriented tourism stores would be encouraged to locate here (Alliance et al., 2003).

Iuka Battlefield

A 41-acre parcel at the Iuka Battlefield site, located south of the City of Corinth, was purchased by the Iuka Battlefield Commission, Incorporated in September 2001, and additional land is under option. Funding under the Intermodal Surface Transportation Efficiency Act (ISTEA) has been approved for the projects. The Iuka Battlefield Commission also recently acquired an antebellum home that was the headquarters for several generals during the Civil War, and also owns the Shady Grove cemetery where approximately 260 Confederate soldiers are interred in a mass grave. The intent for the newly acquired antebellum home is to use the home for an interpretive center/museum and to install wayside markers at the battlefield (Lominick, 2001).

Mississippi Civil War Trails

The State of Mississippi is in the development stages of its Civil War trails. The Federal government, through the Transportation Enhancement Program, is financing 80 percent of a $6.2 million program for recreation projects. The first priority in this three- to five-year program is restoration of existing sites. Funds will also be used to develop hiking and biking trails. Development of driving tours is the third priority. Eight driving tours are under consideration, two of which involve the Corinth, Mississippi area: 1) the current Corinth and Iuka driving tour, which would be expanded upon; and 2) the Calvary Campaign in northern Mississippi, extending from Meridian, Mississippi northward to the Memphis, Tennessee/Corinth, Mississippi area (Woodrick, 2001).

The Nathan Bedford Forest Trail

Development of the Nathan Bedford Forest Trail, led by the Civil War Preservation Trust (CWPT), is in the preliminary planning stages. The CWPT plans to pursue trail development as funds are available. The driving tour would cover sites in five states: Mississippi, Alabama, Tennessee, Kentucky, and Georgia. Corinth area sites that are likely to be included in the tour are Shiloh NMP, Parker's Crossroads, Tupelo, Streight's Raid, and Brices Crossroads (Richards, 2001).

The Forrest-Streight Trail

A driving tour brochure of the Forrest-Streight Trail in northwest Alabama was recently published. The Cullman County Commission recently created several interpretive signs along the 34-mile trail, which mark the places of major battles and troop movements (CWGN, 2001), which is just over the Mississippi-Alabama State line in Alabama.

4.2 ALTERNATIVE A: THE CORINTH UNIT AS BATTERY ROBINETT (NO ACTION)

Under Alternative A, it is assumed that the new Corinth Civil War Interpretive Center has already been constructed at the Battery Robinett site, and is in operational phase. Specific impacts on natural resources, cultural resources, visitor use and experience, and the socioeconomic environment associated with the construction and operation of the new interpretive center were addressed in a separate EA. The environmental consequences of Alternative A result from the management of the Battery Robinett site by the NPS.

4.2.1 Natural Resources

Soils and Topography

Under Alternative A, the No Action alternative, there would be no change in the management of the Battery Robinett site, since the NPS already manages the property, and all other properties being considered for inclusion into the national park system would remain under their current management. Existing soil conditions and topographic characteristics of the area and at the individual sites would continue under this alternative. Those sites currently experiencing soil erosion would continue to erode under this alternative. However, no direct impacts on soils or topography would be anticipated as a result of implementation of Alternative A. The NPS would continue to manage the Battery Robinett site using current management practices.

As stated in Section 3.1.1 of this EA, prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops, and that is available for these uses. While prime farmland soils are present in the affected areas of McNairy and Hardeman Counties, Tennessee, due to the presence of historic resources in the areas, these lands are currently not being used for farmland purposes. Under Alternative A, management of these areas would not change from their current status, and the NPS would continue partnerships with current landowners to ensure protection of the historic resources on the properties. While there would be no absolute assurances that current landowners would not develop on the lands containing prime farmland soils, it is very unlikely that current landowners would take any action that would degrade the integrity of the cultural resources on the property, and partnerships with the NPS would help assure that integrity of these resources is maintained. As part of this, it is very unlikely that any prime farmland in the area would ever be used for farming purposes. Therefore, Alternative A would not result in impacts on prime farmland, since this land is not easily available for use as farmland.

Water Resources

No change in management would occur under this alternative; the NPS would continue managing the Battery Robinett property using current management practices, and all other properties being considered for inclusion into the national park system would remain under their current management. Existing conditions of surface water and groundwater quantity and quality

would continue under this alternative. No direct or indirect impacts on water resources would be anticipated. The NPS would continue water quality monitoring on its properties, including identifying, researching, and managing point sources of pollution and taking corrective measures against any identified occurrence of water quality degradation (NPS, 1999a).

Air Quality

Under Alternative A, there would be no change in management of any of the properties being considered in the BAS, and existing management practices would continue. Current management of the properties does not involve any activities that would impact the air quality of the area. No additional sources of emissions would be created as a result of this alternative. Current air quality conditions and patterns in the region would continue.

Vegetation and Wildlife

No change in management would occur under Alternative A, and current management practices would continue. Vegetation and wildlife would continue in their current conditions on each of the properties. No direct or indirect impacts on these resources would occur as a result of implementation of Alternative A.

Threatened and Endangered Species and Species of Concern

Under Alternative A, no change in management would occur on any of the properties being considered in the BAS. Any threatened or endangered species or species of concern on the properties would continue in their current conditions under this alternative. No additional protection would be given to these species under Alternative A.

4.2.1.1 Connected Actions and Cumulative Impacts

Heritage tourism developments occurring in the region, along with the development and operation of the new Corinth Civil War Interpretive Center, may increase visitation to the historic sites not included in the Corinth Unit under Alternative A through promotion and marketing efforts. Increased visitation to the sites could adversely impact natural resources on the sites over the long-term, including increased trampling of vegetation, increased soil compaction, and increased levels of erosion, if no measures are taken to avoid or minimize such impacts. While NPS partnerships with current landowners would work to preserve the historic resources on the properties, efforts to preserve overall natural resources on the properties would be minimal. Therefore, implementation of Alternative A may result in a localized, minor, long-term, adverse cumulative impact on natural resources.

4.2.1.2 Conclusion

Under Alternative A, the No Action alternative, there would be no direct impacts on natural resources. However, adverse cumulative impacts on these resources may result over the long-term from increased visitation due to promotional efforts of these properties. These cumulative impacts would be localized and minor in intensity. The implementation of Alternative A would

not significantly impact, and thus not impair, natural resources or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents. Since only the Battery Robinett site would be managed by the NPS under this alternative, certain benefits to natural resources from NPS management would not occur on the other sites being considered in the BAS for inclusion in the Corinth Unit.

4.2.2 Cultural Resources

No change in management would occur under Alternative A; the NPS would continue managing the Battery Robinett property using current management practices, and all other properties being considered for inclusion into the national park system would remain under their current management. NPS partnerships with landowners of the other sites not included in the Corinth Unit would continue in order to preserve and protect the historic resources on the properties. However, the NPS would not have the authority to restrict or prohibit development on these properties, or to enforce certain management practices. Those historic resources currently experiencing erosion or adverse impacts from human activities, such as ORV use, would continue to be degraded under this alternative. While implementation of Alternative A would not be expected to directly impact cultural resources in the short-term, potential adverse impacts on these resources could occur over the long-term. These impacts could range from minor to major in intensity, depending on the specific threats to cultural resources.

4.2.2.1 Connected Actions and Cumulative Impacts

Heritage tourism developments occurring in the region, along with the development and operation of the new Corinth Civil War Interpretive Center, may increase visitation to the historic sites not included in the Corinth Unit under Alternative A through promotion and marketing efforts. Increased visitation to the sites could increase the potential for human impacts, such as vandalism or looting, on the site's cultural resources. Under this alternative, neither constant monitoring of the resources nor an increased presence of law enforcement on the sites would occur. This could result in a long-term, localized, moderate to major, adverse impact on cultural resources. While NPS partnerships with owners of these properties could work to develop measures to prevent such impacts, no mechanism would be in place to ensure enforcement of those measures.

Under Alternative A, current landowners of the properties being considered for addition to the Corinth Unit would maintain ownership and management of their properties. These landowners would not be prohibited from developing their lands, although it would be unlikely that they would undertake any activities that would intentionally damage the historic resources on their properties. NPS partnerships with these owners would also help to protect against development. However, no assurance is granted under this alternative that developments, which could potentially damage cultural resources, would not occur on these lands.

4.2.2.2 Conclusion

Under Alternative A, the NPS would not have the authority to restrict or prohibit development on properties not included in the Corinth Unit, or to enforce certain management practices on those properties. While implementation of Alternative A would not be expected to directly impact cultural resources in the short-term, potential adverse impacts on these resources could occur over the long-term. These impacts could range from minor to major in intensity, depending on the specific threats to cultural resources, and could potentially constitute an impairment of cultural resources or related values. In addition, adverse cumulative effects on cultural resources may occur over the long-term. Increased visitation to these sites resulting from to promotional efforts would increase the potential for human impacts on these resources, without adequate protections.

4.2.3 Visitor Use and Experience

Under Alternative A, the No Action alternative, there would be no change in the management of the Battery Robinett site, since the NPS already manages the property, and all other properties being considered for inclusion into the national park system would remain under their current management. No change in current management practices would occur; current practices would continue. NPS partnerships with landowners of the other sites not included in the Corinth Unit would continue in order to preserve and protect the resources on the properties and provide for visitor use and interpretation. However, the NPS would not have the authority to restrict or prohibit development on these properties, or to enforce certain management practices. While implementation of Alternative A would not be expected to directly impact visitor use and experience over the short-term, potential adverse impacts could occur over the long-term, and could range from minor to moderate in intensity, depending on the specific threats at each site.

4.2.3.1 Connected Actions and Cumulative Impacts

There are many projects and activities occurring in the region that would enhance and expand visitor use and experience. As discussed in Section 4.1.3 of this EA, there are active preservation efforts occurring in the region to preserve Civil War sites and promote heritage tourism. Annual visitation to the new Corinth Interpretive Center at Battery Robinett is expected to range from 150,000 to 250,000 visitors (Harrell, 2003). A visitor to the new Corinth Interpretive Center would likely visit other nearby Civil War and historic sites around Corinth, including several of the sites being considered for inclusion into the Corinth Unit, even without NPS management of those sites. However, some of the farther-out sites would likely not be visited. Visits to the new Interpretive Center, coupled with visits to other historic sites in Corinth, northeastern Mississippi, and southwestern Tennessee, would give the visitor a fairly in-depth analysis of the Siege and Battle of Corinth, and an understanding of preceding, co-temporal, and subsequent historical events in the area. Visitors prompted to go to one or more additional tourist sites in Corinth are more likely to have access to materials on lesser known, but important, Civil War sites. This includes sites on the Corinth Campaign Civil War Driving Tour and the downtown Corinth walking tour. However, this synergy between sites is not likely to change as a result of Alternative A.

Visitor use and experience could be further enhanced by circulation, access, and streetscape improvements studied in the *Corinth Downtown and Connecting Corridors Action Plan* that was recently completed. The intent of the improvements is not only to ease traffic and parking congestion, but improve the visitor experience in Corinth (Alliance et al., 2003). Benefits are likely to be beneficial in the long-term. However, there would be no change in the intensity of this impact due to Alternative A.

4.2.3.2 Conclusion

Alternative A would not result in any direct impacts on visitor use and experience. Current visitor use patterns would continue, as would existing visitor experience at all sites. However, since the NPS would not have the authority to restrict or prohibit development on properties not included in the Corinth Unit, over the long-term, potential adverse impacts on visitor use and experience may occur in the region. These impacts may range from minor to moderate in intensity. However, the implementation of Alternative A would not significantly impact, and thus not impair, opportunities for visitor use and experience that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.2.4 Socioeconomic Environment

Population, Economy, and Social Conditions

Under Alternative A, the No Action alternative, there would be no change in the management of the Battery Robinett site, since the NPS already manages the property, and all other properties being considered for inclusion into the national park system would remain under their current management. No change in current management practices would occur; current practices would continue. No impacts on the local or regional population or economy are anticipated to result from Alternative A. Existing trends in population growth, employment, income and poverty levels, and other socioeconomic parameters are anticipated to continue in their current patterns.

The local community is in strong support of the expansion of the Corinth Unit and management/ protection of these properties by the NPS. Implementation of Alternative A may result in community conflict, since additional protection of important historic resources that would be offered by the NPS management would not occur. Although the community may not support implementation of Alternative A, other potentially adverse social impacts associated with increased visitation to the sites, including trespassing in residential areas, would not occur under this alternative.

Transportation

Under Alternative A, the No Action alternative, no change in management of any of the properties evaluated in the BAS would occur. All properties would continue under their same

management and ownership. Alternative A assumes that the new Corinth Civil War Interpretive Center has already been constructed at the Battery Robinett site, and is in operational phase. Therefore, any traffic impacts associated with the interpretive center would be considered part of the current traffic conditions in the area. Implementation of Alternative A would not change the level of congestion or traffic in the affected area. Existing traffic patterns and road conditions would continue.

Land Use

Under Alternative A, the Corinth Unit of Shiloh NMP would consist only of the approximately 20-acre Battery Robinett site. No additional properties would be added to the Corinth Unit. Since the NPS already owns and manages the Battery Robinett property, there would be no change in land ownership or management under this alternative.

All properties would continue under their current ownership, unless another organization, such as the FSBC, were to purchase land at one or more of the properties. NPS partnerships with landowners of the other sites not included in the Corinth Unit would continue in order to preserve and protect the resources on the properties and provide for visitor use and interpretation. However, the NPS would not have the authority to restrict or prohibit development on these properties, or to enforce certain management practices.

Utilities and Public Services

Under Alternative A, no change in the management of any of the properties would occur. Existing conditions and management practices would continue. No activities would occur as a result of this alternative that would have the potential to disrupt or damage utility lines in the area. In addition, no additional utility hookups would be necessary and no increases in demand for utilities would occur as a result of this alternative. Public services would continue to operate in the areas under current conditions and demands.

Noise

Under Alternative A, no change in the management of any of the properties would occur. Existing conditions and management practices would continue. Current management activities may involve some activities, such as mowing, that generate noise. However, since these activities are currently occurring on the properties, no new noise sources would be created as a result of this alternative. No activities would occur as a result of this alternative that would increase or decrease noise levels in the area. Current area noise levels and patterns would continue.

Recreation

Under Alternative A, the No Action alternative, there would be no change in the management of the Battery Robinett site, since the NPS already manages the property, and all other properties being considered for inclusion into the national park system would remain under their current management. Therefore, there would be no potential impacts on recreation in the area. Existing

recreational opportunities and developments would continue, and no new recreational opportunities would be created under this alternative. Alternative A would not increase visitation to the area beyond current levels.

Human Health and Safety

Under Alternative A, no activities would occur, and no additional risks would be created, that would threaten the health or safety of the public. The NPS would continue its active role in hazard identification and resource monitoring on its lands (NPS, 1999a), which includes the Battery Robinett property only. Visitors to all sites other than Battery Robinett would continue to rely on local community emergency medical services in the event of an accident/injury or sickness while visiting those properties.

Waste Management

Under Alternative A, no change in management of any of the properties would occur. This alternative would not increase or decrease the amount of waste currently generated in the area. Existing waste management practices would continue at each of the properties.

Visual Resources

Under Alternative A, the No Action alternative, no change in management of any of the properties would occur, and existing conditions and management practices on the properties would continue. The visual quality of the area would continue in its current condition under this alternative, at least for the short-term, and existing features would remain in the area. No direct impacts on visual resources are expected to result from implementation of Alternative A.

NPS partnerships with landowners of the other sites not included in the Corinth Unit would continue in order to preserve and protect the resources on the properties, including historic viewsheds. However, the NPS would not have the authority to restrict or prohibit development on these properties, or to enforce certain management practices. While implementation of Alternative A would not be expected to directly impact visual resources over the short-term, potential adverse impacts on historic viewsheds could occur over the long-term, and could range from minor to major in intensity, depending on the specific developments at or around each site.

Environmental Justice/Protection of Children

Under Alternative A, the No Action alternative, no change in management of any of the properties would occur, and existing conditions and management practices on the properties would continue. No disproportionate adverse impacts on low-income or minority populations would occur under this alternative. In addition, this alternative would not involve any activities that would threaten the health or safety of children.

4.2.4.1 Connected Actions and Cumulative Impacts

Several of the properties being considered for inclusion in the Corinth Unit are currently under development pressure or nearby lands are being commercially or residentially developed. Although the NPS would continue partnerships with landowners to preserve resources on these sites, under Alternative A, the NPS would have no authority to restrict development on or adjacent to the sites. In addition, the NPS would not be able to restrict property owners from selling their property to other entities, including commercial companies. It is possible that cumulative changes in land use could occur over the long-term. In addition, potential developments could result in long-term, adverse, impacts on visual resources in the region.

The local and regional community is not in support of implementation of Alternative A. However, community support is evidenced for other projects occurring in the area, such as heritage tourism developments, operation of the new Corinth Civil War Interpretive Center, and the efforts to improve the area's streetscapes. Therefore, any no cumulative adverse social impacts would result from implementation of Alternative A.

Transportation, human health and safety, and visual resources would be enhanced by the circulation, access, and streetscape improvements studied in the *Corinth Downtown and Connecting Corridors Action Plan* that was recently completed. The intent of the improvements is not only to ease traffic and parking congestion, but improve the visitor safety and experience in Corinth (Alliance et al., 2003). Benefits are likely to be beneficial in the long-term. However, there would be no change in the intensity of this impact due to Alternative A.

4.2.4.2 Conclusion

Alternative A would not result in any adverse or beneficial direct or indirect impacts on the population, economy, utilities and public services, noise, recreation, human health and safety, waste management, or environmental justice in the area. Existing conditions and patterns of these resources areas would continue. However, changes in land uses in the area could occur over the long-term under this alternative due to lack of restrictions on development or land management. This could also result in long-term, minor to major, adverse impacts on visual resources and historic viewsheds. In addition, a short-term to potentially long-term, minor, regional, adverse social impact may result from implementation of Alternative A, due to the community being in support of expansion of the Corinth Unit. The implementation of Alternative A would not significantly impact, and thus not impair, the socioeconomic environment or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.3 ALTERNATIVE B: THE CORINTH UNIT AS BATTERY ROBINETT PLUS OTHER CORE RESOURCES

Under Alternative B, it is assumed that the new Corinth Civil War Interpretive Center has already been constructed at the Battery Robinett site, and is in operational phase. Specific impacts on natural resources, cultural resources, visitor use and experience, and the socioeconomic environment associated with the construction and operation of the new interpretive center were addressed in a separate EA. The environmental consequences of Alternative B result from the management of the Battery Robinett site, and 11 of the 18 other properties determined to be eligible for inclusion into the Corinth Unit of Shiloh NMP, by the NPS. The remaining 7 sites, although included within the Corinth Unit, would continue to be managed by current landowners.

4.3.1 Natural Resources

Under Alternative B, the NPS would take over management of 11 of the sites considered eligible for inclusion into the Corinth Unit of Shiloh NMP. In accordance with NPS *Management Policies 2001*, the NPS would manage the natural resources on these lands to maintain them in an unimpaired condition, and to preserve fundamental physical and biological processes. A long-range comprehensive strategy for natural resources management would be developed and implemented for these lands to identify activities necessary to achieve the desired future conditions of the Park's natural resources. Such activities may include inventorying, research, monitoring, restoration, mitigation, protection, and resource use management (NPS, 2000e). Overall, long-term, localized, moderate, beneficial impacts on natural resources would result from NPS management of 11 sites considered eligible for inclusion into the Corinth Unit.

Soils and Topography

Under Alternative B, the NPS would take over management of 11 sites considered eligible for inclusion into the Corinth Unit of Shiloh NMP. Management of these lands would not alter the topography at any of the sites. In accordance with NPS *Management Policies 2001*, the NPS would actively seek to preserve the soil resources on its lands. As part of these efforts, soils would be managed to control for erosion, physical removal, and contamination (NPS, 2000e). Activities that increase soil erosion, such as off-road vehicle (ORV) use, would be managed on these lands via law enforcement operations. Therefore, localized, minor to moderate, long-term, beneficial impacts on soils on the 11 sites are anticipated to result from implementation of this alternative.

As a result of Alternative B, visitation to each of the properties would be expected to increase over the current level. Increased visitation at the properties may increase soil compaction and erosion potential due to increased numbers of visitors walking on and around the sites. In addition, the NPS would likely remove some vegetation, including some trees, from the

immediate vicinity of cultural resources, in order to protect those resources and stabilize the sites. Removal of vegetation has the potential to increase surface water runoff and soil erosion in the area affected by the removal. These impacts would be long-term, minor, and localized. However, the NPS would not take any actions that would increase soil erosion on its properties to any noticeable extent. Instead, as stated above, the NPS would take actions to minimize erosion on its lands, which would decrease the intensity of these potential impacts to almost negligible.

Seven of the sites eligible for inclusion in the Corinth Unit would continue to be managed by their current landowners under Alternative B. These landowners may or may not allow public visitation to the resources on their lands. If visitation were allowed on these sites, adverse impacts on soil resources could occur from increased soil compaction and erosion potential, as described above. These adverse impacts could go unchecked and could worsen over time, since the NPS would not have management control of these sites. There would be the potential for long-term, minor to moderate, localized, adverse impacts on these seven sites over the long-term.

NPS management of 11 of the 18 sites eligible for inclusion in the Corinth Unit would change the classification of these 11 sites from private to public. As discussed in Section 3.1.1, public land in national parks is land not available for farming (NRCS, 1997a). Although prime farmland soils would still be present at some of the sites, inclusion of these sites into the national park system would render them unavailable for use for farming purposes. Therefore, any prime farmland present on these sites would be lost for future such uses. However, this impact would be considered to be minor in intensity, given the current restrictions on use of the land for cultural resource management reasons, and the small amount of potential prime farmland on each of the sites. The loss of prime farmland as a result of this alternative would be permanent and localized. Prime farmland would not be lost on the other 7 sites of the Corinth Unit because these sites would remain under private ownership and management.

Water Resources

As discussed above, increased visitation to the properties may increase soil compaction and erosion potential, due to increased numbers of visitors walking on and around the sites. Increased soil erosion could potentially increase sedimentation and turbidity in nearby watercourses. However, this impact would be negligible, at most. In addition, the NPS would likely remove some vegetation, including some trees, from the immediate vicinity of cultural resources, in order to protect those resources and stabilize the sites. Removal of vegetation has the potential to increase surface water runoff and soil erosion in the area affected by the removal. However, the NPS would not take any actions that would increase soil erosion on its properties to any noticeable extent. Instead, as stated above, the NPS would take actions to minimize erosion on its lands. Therefore, any potential adverse impacts on water resources associated with increased visitation to NPS-managed Corinth Unit sites and removal of vegetation would be long-term, localized, and negligible. However, as noted above, any adverse impacts on water resources associated with increased visitation to the seven Corinth Unit sites not managed by the NPS under Alternative B would likely go unchecked, and could lead to minor, localized, adverse impacts over the long-term.

In accordance with NPS *Management Policies 2001*, the NPS would take all actions necessary to maintain and/or restore the Park's surface and ground water quality, consistent with the Clean Water Act (CWA) and all other applicable Federal, State, and local laws and regulations. The NPS would determine and monitor the quality of water resources within the Park, and would avoid pollution of these waters by human activities (NPS, 2000e). Any derogation of water quality found would be acted upon immediately, and any identified point sources of pollution would be researched and managed accordingly (NPS, 1999a). Therefore, a long-term, localized, minor to moderate, beneficial impact on water resources and water quality would be expected to result from NPS management under this alternative.

None of the properties that would be acquired and managed by the NPS under Alternative B contain any wetlands or are located adjacent to any wetlands. Therefore, there would be no potential to directly affect wetlands under Alternative B. In addition, none of the 11 sites are located within a floodplain. However, the Davis Bridge Battlefield site, which would remain under existing ownership patterns, does contain wetlands and is located within the floodplain of the Hatchie River. While it is unlikely that a large amount of visitation would occur on this portion of the Davis Bridge site, there is the potential that some visitors may walk along the banks of the River, potentially damaging streamside vegetation and increasing the potential for erosion of the banks. These impacts would likely go unmonitored under Alternative B, since the NPS would not have management responsibility of this site. Therefore, there is the potential for long-term, minor, adverse impacts on wetlands and floodplains to indirectly occur as a result of Alternative B. In addition, the beneficial impacts on these resources from NPS management (see Section 4.4.1) would not be realized under Alternative B.

Air Quality

NPS management of 11 of the potential Corinth Unit sites would not involve any activities that would create or increase emissions sources in the area, nor would management activities generate fugitive dust. On the contrary, in accordance with NPS *Management Policies 2001*, the NPS would work to develop pollution control programs to preserve, protect, and enhance the air quality of the Unit. As part of these efforts, the NPS would inventory air quality-related values associated with the Park, evaluate any air pollution causes and impacts, minimize air quality pollution emissions, and monitor air quality conditions (NPS, 2000e).

As a result of implementation of Alternative B, visitation to each of the properties is expected to increase over current levels, as is the current number of driving tours throughout the area. Increased numbers of vehicles in the area would increase the amount of emissions generated beyond current levels. Although long-term, this adverse impact is expected to be negligible to minor, and regional.

Vegetation and Wildlife

Under Alternative B, the NPS would likely remove some trees from certain Corinth Unit properties under NPS management, particularly certain trees growing out of surviving parapets or earthworks, for the purposes of cultural resource protection. Whenever the NPS removes plants or animals, it is NPS policy to ensure that such removals would not result in unacceptable

impacts to native resources, natural processes, or other Park resources. Therefore, removal of any vegetation, and any resulting loss of habitat, would, at most, have a long-term, negligible, localized, adverse impact on vegetation and wildlife.

Increased visitation as a result of implementation of Alternative B, and the movements and noise associated with these visitors, may cause some disturbance to more sensitive wildlife or wildlife in more sensitive phases of their life history, such as nesting or denning. Nesting birds, for example, could abandon their nests if there is too much human foot traffic nearby. However, in many cases, such birds can move to a nearby location and nest again. Overall, any adverse impacts from visitation-related disturbance to wildlife behavior are likely to be long-term, negligible, and localized.

The potential exists for the unchecked movement of pedestrian visitors on the Corinth Unit sites to damage or trample vegetation, especially non-woody forbs, herbs, and grasses, but also smaller trees. The NPS would address this situation on sites under NPS management by clearly marking and signing trails, and by taking additional measures if it appears there is a developing situation of substantial off-trail movement that is damaging plants. However, these impacts would likely go unmonitored and unmitigated on the seven potential Corinth Unit sites that would remain under current ownership under Alternative B, potentially resulting in long-term, localized, minor, adverse impacts on vegetation.

According to NPS *Management Policies 2001*, the NPS would maintain all native plants and animals on the Corinth Unit properties under NPS management, preserving and/or restoring the natural abundances, diversities, dynamics, distributions, and habitats of native populations and their communities and ecosystems. The NPS would also actively minimize human impacts from visitation on native plants and animals, as well as their communities and ecosystems. Whenever possible, the NPS would work with other land managers to encourage the conservation of native species and their habitats outside of NPS lands. These measures would result in a long-term, localized or regional, moderate, beneficial impact on vegetation and wildlife.

Threatened and Endangered Species and Species of Concern

There are no federally listed species known from Alcorn County, the location of the 11 potential Corinth Unit sites that would be managed by the NPS under Alternative B. As stated in Section 3.1.4.1 of this EA, only Hardeman County, Tennessee has a documented occurrence of a federally listed species. The NPS would not acquire any potential Corinth Unit sites located in this county under Alternative B. Therefore, no direct impacts on federally listed species are anticipated to occur under this alternative.

A number of sensitive plant and animal species listed by the States of Mississippi and Tennessee occur in all three counties containing potential Corinth Unit sites. These organisms do not receive the same level of legal protection as federally listed species. While increased visitation to the Corinth Unit sites may increase the potential for disturbance of such wildlife or damage to rare vegetation, NPS management of 11 of the sites would allow for much greater protection of sensitive species on these site, resulting in a long-term, localized, moderate to major, beneficial impact on these species. It is NPS policy to survey for, protect, prevent detrimental effects on,

and aim to recover all species listed under the ESA that are native to national park system units. The NPS would continuously cooperate with both the USFWS and the National Marine Fisheries Services, as appropriate, to ensure compliance with the ESA. Among other actions, the NPS would develop and implement programs on its lands to inventory, monitor, restore, and maintain habitats for listed species and to control for detrimental non-native species and visitor access. In addition, the NPS would inventory, monitor, and manage State and locally listed species in a manner similar to NPS management of federally listed species, whenever possible (NPS, 2000e), allowing for much greater protection of these species on 11 of the 18 potential Corinth Unit sites than under current conditions. However, none of these beneficial impacts would occur on the 7 potential Corinth Unit sites that would remain under existing ownership under Alternative B. The potential for increased visitation to these 7 sites, if allowed by current landowners, and associated natural resource impacts could adversely impact sensitive species and habitats at the sites over the long-term. This could result in a long-term, localized, minor, adverse impact on sensitive species at these sites.

4.3.1.1 Connected Actions and Cumulative Impacts

Heritage tourism developments occurring in the region, along with the development and operation of the new Corinth Civil War Interpretive Center, may further increase visitation to the historic sites within the Corinth Unit through promotion and marking efforts. This increase in visitation to the potential Corinth Unit sites could cause greater damage to natural resources on the sites over the long-term, including increased trampling of vegetation, soil compaction, erosion potential, and disturbance of wildlife and habitat. The NPS would continually monitor those 11 sites under their management under Alternative B to ensure protection of natural resources. However, such continuous monitoring and preventative management would not occur on the other 7 Corinth Unit sites remaining under existing ownership and management. While the decision to allow visitation on these other 7 sites would be up to the current landowner, should visitation be allowed, impacts from greater visitor use of the sites could result in greater, long-term, localized, adverse impacts on natural resources. The intensity of this cumulative impact would depend on the amount of visitation at the unprotected sites, which areas receive the highest visitor use, and which measures, if any, the private landowner would take to decrease adverse natural resource impacts.

Over the long-term, air quality could be impacted with a cumulative increase in visitor traffic, and associated increases in vehicular emissions. However, these increases in emissions would not be expected to result in major impacts, such as a change in the NAAQS attainment status of any of the affected counties. Since the current quality of air in the region is very good, and the effects of emissions would be distributed across the region, this impact would be minor in intensity. Although greater air quality impacts would be expected in the City of Corinth, and during months of higher visitation, this would still not result in a major impact on air quality within the City.

<u>Consideration of Impacts From Potential Future Developments</u>

As discussed in Section 4.1.3 of this EA, if Alternative B is selected as the action to be taken, the NPS would likely undertake developments at each of the Corinth Unit properties under NPS

management to enhance visitor experience. Such developments could include: improving access to the sites; constructing parking areas for cars, buses, and recreational vehicles (RVs); developing trails around the sites; installing interpretive wayside signs and markers; and providing informational pamphlets that describe the historic events. These developments have the potential to impact natural resources on and around the properties. The following is a general discussion of such impacts, which should be considered in subsequent NEPA documentation regarding these developments.

Construction of parking areas and trails may require some clearing of vegetation and land grading activities. Removal of vegetation could result in increased surface water runoff and soil erosion in the construction areas, since the presence of vegetation provides erosion control by increasing infiltration and providing soil stabilization. Vegetation removal may also result in the permanent loss of a negligible to minor amount of wildlife habitat. Localized soil disturbance and compaction might result from grading and the use of heavy equipment. Compaction increases the impermeability of the soil, which could contribute to short-term, increased surface water runoff from the project site, and subsequent increases in erosion, and resultant sedimentation and turbidity in nearby watercourses. However, since the sites are generally located on uplands, and are not traversed by permanent streams, the potential for adverse impacts on water resources as a result of construction activities would be negligible.

Land grading would also result in topographic changes to the area. If existing drainage patterns are maintained, grading could also have short- and long-term beneficial effects on natural resources. Land grading helps to control surface water runoff, soil erosion, and sedimentation by providing a flatter surface for construction, thus decreasing the velocity of potential surface water runoff. Land grading also provides long-term stabilization of slopes and soils, minimizing soil loss (NRCS, 1994).

Air quality could be adversely impacted during construction activities and over the long-term due to the generation of emissions from construction equipment and vehicles. Although the amount of emissions generated would likely have only a negligible to minor impact on air quality, once specific development plans have been made, levels of criteria pollutant emissions will need to be estimated and analyzed against the *de minimis* threshold for each pollutant.

In addition to emissions from construction equipment and vehicles, temporary impacts on air quality may also result from the generation of fugitive dust, especially during activities that disturb soils, such as land grading activities.

Soil erosion, surface water runoff, and fugitive dust would likely be controlled throughout all stages of site preparation and construction by using selected best management practices (BMPs) provided in *Planning and Design Manual for the Control of Erosion, Sediment, and Stormwater* (NRCS, 1994). In addition, construction activities in the State of Tennessee must follow the Criteria for Area Construction Activities provided in the *Tennessee Erosion & Sediment Control Handbook* (TDEC, 1992). The State of Tennessee requires the control of fugitive dust using specific BMPs (TDEC, 2001c).

As with almost any construction project involving the use of heavy equipment, there is some risk of an accidental POL (petroleum, oil, lubricant) spill or unplanned release of some other toxic or hazardous contaminant onto the ground. If an accidental spill were to occur, localized soil contamination in the affected area would result, posing a risk to human health and safety and wildlife, potentially killing vegetation, and potentially degrading water and air quality in the area. However, the NPS requires that all employees that would be exposed to hazardous materials be trained and instructed in approved methods for handling and storage of such materials (NPS, 2000d). Therefore, the probability of a spill would be very low. In addition, the potential for an accidental chemical spill during construction could be further reduced by the development and implementation of a Spill Prevention, Control, and Countermeasures (SPCC) Plan, which would also minimize adverse impacts associated with a spill. The NPS has guidelines for the preparation of SPCC Plans, contained in *Envirofacts*. *Spill Prevention Planning* (NPS, 1999b).

Construction activities would likely cause the temporary disturbance of wildlife on and around the properties due to the presence of workers and noise generated. Potential adverse impacts on vegetation could result from construction activities, including direct damage caused by accidental contact with construction equipment and indirect damage caused by soil compaction, excavation, or filling occurring too close to trees or other vegetation.

Coordination and consultation with the USFWS would need to be conducted regarding the presence or absence of any federally listed threatened or endangered species on or near the construction site. If any such species are present on the site to be constructed, measures would be taken to avoid impacts to these species. In view of the general absence of federally listed threatened and endangered species in Alcorn County, plus the comparatively modest scale of the potential future visitor-related developments, adverse impacts on federally listed species are likely to be non-existent to negligible, at most.

A number of sensitive plant and animal species listed by the State of Mississippi occur in Alcorn County, the only county that would be affected by potential NPS developments under Alternative B. These organisms do not receive the same level of legal protection as federally listed species. Potential future NPS developments are unlikely to have more than a negligible impact on any of these listed populations. Where listed species are identified that could potentially be impacted by a forthcoming development, the NPS would coordinate and cooperate with State authorities, such as the Mississippi Natural Heritage Program, and if appropriate, the USFWS to protect these species.

Long-term impacts of potential NPS developments to enhance visitor experience would be limited. Depending on the type of surface used for the parking areas and trails, there is a potential for long-term soil compaction and erosion in these areas. If the surface to be used is an impervious surface, long-term increases in surface water runoff during storm events could occur.

Enhancement of visitor experience would likely lead to increased visitation at each of the sites, as well as an increase in the amount of visitors at each of the sites at any given time. Long-term increased visitation and the presence of more visitors at each site at any one time, due to parking improvements and expansions, may increase the potential for trampling of vegetation and

disturbance of wildlife. However, since trails would be developed at many of the sites, trampling of vegetation would be reduced, and mostly localized to the areas of the trails.

4.3.1.2 Conclusion

Implementation of Alternative B would have long-term, localized, minor to moderate, beneficial impacts on soils due to NPS management activities to control for erosion. A negligible, long-term, localized adverse impact on soils and water resources may result from increased visitation on the sites and removal of trees for cultural resource protection. NPS management would decrease the potential for and severity of these impacts on 11 of the Corinth Unit sites. Any adverse impacts on natural resources from increased visitation at the other 7 sites would go unchecked, and could result in a long-term, localized, minor to moderate, adverse impact on natural resources, including sensitive species. In addition, a minor, permanent loss of prime farmland may result from Alternative B. No impacts on topography would occur.

Negligible to minor, long-term, regional adverse air quality impacts may result from increased vehicular traffic throughout the area. NPS management of 11 of the 18 eligible Corinth Unit properties would be expected to result in long-term, localized, moderate, beneficial impacts on water resources and quality, due to increased monitoring and protection measures. While long-term, localized, negligible, adverse impacts on vegetation and wildlife may occur due to increased visitation to the sites and removal of vegetation, long-term, localized or regional, moderate, beneficial impacts on wildlife and vegetation, including sensitive species, would be expected under NPS management, due to active protection and preservation measures.

The implementation of Alternative B would not significantly impact, and thus not impair, natural resources or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.3.2 Cultural Resources

Under Alternative B, the NPS would take over management of 11 of the 18 sites determined eligible for inclusion in the Corinth Unit of Shiloh NMP. Management of these lands by the NPS would provide for a much higher level of protection of cultural resources than that discussed under Alternative A. Long-term, moderate to major, localized, beneficial impacts on cultural resources are anticipated to result from implementation of Alternative B.

The NPS would follow NPS *Management Policies 2001* (NPS, 2000e) and the NPS Cultural Resource Management Guideline (NPS, 1997) for the management of cultural resources on each of the Corinth Unit sites under NPS management. There are three major components to the NPS cultural management program. These include: 1) research to identify, evaluate, document, register, and establish basic information regarding cultural resources; 2) planning to ensure integration of cultural resource information into management processes, decision-making, and establishment of priorities, as well as consultation and coordination with outside entities; and 3)

management to ensure preservation and protection of cultural resources, and to promote public understanding and enjoyment of those resources (NPS, 2000e).

NPS management of 11 of the 18 Corinth Unit sites would allow for the use of the most effective measures and equipment to protect cultural resources on these properties against threats, including looting, vandalism, overuse, natural or human-imposed degradation or deterioration. All resources on the 11 sites would be monitored regularly, and conditions at the sites would be evaluated against baseline data to detect potential threats and damages. The NPS would take measures to stabilize the resources at each of the sites to protect those resources against erosion, slumping, or other forms of deterioration, enhancing long-term preservation (NPS, 2000e).

These beneficial impacts would not occur on the other 7 sites eligible for inclusion in the Corinth Unit, since these sites would remain under private ownership under Alternative B. There would be the potential for both natural and human-imposed degradation or deterioration at these sites over the long-term. These resources would likely diminish somewhat over time without active preservation and protection, resulting in a long-term, minor to moderate, adverse impact on cultural resources.

Under Alternative B, visitation to the potential Corinth Unit sites is expected to increase over current levels. Increased visitation may lead to an increase in human impacts on cultural resources, such as vandalism, looting, or accidental harm. In accordance with the Strategic Plan for Shiloh NMP, law enforcement and facility maintenance would be undertaken at every site managed by the NPS to protect and preserve site conditions on those properties (NPS, 1999a). The increased presence of NPS personnel and enforcement of protection measures on these sites would minimize any potential adverse human impacts on cultural resources. In addition, in accordance with NPS *Management Policies 2001*, the Park superintendent would establish a visitor carrying capacity at each of the sites managed by the NPS to protect the resources on the property. This carrying capacity would be enforced and monitored by NPS personnel (NPS, 2000e). Establishment of a visitor carrying capacity would minimize any adverse impacts on cultural resources associated with unrestricted levels of visitation.

However, such restrictions would not be placed on the seven Corinth Unit sites that would remain under private ownership under Alternative B. While public visitation to these sites may or may not be allowed by the private landowners, should visitation be allowed, there would be the potential for long-term, localized, minor to moderate, adverse impacts on the cultural resources present at each site. Carrying capacities would not be monitored at these sites, and these sites would not be protected against human impacts or vandalism.

NPS management of some of the Corinth Unit sites would provide for the long-term preservation of cultural resources on these sites, and would aim to enhance public understanding and appreciation of all features and qualities that contribute to the significance of the resources at all Corinth Unit sites, regardless of ownership (NPS, 2000e). Enhancement of public understanding of the significance of the cultural resources, and knowledge of the reasons the resources are being protected and preserved may help to enlist the public in protection of the resources, even at sites that would not be managed by the NPS.

Prior to any decision-making regarding activities on or uses of the properties managed by the NPS, an analysis of how such activities or uses would affect cultural resources would be conducted, and consideration would be given to alternatives that minimize or avoid any adverse impacts on these resources. In addition, the Park's management plan would outline and prescribe programs to identify, assess, manage, and monitor cultural resources on the Park. This portion of the plan would be required to be updated periodically, in coordination with land uses and resource conditions (NPS, 2000e). Such protection would not be conducted for those Corinth Unit properties for which the NPS would not have management responsibility under Alternative B. There would be a continued potential for private landowners of the seven sites not managed by NPS to develop on their lands, and for the cultural resources associated with eligibility in the Corinth Unit to be destroyed.

One additional potential impact of Alternative B that may result in adverse effects on the cultural resources at Corinth Unit properties would be potential developments on private lands adjacent to Corinth Unit properties. One example of this might be an increased demand for commercial land uses as a result of increased visitation in the region. Although the NPS would develop partnerships and agreements with adjacent landowners, including landowners of Corinth Unit sites not managed by the NPS, to help assure cultural resource protection, no guarantees or restrictions against private developments would be assured. In accordance with NPS *Management Policies 2001*, the Park superintendent would monitor land use proposals and changes to adjacent lands, and the potential impacts that such changes may have on Park resources or values. Compatible adjacent land uses would be encouraged. In addition, a land protection plan should be developed for lands within the Corinth Unit to document which lands need to be in public ownership to carry out Park purposes. This plan would guide the Park's land acquisition priorities, with consideration given to the relationship between the Park and adjacent land uses and threats that those land uses may have on Park resources (NPS, 2000e). Implementation of these management policies would reduce potential adverse impacts on the Park's cultural resources resulting from land use changes or incompatible land uses within or adjacent to Park boundaries.

4.3.2.1 Connected Actions and Cumulative Impacts

Under Alternative B, current landowners of seven of the Corinth Unit properties would maintain ownership and management of their properties. These landowners would not be prohibited from developing their lands. While it would be unlikely that these landowners would undertake activities that would intentionally damage the historic resources on their properties, no assurance would be granted under Alternative B that developments, which could damage or destroy cultural resources, would not occur on these lands. There would be the continued potential for development pressure at some of these sites, as well as the potential for the resources on these sites to be lost, resulting in potential long-term, moderate, adverse cumulative impacts on cultural resources.

Other heritage tourism projects and developments in the region, particularly the operation of the new Corinth Civil War Interpretive Center, would likely serve to increase visitor and public appreciation and knowledge of the significance of the cultural resources on all of the Corinth Unit properties, regardless of ownership or management responsibilities. Enhancement of public

understanding of the significance of the cultural resources, and knowledge of the reasons the resources are being protected and preserved, may help to enlist the public in protection of the resources. This would have a long-term, minor to moderate, localized, beneficial impact on cultural resources.

Heritage tourism developments could also further increase visitation to the historic sites within the Corinth Unit through promotion and marking efforts. This increase in visitation to the potential Corinth Unit sites could result in the potential for greater damage to cultural resources on the sites over the long-term. The NPS would continually monitor those 11 sites under their management under Alternative B to ensure protection of cultural resources. However, such continuous monitoring and preventative management would not occur on the other 7 Corinth Unit sites remaining under existing ownership and management. While the decision to allow visitation on these other 7 sites would be up to the current landowner, should visitation be allowed, impacts from greater visitor use of the sites could result in greater, long-term, localized, adverse impacts on cultural resources. The intensity of this cumulative impact would depend on the amount of visitation at the unprotected sites, which areas receive the highest visitor use, and which measures, if any, the private landowner would take to decrease adverse cultural resource impacts.

Consideration of Impacts From Potential Future Developments

As discussed in Section 4.1.3 of this EA, if Alternative B is selected as the action to be taken, the NPS would likely undertake developments at each of the Corinth Unit properties under NPS management to enhance visitor experience. Such developments could include: improving access to the sites; constructing parking areas for cars, buses, and RVs; developing trails around the sites; installing interpretive wayside signs and markers; and providing informational pamphlets that describe the historic events. These developments have the potential to impact cultural resources on the properties. The following is a general discussion of such impacts, which should be considered in subsequent NEPA documentation regarding these developments.

Construction activities, particularly ground-disturbing activities, associated with future NPS developments have the potential to adversely affect or damage cultural resources on the Corinth Unit sites. Prior to beginning ground-disturbing activities at any of the sites, the NPS would coordinate and consult with the State SHPO to ensure compliance with Section 106 of the NHPA. To avoid impacts on cultural resources, an archaeological survey would proceed construction and a qualified archaeological monitor, as required, would be present during initial grading activities in the event of unanticipated discoveries of cultural materials.

Development of trails would allow for more visitors to fully walk the sites and to access the historic resources on the sites. Increased site access and visitation on the sites may increase the potential for adverse human impacts, such as vandalism or looting, on cultural resources on the sites. However, NPS law enforcement and facility maintenance would be undertaken to protect and preserve site conditions, thus reducing the potential for these adverse human impacts.

The installation of interpretive wayside signs and markers would enhance public understanding and knowledge of the importance of the resources present at each of the sites. This enhanced public understanding and awareness may aid in long-term protection of these resources.

4.3.2.2 Conclusion

NPS management of 11 of the 18 eligible Corinth Unit sites under Alternative B would have long-term, moderate to major, beneficial impacts on the cultural resources. Active protection and preservation measures would be undertaken under NPS management to reduce or prevent any threats to the resources on these properties, including human impacts associated with increased visitation. These beneficial impacts would not occur on the other 7 Corinth Unit sites, since these sites would remain under private ownership under Alternative B. These resources would likely diminish somewhat over time without active preservation and protection and as a result of increased visitation or development pressure, resulting in a long-term, minor to moderate, adverse impact on cultural resources.

Beneficial impacts would also result from increased public and visitor understanding and knowledge of the significance of cultural resources, potentially providing increased long-term protection of these resources. While adverse impacts on cultural resources may result from developments or uses of adjacent lands, NPS would take an active role in monitoring and evaluating these potential impacts, and would work with adjacent landowners to ensure compatible uses of their lands.

The implementation of Alternative B would not significantly impact, and thus not impair, cultural resources or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.3.3 Visitor Use and Experience

Under Alternative B, all sites associated with the Siege and Battle of Corinth that are determined to be eligible for inclusion into the national park system would be added to the Corinth Unit of Shiloh NMP. However, only 11 of the 18 sites would be managed by the NPS under Alternative B. The NPS would allow and encourage visitation at each of the sites under NPS management, and would provide for both on- and off-site interpretation of these sites. The remaining 7 eligible Corinth Unit sites would remain under current ownership and management under Alternative B. These landowners may or may not allow public visitation to the resources on these properties. However, remote visitor experience and interpretation of these sites would be provided by the NPS, regardless of whether visitation is allowed on the actual property.

Most, if not all of the people that would visit the NPS-managed Corinth Unit sites are expected to visit the new interpretive center at Battery Robinett. The total number of visitors to each individual site would most likely be less than the total number to the interpretive center, since the center is the key tourist draw in the area. However, an increased number of visitors to the region

would be expected under Alternative B due to NPS management of some eligible Corinth Unit sites.

Although it is not possible to accurately forecast visitation, it is possible to get a rough estimate of potential visitation. Annual visitation to the new Corinth Interpretive Center is expected to range from 150,000 to 250,000 visitors. The basis of this estimate is that the Corinth Interpretive Center is expected to receive more local visitors than the Shiloh NMP Visitor Center since the population within 5 miles of the Center is 10 times that around Shiloh's Visitor Center, and since the Corinth Interpretive Center is located at the intersection of 2 major roads. Approximately 350,000 people per year currently visit Shiloh NMP, and approximately 150,000 people visit the Shiloh Visitor Center annually. If the NPS markets the new Corinth Interpretive Center as the initial contact point for Shiloh NMP, most of the dedicated Shiloh traffic would also likely include Corinth in their visit (Harrell, 2003).

Due to NPS management of 11 of the 18 eligible Corinth Unit sites, the historical integrity of the existing earthworks would be preserved and interpreted in greater depth. Visitors would be able to follow the movements of troops on the fields with diagrams and informational brochures and through paths on the battlefields or at the fortifications. Ranger tours might also be provided. Currently, understanding of the specific battles and troop maneuvers is limited to a few wayside markers, primarily at the parking areas of the sites, and to the brief descriptions provided in the Corinth Campaign Driving Tour brochure. Some knowledge of the importance of these sites will be provided at the new Civil War Interpretive Center at Battery Robinett. The impacts on visitor use and experience of adding some or all of these sites to the Corinth Unit would be long-term, moderate to major in intensity, and beneficial.

Although visitation to the 7 Corinth Unit sites that would not be managed by the NPS may be limited or restricted entirely, the NPS would still develop and provide informational brochures and other interpretive programs for these sites that would allow for remote visitor experience and understanding of the importance of these sites. Public visitation would be allowed on the 11 sites managed by the NPS under Alternative B, and important linkages to privately owned sites would still be provided.

School groups could benefit tremendously from the expansion of interpretation at these sites, and from the educational experience that would be provided. A Park ranger might even guide a group along paths through the woods to some of the fortifications to discuss military strategy and the importance of land morphology.

However, the additional marketing of the sites by the NPS could lead to congestion at individual sites, particularly if one or more large tour buses are stopped at one time at a site. Many of the sites are far enough apart that it would not be convenient for a visitor to view an alternate site during congested times. This could cause a long-term, localized, minor to moderate, adverse impact on visitor use and experience.

The management of some Corinth Unit sites by the NPS should help to prevent further impairment of the historic integrity of earthworks and fortifications, and could improve their long-term viability. This would happen as a result of an increase in available funding to preserve

the sites, additional site work and preservation measures that might be undertaken, and increased law enforcement against vandalism and ORV use. Improvement of the quality of the existing visitor experience would be enhanced and maintained at each of the NPS-managed sites, resulting in a localized, long-term, beneficial impact on visitor use and experience. The intensity of the impact could vary from minor to major, given the threat to some of the resources if left in the current unprotected condition.

However, these beneficial impacts would not occur on the other 7 sites eligible for inclusion in the Corinth Unit, since these sites would remain under private ownership under Alternative B. There would be the potential for both natural and human-imposed degradation or deterioration at these sites over the long-term. These resources would likely diminish somewhat over time without active preservation and protection, resulting in a long-term, minor to moderate, adverse impact on visitor use and experience. Without adequate protection and preservation, these sites could be lost over the long-term.

4.3.3.1 Connected Actions and Cumulative Impacts

Implementation of Alternative B, along with the other heritage tourism and recreation developments occurring in the area (see Section 4.1.3 of this EA), would have a beneficial cumulative impact on visitor use and experience. Whether tourists first visit the sites included in the Corinth Unit of Shiloh NMP or other sites in the Corinth area, it is likely that visitors would gain an increased knowledge and understanding of the historical significance of the area, in the larger context of the nation's history.

Visitor use and experience could be further enhanced by circulation, access, and streetscape improvements studied in the *Corinth Downtown and Connecting Corridors Action Plan* (Alliance et al., 2003) described in Section 4.1.3 of this EA. This study addresses some of the circulation and access problems that might be encountered at some of the Corinth Unit sites due to increased visitation, particularly at the sites in the downtown Corinth area. In addition, the study provides recommendations to enhance the aesthetics of streetscapes and corridors to benefit visitor use and experience.

Overall, the cumulative effects on visitor use and experience associated with Alternative B should be long-term, regional, moderate in intensity, and beneficial.

<u>Consideration of Impacts From Potential Future Developments</u>

As discussed in Section 4.1.3 of this EA, if Alternative B is selected as the action to be taken, the NPS would likely undertake developments at each of the Corinth Unit properties managed by the NPS to enhance visitor experience. Such developments could include: improving access to the sites; constructing parking areas for cars, buses, and RVs; developing trails around the sites; installing interpretive wayside signs and markers; and providing informational pamphlets that describe the historic events. These developments have the potential to impact visitor use and experience over the short- and long-term. The following is a general discussion of such impacts, which should be considered in subsequent NEPA documentation regarding these developments.

Construction activities, such as the construction of parking areas and trails, may result in temporary, localized, adverse impacts on visitor use and experience at the site under construction. Access to the sites may temporarily be restricted, preventing visitation to the site. In addition, the noise and visual impacts resulting from construction, as well as the presence of construction workers in the area, would temporarily degrade visitor experience at a site, and potentially lead to a temporary, major reduction in the number of visitors to a site.

While there would be temporary adverse impacts on visitor use and experiences resulting from construction, long-term impacts on visitor use and experience would be beneficial. All potential future developments would enhance long-term visitor use and experience at the sites. Improved access and increased parking at the sites would likely lead to an increase in the number of visitors at each site. Trails would also improve access to the earthworks and other site features. Installation of interpretive signs and markers, and the provision of informational pamphlets, would allow for a more educational and interpretive experience at sites in the Unit.

Improved access to the sites may also result in adverse impacts on visitor use and experience. Congestion at some or all of the sites may occur, since people would more easily be able to access the sites, and additional parking areas would allow more people to visit sites at the same time.

4.3.3.2 Conclusion

The impacts on visitor use and experience resulting from the addition of all eligible sites to the Corinth Unit, and NPS management of 11 of the 18 sites, would be long-term, regional, moderate to major in intensity, and beneficial. An increased number of visitors to the region would be expected under Alternative B. However, the additional marketing of the sites by the NPS could lead to congestion at individual sites. This could cause a long-term, localized, minor to moderate, adverse impact on visitor use and experience.

The management of 11 of the 18 eligible sites by the NPS should help to prevent further impairment of the historic integrity of earthworks and fortifications at these sites, and could improve their long-term viability. Improvement of the quality of the existing visitor experience would be enhanced and maintained at each of the sites under NPS management, resulting in a localized, long-term, beneficial impact on visitor use and experience. However, these beneficial impacts would not occur on the other 7 sites eligible for inclusion in the Corinth Unit, since these sites would remain under private ownership under Alternative B. These resources would likely diminish somewhat over time without active preservation and protection, resulting in a long-term, minor to moderate, adverse impact on visitor use and experience. Without adequate protection and preservation, these sites could be lost over the long-term.

The implementation of Alternative B would not significantly impact, and thus not impair, opportunities for visitor use and experience or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.3.4 Socioeconomic Environment

Population, Economy, and Social Conditions

There are not expected to be any changes in the resident population of the area due to the inclusion of all eligible sites into the Corinth Unit and management of some Corinth Unit properties by the NPS. The number of new jobs that could be created by additional driving tours through the Corinth Unit sites is expected to be negligible, and could be filled by members of the local labor force.

Economic Effects

Direct Effects: Economic impacts of the initial purchase of a final product.

Indirect Effects: Changes in inter-industry purchases as a result of initial purchase of a final product.

Induced Effects: Economic impacts due to changes in spending by households due to income changes from changes in the production of goods and services.

Economic impact analysis estimates the impact of dollars being spent in the community from outside the region ("new dollars"). New money can be used to pay wages to local workers and to purchase goods from local businesses. When an industry produces a good or service, it pays wages and benefits to workers and it pays to purchase inputs from its supplier industries. These wages, benefits, and input prices are the ***direct effects*** of the new money. When the supplier industries, in turn, increase their production to meet demand, the wages and benefits they pay their workers, and the price they pay for their input goods and services, are the ***indirect effects*** of the new money. When the workers from both these businesses, in turn, spend their wages to buy food, go to movies, purchase a car, etc., the results are ***induced effects*** of the new money. Adding the effect categories together, one can estimate the ***total economic effect*** of new money on a local economy. The economic impact of the new spending is a function of the diversity of the regional economy, and how much is imported.

What is the Consumer Price Index (CPI)?

The CPI is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. It is published monthly by the Bureau of Labor Statistics (BLS), U.S. Department of Labor. The CPI is calculated for the nation, by region, and for some urban areas. For more information, visit: http://www.bls.gov/cpi/cpifaq.htm.

All figures in the following section are adjusted to 2001 values using the CPI.

With the addition of all 18 eligible sites into the Corinth Unit and NPS management of 11 of these sites, visitors are more likely to stay overnight in the Corinth area than they are with just the inclusion of the Battery Robinett site under Alternative A. A New Jersey driving tour study defines two types of visitors to a given area. 'Excursionists' are defined as those visitors that stay less than 24 hours in the destination visited, while 'tourists' are visitors staying at least 24 hours in the destination visited (UMTRI, 1996). Under Alternative B, excursionists are more likely to become tourists. The New Jersey driving tour study found that for both types of visitors, approximately 32 percent of visitor spending was spent on lodging, 40 percent was spent on food and beverage, 17.5 percent was spent on retail, 5.5 percent was spent on vehicle-

related expenditures, and 5.5 percent was spent on sightseeing and recreational activities (UMTRI, 1996).

Increased visitation in the area due to the addition of all eligible sites into the Corinth Unit and NPS management of 11 of the sites could produce economic benefits. These benefits derive from tourist spending in sectors that have high capture rates (see text box) by local businesses (e.g., food and beverage, lodging, and recreation services). A study conducted by the Preservation Alliance of Virginia on the economic benefits of heritage tourist spending indicates that, in Virginia, historic preservation visitors tend to stay longer in an area, visit twice as many places in an area, and spend, on average, over 2.5 times more money than other visitors (PAVA, 1996). The best estimate of expenditures per person, using currently available information, is a survey of the approximately 70,000 annual visitors to the Alcorn County Welcome Center. Approximately 15 percent stayed overnight at a hotel in Corinth. The average per person per day expenditure in the 1999 to 2000 timeframe was $50.01 per person per day (CAPTC, 2001). A 1997 study of visitors to a Civil War Driving Tour in the State of Virginia found average spending per person per day of $73.26, versus $46.62 for all leisure travelers (Bowman, 2001). A New Jersey study of heritage travelers conducted from 1993 to 1995 found that primary heritage overnight visitors actually spent less per night than partial heritage visitors and all New Jersey visitors, $37.20 versus $64.46 and $65.06, respectively. This was attributed to the fact that primary heritage visitors tend to stay for shorter periods of time than partial heritage visitors (NJHT, 1997). Thus, they spend less on high local value-added services in the lodging and food and beverage sectors. This finding would lend support to higher economic benefits resulting from Alternatives C and D than from Alternative A or B.

What is a Capture Rate?

When you purchase an item some of the price goes to the producer of the good. For instance, when you purchase a car, some of the price you pay, say 60%, is returned to the assembly plant, which is usually located in a different state or country. Some of the price you pay, say 30%, becomes corporate revenue and is held in out-of-state or offshore banks and securities. The remaining portion, say 10%, is the local car dealer's revenue. This 10% is used to buy office supplies, pay employees, pay a local accountant, etc., and is known as the local economic capture rate.

Lodging, food and beverage, and recreation fees tend to have high capture rates; these businesses are labor intensive and many of the supplies are locally purchased.

Expansion of the Corinth Unit would most likely increase the length of time visitors spend touring in the region, and the amount spent on retail, food and beverage, recreation, sightseeing, and sales tax. The driving tour of the sites might even prompt visitors to spend an additional night in Corinth. If a visitor put in a full day visiting Shiloh NMP and the new interpretive center at Battery Robinett, he or she might stay overnight to take the Corinth Campaign Driving Tour and tour some of the other Civil War sites in northeastern Mississippi and southwestern Tennessee.

Hence, inclusion of all eligible sites into the Corinth Unit and management of most of the sites by the NPS is likely to increase the probability that a visitor would stay in the Corinth area at least for an additional half or full day. This would create positive economic impacts through an

increase in the local lodging and food service sales tax collections, and the possible expansion, at a future date, of the capacity of the hospitality industry (i.e., construction of new hotels and restaurants). The magnitude of the potential growth is unknown at this time. The potential beneficial impact should be regional, long-term, and minor to moderate in intensity.

Another potential economic impact from the management of 11 Corinth Unit sites by the NPS is the creation of approximately 8 additional full-time equivalent (FTE) positions with the NPS. About 60 percent of the new hires are expected to be local residents, meaning that, at most, 5 new jobs would be created. Most of the new jobs should pay in the $35,000 to $47,000 salary range (Allen, 2001a). This beneficial impact should be long-term, regional, and have a negligible impact on total employment.

The addition of 11 eligible Corinth Unit sites under management of the NPS would add approximately $300,000 annually to Shiloh NMP's existing budget, over and above that added by the operation of the new interpretive center at Battery Robinett (Allen, 2001b). Using the 8 jobs that are forecast to be created by NPS management of 11 of the Corinth Unit sites, and an average wage of $41,000, all of the budget increase would be spent on wages. Assuming that all of these new employees live in the region and that disposable income is 85 percent of wages, there would be some positive economic impacts associated with the spending of these wages in the economy. However, since only 3 of the 8 jobs would be filled by people from outside of the local labor force, the increase in local purchases would be minor. The people who already work in the area spend their money there and would be doing the same whether they work for the NPS or another employer. Only if there were a low unemployment rate for the local area would there be a net new creation of jobs and injection of wages into the local economy.

There is strong community support for the construction of the new Corinth Civil War Interpretive Center, designation of the Corinth Unit, and NPS management of the Corinth Unit sites. This is evidenced by the support of the SBCC, FSBC, local government leaders, and the Congressional delegation for passing legislation creating the Park (P.L. 104-333 and P.L. 106-271). Additional evidence is provided by the *Historic Preservation and Tourism Action Agenda* published by the regional TAPP (2000). During the December 2001 scoping meeting for the project (see Appendix D of this EA), public reaction was universally in favor of the project, particularly of Alternative C. While a general consensus in support of the sites was expressed at the meeting, there was also some discussion of other sites not currently considered for inclusion.

While community support for the project is strong, an increase in the number of tourists to the area could have adverse social impacts on the community. Doxey's index of irritation, which represents changing attitudes of a host community, is based on a linear sequence of increasing host irritation as the number of tourists in the area grows. In the presence of tourist development, hosts pass through stages of euphoria, apathy, irritation, antagonism, and loss. How this sequence progresses is determined by how compatible tourists and hosts are in terms of culture, economic status, race, and nationality, and how many tourists are present in the community (Molnar et al., 1996). Having so many non-residents visiting the community could cause minor annoyances to local residents and they may resent the intrusion. This is particularly true because some of the sites being considered for inclusion into the Corinth Unit are located in rural and/or residential areas. For instance, the Boxe House Battery is located on a cul-de-sac

with five to six homes. Buses and carloads of people driving down this dead-end street could lead to a loss of quiet and solitude for these residents. Another instance is Battery F, located in a suburban residential area. These impacts could be partially mitigated through the purchase of properties in the immediate area surrounding NPS-managed sites that would be negatively impacted by the increased traffic and noise. However, the NPS would not have any management control over those sites that would remain under existing management under Alternative B, including the Boxe House Battery site, or visitation at those sites. Therefore, there would be the potential for a long-term, minor to moderate, adverse social impact from increased visitation to non-NPS managed sites. The intensity of this impact would largely depend on the number of visitors to each of the sites and the land uses adjacent to the sites (e.g., residential).

In addition, an increase in visitors to the potential Corinth Unit sites could hypothetically increase the probability of site vandalism. Problems with vandalism were evident during a recent site visit to the Union Army of the Tennessee, Nelson's May 17th line. In addition, the location of sites so close to residential areas could create conditions unfavorable to tourists. For example, during a recent site visit to the Davis Bridge/Battle of the Hatchie River site, dogs from an adjacent private residence chased the vehicle, and barked during the visit's duration. These social impacts are expected to be localized, long-term, and minor to moderate in intensity. These impacts, particularly incidences of vandalism, would be reduced by an increased presence of NPS personnel on the sites. In accordance with the Strategic Plan for Shiloh NMP, law enforcement and facility maintenance would be undertaken to protect and preserve site conditions on the sites managed by the NPS (NPS, 1999a). However, under Alternative B, the NPS would only be responsible for law enforcement on those 11 sites under NPS management. The NPS would not have any control over management or law enforcement at the other 7 sites that would be included in the Corinth Unit but would remain under existing management. Another measure that could decrease adverse social impacts at and around sites managed by the NPS would be the purchase of adjacent properties on a willing-seller basis to create a buffer around the main visitor's area.

Figure 4.3.4-1. Site Vandalism Evidenced During Site Visit

School groups should benefit tremendously from the addition of all eligible sites to the Corinth Unit and the management of some sites by the NPS. Students would gain knowledge of their local history, as well as being able to see, first-hand, the strategic points along siege lines. A Park ranger might even guide a group along paths through the woods to some of the fortifications to discuss military strategy and the importance of land morphology. As a result of the visits, children might also gain appreciation for some earthworks they discover in their own backyards,

while playing in the woods and fields. This beneficial impact should be long-term, regional, and minor.

Transportation

The driving routes that would be used to access the Corinth Unit sites are not yet definitively known (Allen, 2002). In the interim, visitors would be directed to use "A Guide to the Corinth Campaigns of 1862" map published by the SBCC for the Corinth Campaign Driving Tour (SBCC, 1998). This map shows tour stops on five different military campaigns. Geographically, the stops can be divided into four areas: Shiloh, downtown Corinth, City of Corinth (outlying), and Davis Bridge. Shiloh includes Shiloh NMP and the Fallen Timbers site. Davis Bridge includes the Davis Bridge Battlefield/Metamora Hill site. Downtown Corinth includes Battery Robinett (and the new interpretive center located on the site), Battery F, Corona College, and the Contraband Camp. The City of Corinth (outlying) area includes all of the remaining sites. The sites within each area can be visited by driving in more or less of a loop. The exception is Camp Davies, which is south of the other sites, and would only be on the way if someone were traveling to visit Jacinto or Brices Crossroads.

The number of people estimated to visit the new Corinth Civil War Interpretive Center at Battery Robinett each year, as discussed above, is estimated to be 150,000 to 250,000 people. For the purposes of this analysis, the new interpretive center is assumed to already have been constructed and in operational phase. Therefore, the increase in traffic associated with visitation to the interpretive center is part of the existing traffic conditions in the area of Corinth. Most of the people projected to visit the new interpretive center are already expected to be visiting Shiloh NMP; therefore, the projected number of visitors to the center would not equate to a proportionate increase in traffic/number of vehicles on area roadways. Rather, the number of vehicles on area roadways would not be expected to deviate much from existing conditions, assuming the new interpretive center is already in operation.

Under Alternative B, many of the visitors to the interpretive center would be expected to also visit the sites within the Corinth Unit of Shiloh NMP. At a minimum, visitors would likely detour off Shiloh Road/MS State Route 2 and onto the side streets to visit sites within Corinth, including the 1862 Beauregard Line, Davies' May 19th Line, McKean's May 19th Line, Davies' May 21st Line, and Davies' May 28th Line. Like the Battery Robinett/Interpretive Center site, these sites are also located off Shiloh Road/MS State Route 2. It is not possible at this time to project how many people would visit the Corinth Unit sites under this alternative, how many of the sites they would visit, in which order they would visit the sites, and on which roads they would travel to reach the sites. It is expected that the greatest visitation and increase in traffic would occur on the roads within downtown Corinth and the roads leading to the Davis Bridge Battlefield.

Visitors to the sites in downtown Corinth are likely to combine their visit to the Corinth Unit sites with some of the other contributing resources in the area, such as the Veranda House and railroad crossing. These two contributing sites are already likely to have become attractions to visitors of the new interpretive center that tour the downtown area. The primary increase in traffic would be to the Battery F, Corona College, and Contraband Camp sites. Battery F and the

Contraband Camp are in rather dense residential areas, where the typical home is on one-half to one acre lots. Traffic could increase substantially on these local and residential streets over the long-term.

The recommended driving route to from the City of Corinth to the Davis Bridge Battlefield site would follow U.S. Highway 45 north to State Route 57 in Tennessee (Allen, 2002). There is a turnoff onto Pocahontas Road near the Davis Bridge site. From Shiloh, visitors could travel on TN State Route 57 farther east, cross Highway 45, and follow the directions as from Corinth.

Although visitors would be given the option to drive the 'historic' route taken by Van Dorn's army during the Hatchie River Campaign, this route would not be recommended, especially during rainy weather. The historic route follows County Road 700 in Mississippi to the Tennessee line, where the road becomes TN State Route 234. There is a turnoff onto Butler Chapel Road, a County road, which turns into Wolf Pen Road. These two roads are prone to flooding by the Tuscumbia and Hatchie Rivers. They are also quite hilly and have many curves. An increase in traffic on this road could lead to accidents, particularly since there is no established speed limit on the road.

Under Alternative B, inclusion of all eligible sites within the Corinth Unit, management of some sites by the NPS, and subsequent increases in visitation to the sites, could lead to the following potentially adverse impacts on the transportation system:

- Increased number of vehicles turning onto main roads from side streets and from side streets onto main roads;
- Delays and queuing on roads, particularly on a spring or fall weekend;
- Congestion caused by cars backing up on side streets in front of residences, making it more difficult for people to enter and exit their driveways;
- Increased risk of injury to children and animals due to the increased number of cars on side streets and in residential areas. This risk may be particularly high in the Tennessee portions of the affected area, where there are no speed limits on the back roads;
- Limited or insufficient turnaround radii for buses and RVs, due to narrow road width;
- Increased wear and tear on roads; and
- Increased accident incidence, particularly on the historic route to Davis Bridge.

The duration of these impacts are expected to be long-term. The intensity of the impacts could range from minor to potentially major, particularly those involving risk of injury and an increase in accident incidence. These problems would be exacerbated by the fact that there would be many people driving the local roads who are unfamiliar with the terrain and local traffic patterns. The intensity of these impacts at the local level is expected to be greater than at a regional level.

To help reduce these adverse impacts on these roads, the NPS would work with local highway districts to protect public safety, particularly along the 'historic' route to the Davis Bridge Battlefield site. Measures may include: additional signage; establishment of speed limits, especially around curves; and seasonal restrictions, particularly for buses and RVs, to reduce risks of accidents and threats from road flooding.

The CATPC, The Alliance, and the TAPP have acknowledged that traffic congestion and downtown parking concerns in Corinth are priorities that should be addressed immediately in order to facilitate heritage tourism development. The *Historic Preservation and Tourism Action Agenda for Corinth and Alcorn County, Mississippi*, published in October 2000, identified a transportation study as a priority (TAPP, 2000). The Alliance, CATPC, Main Street Corinth, Alcorn Board of Supervisors, and the City of Corinth sponsored the preparation of a *Corinth Downtown and Connecting Corridors Action Plan*, which features an area traffic study and streetscape improvement plan for downtown Corinth and gateway corridors (Alliance et al., 2003). This study was completed in January 2003. There are several foci for the study, including:

1) Traffic impacts associated with the new interpretive center and tourist circulation throughout the Corinth area;
2) Tourist parking in downtown Corinth;
3) Signage and wayfinding;
4) Aesthetics and use of downtown areas; and
5) Streetscape improvements to the gateway corridors (Alliance et al., 2003).

The Action Plan analyzes existing infrastructure conditions within and around downtown Corinth, and provides specific recommendations to improve traffic (car, bus, and RV) circulation, increase parking availability, and improve streetscapes and travel corridors, taking into account predicted increases in annual visitation from the operation of the new Civil War Interpretive Center. Aside from technical improvements to the streets and sidewalks for public safety, visibility, and ADA compliance, there are additional improvements proposed in the Action Plan that address the aesthetic character of a street or district, wayfinding devices, and pedestrian amenities (Alliance et al., 2003). Any recommendations within the traffic study would have to receive funding before they could be implemented. However, funding has not yet been secured.

Although this study was not intended to address parking, access, and traffic problems created by increased visitation to the potential Corinth Unit sites, by addressing traffic and parking issues in downtown Corinth, associated issues stemming from visitation to Corinth Unit sites in downtown Corinth inadvertently are addressed. If the recommendations provided within the Action Plan are implemented, any adverse impacts on transportation associated with increased visitation to the Corinth Unit sites located within the City of Corinth would be greatly reduced. However, traffic and road conditions on roads outside of the downtown Corinth area are not addressed in the study.

As a result of increased visitation and associated road use, some streets in the vicinity of the potential Corinth Unit sites may need to be upgraded. The Mississippi Department of Transportation (MDOT), Office of State Aid Road Construction, assists counties and municipalities in the construction and maintenance of principal collector and distributor roads that are not State-owned roads. Routine maintenance is paid for by the municipality. Funding under the State Aid Program is not an entitlement. State aid roads include most collector and arterial streets in the City of Corinth, Wenasoga Road, portions of MS State Route 2, and County

Road 200 (Farmington Road) in Alcorn County (Lancaster, 2002). If these roads become congested due to visitor traffic to the potential Corinth Unit sites, they would be eligible for additional funding. There is no guarantee, however, that this funding would be provided.

Land Use

The whole idea behind a national historic park is to preserve the landscape and maintain its historic integrity. Short- and long-term land use on the potential Corinth Unit sites is not likely to change much from existing uses after establishment of the Corinth Unit boundary, with the exception of some minor future site improvements on sites to be managed by the NPS under Alternative B, such as walking trails, parking lots, and bus turnarounds. The land use types would range from passive to low-density outdoor recreation. Currently, the uses are passive outdoor recreation.

Passive Recreation: Passive recreation refers to non-consumptive activities, such as wildlife watching, hiking, walking, biking, and canoeing. On-site facilities are non-existent or minimal. There is little interaction with other persons.

Low Density Recreation: Low-density recreation refers to recreational activities requiring a minimal level of facilities. These may include parking lots, restrooms, and interpretive signage. Some interaction with other persons occurs.

The boundaries of the Park should be established to promote preservation of the existing rural landscape at most sites, and to limit commercial encroachment at some of the more urban sites in and around Corinth. By acquiring additional land when it becomes available within the boundaries, the NPS could preserve the integrity of the sites. Any land use changes within the Park boundaries would most likely occur from development activities of private landowners within the boundaries. The potential exists, over the long-term, for the development of incompatible commercial uses adjacent to NPS-owned sites, particularly in the areas that are not zoned. This could adversely impact Park resources near those adjacent lands. In addition, under Alternative B, seven of the eligible Corinth Unit sites would remain under existing ownership patterns and would not be managed by the NPS. There is the potential that private landowners of these sites could develop their properties in the future. Such development would likely change the land use classification of those sites.

In accordance with NPS *Management Policies 2001*, the Park superintendent would monitor land use proposals and changes to adjacent lands, and the potential impacts that such changes may have on Park resources or values. Compatible adjacent land uses would be encouraged. In addition, a land protection plan should be developed for lands within the Corinth Unit to document which lands need to be in public ownership to carry out Park purposes. This plan would guide the Park's land acquisition priorities, with consideration given to the relationship between the Park and adjacent land uses and threats that those land uses may have on Park resources (NPS, 2000e). Implementation of these management policies would reduce potential adverse impacts on the Park resulting from land use changes or incompatible land uses within or adjacent to Park boundaries.

Land Ownership

Extending the Corinth Unit beyond the Battery Robinett site to include all eligible sites, and management of 11 of those sites by the NPS, could have a potentially major impact on land ownership, and by extension, a jurisdiction's tax base. Property taxes are generally levied at the county and city level. Land owned by the Federal Government and managed by the NPS is tax exempt, and payments in lieu of taxes (PILT) are made (see text box). Under Alternative B, the NPS would acquire and managed land at 11 of the 18 Corinth Unit sites and would make PILT payments to the local government for these lands.

Payments In Lieu Of Taxes: Payments to local governments containing federally owned lands. Recognizing the inability of local governments to collect property taxes on federally-owned land, Congress enacted the Payment in Lieu of Taxes Act (Public Law 94-565) in 1976. The Act provides for payments to local governments containing certain federally-owned lands. Local governments, usually counties, that provide services such as public safety, environment, housing, social services and transportation and have non-taxed federal land within their jurisdiction are eligible for payments. Payments are made directly to the counties unless the state government concerned chooses to receive the payments and, in turn, pass the money on to other smaller governmental units such as a township or city.

In the long-term, depending on actual visitation levels and associated traffic, the highest and best use of residential parcels near the potential Corinth Unit sites could change to commercial. Above a certain threshold, increases in daily traffic counts might cause residential property values to decrease. At a still higher threshold, the property might be worth more for commercial development. It is difficult to project what the impact of visitation and development would be on individual sites, and how these impacts would interact with other economic forces affecting property use and value.

Given the uncertainty of the direction of land value, a conservative finding is that there could be a short-term, localized, minor to moderate, adverse impact on land values in the areas around the potential Corinth Unit sites. If the areas are rezoned, there could be a long-term, localized, moderate to major, beneficial impact on property values. Since rezoning is not a reasonably foreseeable event, given the uncertainty as to traffic and visitation levels, this potential long-term impact does not offset the short-term impact.

Utilities and Public Services

Under Alternative B, the NPS would undertake management of 11 of the 18 sites considered eligible for inclusion into the Corinth Unit. Management of these properties would not involve any activities that would have the potential to disrupt or damage utility lines in the area. In addition, no additional utility hookups would be necessary as a result of this alternative.

As a result of Alternative B, visitation to each of the Corinth Unit properties would be expected to increase over the current level. Increased visitation may result in an increase in the demand for utilities and public services in the area. As more visitors come to the area and stay overnight, increased use of water, electricity, and gas would be expected for the area. However, this increase would only be expected to have a minor impact on levels of demand in the area, and

should not require any additional utility connections. The increased presence of visitors and traffic in the area would likely result in a proportionate increase in the demand and need for public services, such as law enforcement. Overall, these impacts would be long-term, minor, and regional.

Noise

Under this alternative, the NPS would undertake management of 11 of the 18 sites considered eligible for inclusion into the Corinth Unit. Management activities may involve some activities, such as mowing, that generate noise. However, these activities are likely currently occurring on the properties, and therefore, would not be considered new noise sources as a result of this alternative.

Some of the sites being considered for inclusion into the Corinth Unit are located in rural and/or residential areas. Examples include Boxe House Battery, which is located in on a residential cul-de-sac with five to six homes, and Battery F, which is situated in a suburban residential area. Increased traffic in these areas due to increased visitation and driving tours to the sites as a result of inclusion into the Corinth Unit would increase traffic noise levels in these areas. These traffic noise levels are expected to be somewhat higher on weekends, when visitation is typically higher. Noise associated with increased traffic and visitation to the sites would likely disrupt the peaceful setting typical of rural and residential areas, and may disturb nearby residents. This adverse impact is expected to be long-term, localized due to noise attenuating effects, and minor to moderate in intensity. This impact would be greater at some sites than at others.

At those sites located very close to residential areas or sensitive receptors, certain actions could be taken to minimize noise disturbance caused by increased traffic and visitation to the sites. Properties in the immediate area of the sites that would be adversely impacted by noise could be purchased, thereby creating a buffer around the main visitor's area. In addition, the NPS could plan for site improvements to avoid noise impacts, such as locating parking areas or access roads away from residential areas. Lastly, planting trees along roadways and main visitor areas on some sites may provide a screening effect, thus reducing the noise levels that reach residential areas.

Recreation

Visitation to the region would be expected to increase above that expected under Alternative A due to inclusion of all eligible sites into the Corinth Unit and NPS management of 11 of those sites under Alternative B. Refer to Section 4.3.3, *Visitor Use and Experience*, above for more information on changes in area visitation.

Under Alternative B, all sites associated with the Siege and Battle of Corinth that are determined to be eligible for inclusion into the national park system would be added to the Corinth Unit and 11 of the sites would be managed by the NPS. Visitors would be able to follow the movements of troops on the fields with diagrams and informational brochures, and through paths on the battlefield or at the fortifications. Park ranger tours might also be provided. Walking trails, benches, and selective landscaping would increase access to the sites and allow people to parody

the movements of troops and get some feel for the actual battle. Some knowledge of the importance of the sites would be provided at the new interpretive center at Battery Robinett. The impacts on recreational opportunities resulting from Alternative B would be long-term, moderate to major in intensity, and beneficial. These impacts would accrue to both the City of Corinth and the region.

The addition of the Contraband Camp site, in particular, would vastly expand the diversity of recreational opportunities in the City and region. There are no other African-American heritage sites in the region. The nearest ones, as identified by the Mississippi Department of Tourism's African American Heritage Tour Itinerary, are in Holly Springs and Oxford, Mississippi (MDT, 2001). **Figure 4.3.4-2** shows the current tour configuration. The addition of Corinth to the tour could be integrated on the first leg of the trip. The addition of Corinth would have a long-term, regional, moderate, and beneficial impact on recreation in the region.

Courtesy: MDT, No date

Figure 4.3.4-2. African American Heritage Tour Itinerary

There is very limited information available about the number of people currently taking Civil War-related driving tours. Some annual visitation information for various driving tours is shown in **Table 4.3.4-1**.

Table 4.3.4-1. Annual Visitation Estimates for Various Civil War Driving Tours

Tour Name	State	Annual No. of Visitors
Tullahoma Campaign Driving Tour[1]	Tennessee	13,000+
Battle of Hartsville Driving Tour[1]	Tennessee	3,000+
Tennessee Civil War Railroad Driving Tour[1]	Tennessee	50,000
Ride of Lee's Retreat[2]	Virginia	16,500
Richmond National Battlefield Park[3]	Virginia	90,422

Sources: [1] TNVS, 2000; [2] Bowman, 2001; [3] NPS, 2000a

Due to the limited amount of information available, it is difficult to predict the number of people that would be anticipated to partake in the Corinth Campaign Driving Tour each year under Alternative B. However, the number is likely to fall in the range of 3,000 people (the low end figure in **Table 4.3.4-1**) and 150,000+ people (the number of visitors projected to visit the new interpretive center at Battery Robinett). The Lee's Retreat tour is a good comparison because it is located in the rural eastern part of Tennessee, an area characteristic of the Corinth Campaign Driving Tour. Approximately 600 people stop at the waysides along this tour each month (Rugh and Andrus, 1997). Regardless, the addition of all eligible sites to the Corinth Unit would

increase recreational opportunities in the area and increase the number of people taking the Corinth Campaign Driving Tour above the current level.

Human Health and Safety

Under this alternative, the NPS would undertake management of 11 of the 18 sites considered eligible for inclusion into the Corinth Unit. Management of these sites would not involve any activities that would pose risks to the health or safety of the public. On the contrary, beneficial impacts on human health and safety would be expected to result from this alternative.

According to the Strategic Plan for Shiloh NMP, the NPS and the Park's Safety Committee undertake active measures to identify hazards and reduce risks to the public on NPS-managed lands. Ranger staffing levels would be increased to allow for more visibility and to provide increased resource monitoring to identify and correct hazardous conditions on NPS lands (NPS, 1999a). These measures would only be applied to those Corinth Unit properties to be managed by they NPS under Alternative B. A long-term, localized, beneficial impact on human health and safety at these sites is anticipated to result from this alternative.

As a result of Alternative B, visitation to each of the Corinth Unit properties would be expected to increase over current levels. Increased visitation may result in an increase in the number of accidents/ incidents occurring at the sites or in the region. However, this increase would not be the result of the management alternative; rather, it would be a natural and proportionate increase due to the increased amount of people in the area. According to NPS *Management Policies 2001*, the Park superintendent would develop and implement a program of emergency preparedness to ensure an effective response to all reasonably foreseeable types of emergency situations on NPS-managed lands. As part of the program, a systematic method for alerting visitors about potential disasters and evacuation procedures would be included. The NPS would also maintain an emergency medical services program to provide appropriate emergency medical services to persons who become ill or injured while on NPS lands. This program would include provision of transportation for persons who become sick or injured, as well as emergency pre-hospital care, ranging from first aid to advanced life support, if necessary (NPS, 2000e). Thus, NPS management of some eligible Corinth Unit sites under Alternative B would result in a long-term, moderate, localized, beneficial impact on public health and safety.

While visitation would be allowed on those 11 properties to be managed by the NPS under Alternative B, it would be up to the existing landowners whether or not to allow visitation on the other 7 Corinth Unit properties. The NPS would promote knowledge and understanding of these other 7 properties, if even only remotely through brochures and programs at the new Corinth Interpretive Center, which would increase the potential for visitation at these sites. This visitation may be limited to visitors driving by the sites, or stopping along roadways adjacent to the sites to view the sites' resources. Since the NPS would not have management authority over these 7 other Corinth Unit sites, the NPS would not be responsible for providing emergency response or hazard identification at the sites. Lack of such protection could result in long-term, minor to moderate, adverse impacts on human health and safety at these other 7 sites.

Waste Management

Under this alternative, the NPS would undertake management of 11 of the 18 sites considered eligible for inclusion into the Corinth Unit. As such, waste management on these properties would become the responsibility of the NPS. According to NPS *Management Policies 2001*, the NPS would implement solid and hazardous waste management practices on lands they manage, which are designed to reduce, reuse, and recycle wastes with the intent of minimizing the generation and disposal of these wastes at and from the Park (NPS, 2000e). Implementing these practices would have a long-term, localized, minor to moderate, beneficial impact on waste management.

A somewhat higher level of visitation would be anticipated under this alternative at Corinth Unit sites. Increased visitation may lead to an increase in the amount of solid waste generated at the sites and in the region, although this increase is expected to be negligible. Existing facilities in the region have sufficient capacity to handle any additional solid waste generated at these sites. In addition, approved solid waste management practices would be followed at all times.

NPS management practices would not involve the use of any hazardous materials. Therefore, no hazardous waste would be generated as a result of this alternative, and no impacts associated with hazardous materials/waste would occur.

Visual Resources

Under Alternative B, all eligible sites would be added to the Corinth Unit and 11 of the 18 sites would be managed by the NPS. The impacts on visual resources associated with this change in management and management activities at these sites would be both beneficial and adverse. Under NPS management, it is likely that some vegetation, including trees, would be removed from some of the sites under NPS management for cultural resources protection and enhancement of visitor interpretation. While this would alter the visual quality of these sites, this impact would be minor, localized, and beneficial, since removing vegetation would enhance the resources at and interpretation of the sites.

Under NPS management, no actions would be taken that would impair the visual quality of the site or the site's resources. However, enhancements to NPS-managed properties may be made. In addition, the visual character at some sites may be altered with the development of trails through the sites. However, the trails would allow visitors to more fully view the historical resources present on the sites, resulting in a potential long-term, beneficial impact on visual quality.

Visual quality impacts at those other seven Corinth Unit sites that would not be managed by the NPS under Alternative B could be adverse over the long-term. Since the NPS would not have management authority over these sites, upkeep and resource protection would be the responsibility of the private landowners, who may not have the resources available to them to adequately and continuously maintain the aesthetic character of the sites. Resources on these seven properties would likely diminish over time, resulting in a long-term, adverse impact on the visual quality of the sites. In addition, there is the potential that private landowners could

develop on their properties, damaging or destroying the resources they contain, and permanently altering the visual quality of the affected site. The intensity of these impacts could range from minor to moderate, depending on the level at which these sites are maintained, whether the sites are developed in the future, and what types of developments occur on the sites.

Long-term, localized, adverse impacts on visual quality may result from the increased presence of visitors and associated traffic around some sites, particularly those located in residential neighborhoods. This impact would be expected to be minor to moderate in intensity, and would be more of a social impact than one on visual resources.

Environmental Justice/Protection of Children

Potential adverse impacts resulting from Alternative B that could have the potential to disproportionately affect minority or low-income populations include: increased traffic in primarily low-income or minority neighborhoods as a result of increased visitation under Alternative B, adverse social impacts from increased tourism and visitation, and potential admissions fees. The highest potential for occurrence of disproportionate adverse impacts on low-income or minority populations would be in the City of Corinth, since most of the potential Corinth Unit sites are located there. Within the City, the highest potential for such impacts exists in Census Tract 9505, where at least two of the potential sites are located, and which contains the highest proportion of minorities of all census tracts in Alcorn County. Given the data available, it is not possible to determine whether potential Corinth Unit sites in the City of Corinth are located in neighborhoods that are inhabited primarily by low-income or minority populations. However, the NPS would take measures to avoid any disproportionate adverse traffic or social impacts to these populations. The NPS could plan site improvements, such as parking areas or access roads, to be located away from residential areas. In addition, over time, the NPS could purchase, on a willing-seller basis, properties in the immediate area of the Corinth Unit sites that may experience adverse impacts due to increased visitation. This would create a buffer around the main visitor's area and decrease residential disturbance from increased visitation to the area. Since the NPS would take measures to avoid any disproportionate impact on minority or low-income populations, there is not expected to be an environmental justice impact as a result of this alternative.

Minority populations in the affected areas of McNairy County and in the remaining parts of Alcorn County are not significantly different than the county averages; there is not a significantly greater number of minorities living in those areas than in any other areas of the counties. The affected area in Hardeman County is within the census tract containing significantly fewer minorities than any other area of the County. Given the data available, it is not possible to determine whether potential Corinth Unit sites in these areas are located in neighborhoods that are inhabited primarily by low-income or minority populations. However, as discussed above, the NPS would take measures to avoid any disproportionate adverse impacts on these populations that may result from implementation of Alternative B. In addition, the NPS would not take over management of any of the potential Corinth Unit sites that are located in McNairy or Hardeman County under Alternative B.

There could be a beneficial impact on low-income persons from the expansion of the Corinth Unit and NPS management of the sites. This is because there would probably be no or a low admissions fee at any of the sites, and the Corinth Unit would offer both a recreational and educational experience. This benefit is most likely to be enjoyed within the City of Corinth, where some of the sites might be within walking distance. Most of the other potential Corinth Unit sites would require vehicular transportation to access them. Some minority persons could benefit from interpretation of the Contraband Camp and the sharing of the African-American contribution to the Civil War and Corinth's history.

The management of some of the eligible sites by NPS could have a beneficial impact on area children by providing local educational resources. School trips could be taken to the sites, and interpretive talks and hikes could be given by NPS rangers. These activities are much more likely to happen when the sites are united under one management unit and the sites can be secured by NPS staff.

In order to avoid any adverse health or safety impacts on children as a result of increased traffic associated with increased visitation, residential densities, sidewalk availability, school locations, bus routes, and bus stops would be assessed, and any potential conflicts identified. The NPS would coordinate with City and school district officials to ensure the safety of children and school groups on and around the Corinth Unit sites.

4.3.4.1 Connected Actions and Cumulative Impacts

As discussed in Section 4.1.3 of this EA, there are various heritage tourism and recreation developments occurring in the region, including the development and operation of the new Corinth Civil War Interpretive Center at the Battery Robinett site. All of these developments indicate support for a local initiative to expand recreational opportunities in heritage tourism in the area.

What is Plottage?

Plottage, or assemblage, is a term typically applied to real estate. It is the increment of value that results when two or more sites are combined to produce greater utility (AI, 1996).

For recreation attractions, plottage can be thought of as a concentration of recreational opportunities. For example, the new Corinth Civil War Interpretive Center is like the anchor store in a shopping center, and the sites added to the Corinth Unit are the satellite stores that benefit from shoppers visiting the anchor site.

The primary attraction that would bring visitors to the Corinth area to spend money is expected to be the new interpretive center at Battery Robinett. The other heritage tourism and recreational developments, when combined with the expanded Corinth Unit, would increase the plottage effect (see text box). Expansion of the Corinth Unit, coupled with other projects in the area, is likely to keep people in the area for a longer period of time, spending more money. This economic impact would be long-term, beneficial, and negligible to minor in intensity.

The other heritage tourism and recreational developments, when combined with the expanded Corinth Unit, would also beneficially impact recreation in the region. With more activities to engage in, visitors would have more to do without having to drive long distances. This increase in recreation is expected to be long-term and moderate in intensity.

Since the new interpretive center at Battery Robinett is expected to be the primary attraction that would bring visitors to the Corinth area, it would also be the cause of the biggest traffic increase in the area. Coupled with other heritage tourism and recreational developments, as well as the expansion of the Corinth Unit, traffic increases and parking shortages in the City of Corinth would have a major, adverse impact on transportation. However, as mentioned in Section 4.1.3 of this EA, a *Corinth Downtown and Connecting Corridors Action Plan*, which features a traffic circulations and streetscape improvement study, has been conducted to address traffic congestion and parking in downtown Corinth resulting from increased area visitation (Alliance et al., 2003). While the study and resulting recommendations focus on the traffic impacts associated with the new Corinth Interpretive Center, any improvements made as a result of the study would also help to address similar cumulative transportation-related problems, particularly since the majority of visitors to the Corinth Unit sites and other developments would also likely visit the center. No transportation-related cumulative impacts on roadways used to reach outlying Corinth Unit sites would be expected to occur, since all of the heritage tourism and recreation developments are planned for the City of Corinth.

Cumulative impacts on noise levels, visual quality, and human health and safety would primarily result from increases in area tourists and associated traffic. Although traffic and street improvements would be made to the Corinth area, this would not decrease the level of traffic noise, or the visual impacts related to the presence of visitors. Traffic and street improvements would, however, decrease the potential for adverse impacts on human health and safety due to vehicular accidents and would improve the aesthetics of the affected road corridors.

Aside from the general growth in the Corinth economic base from traditional commercial and industrial activities, there are no other significant land use changes occurring in the immediate region. However, additional heritage tourism projects could potentially impact land use patterns in the region. The extent of this potential impact would be the intensification of existing land uses (i.e., more intense use of existing structures through renovation and marketing). The new Corinth Civil War Interpretive Center is expected to be the primary visitor attraction for Corinth, and would be expected to be the primary reason for any land use changes. It is possible that, over the long-term, there would be an increase in commercial use within the area, as the demand for lodging, food and beverage services, and retail increases. However, the expansion of the Corinth Unit would only contribute a minor amount to this increased demand.

Cumulative impacts on waste management, utilities, and public services would result from more visitors being in the Corinth area at the same time, and for longer periods of time. Increased waste generation would result; however, the waste disposal facilities in the area currently have sufficient capacity to handle the increase. In addition, Alcorn County's Solid Waste Management Plan would address future disposal needs for the City and County. The demand for utilities and public services would also increase; however, additional utility hookups would only be necessary if commercial uses in the area were to expand. The demand for public services is already expected to be higher with increased visitation to the area due to the operation of the new interpretive center. This demand would increase a minor amount with the expansion of the Corinth Unit, and associated higher visitation. However, the NPS would aid in may public service responsibilities on their lands, further reducing the increase in demand.

Other tourism and recreational developments occurring in the area would have no potential to disproportionately and adversely impact low income or minority populations, or children. On the contrary, many, if not all, of these other developments would be free of charge or have a low admissions fee, allowing equal access to all persons, regardless of income level. Minorities may benefit equally from any activities developed in the public or private sector, particularly if the Mississippi African American Heritage trail is extended to include Corinth. School groups would also benefit cumulatively from the expansion of educational and interpretive opportunities in the area.

Consideration of Impacts From Potential Future Developments

As discussed in Section 4.1.3 of this EA, if Alternative B is selected as the action to be taken, the NPS would likely undertake developments at each of the Corinth Unit properties to be managed by the NPS to enhance visitor experience. Such developments could include: improving access to the sites; constructing parking areas for cars, buses, and RVs; developing trails around the sites; installing interpretive wayside signs and markers; and providing informational pamphlets that describe the historic events. These developments could impact the socioeconomic environment over the short- and long-term. The following is a general discussion of such impacts, which should be considered in subsequent NEPA documentation regarding these developments.

No changes in the local or regional population would be anticipated as a result of future NPS developments at the NPS-managed Corinth Unit sites. Construction activities could create employment in the area, as well as temporarily increase local and regional income and revenues. These beneficial impacts would likely have a negligible to minor impact on the regional economy, and would only be temporary in duration. No permanent employment opportunities would be created by these potential future developments, and no long-term associated economic benefits would result. An additional negligible to minor, beneficial economic impact that could potentially result from construction contracts would be an increase in State revenue from collection of a contractor's tax, if the contracts awarded are more than $10,000. In Mississippi, in lieu of the 7 percent sales tax imposed on other items, a 3.5 percent tax is levied on the total cost of the contracting job, including wages, overhead expenses, and profits. This gross receipts tax is levied only on nonresidential construction activities costing more than $10,000 (Shumpert, 2001; Taylor, 2001).

Economic impacts resulting from construction activities would largely depend on who is awarded the construction contracts, the costs of the developments, and whether materials and labor come primarily from local suppliers or suppliers outside of the region. The higher the percentage of local suppliers, materials, and labor used, the higher the local benefits would be. This would also determine whether new jobs are created, or whether existing workers are used. Construction contracts would likely be awarded competitively, and either local or non-local firms could win the bidding.

Potential future NPS developments at those Corinth Unit sites managed by the NPS may have temporary and longer-term adverse social consequences, although the intensity of these impacts

would vary by site. Temporary construction activities, and associated noise and traffic impacts, may disturb and/or receive opposition from nearby residents. Improved access and parking at the sites may increase the number of visitors to sites over the long-term, as well as the number of visitors at a given site at any one time. Such congestion and increased traffic may also disrupt and/or receive community opposition.

Potential construction-related impacts on the transportation system would be temporary and localized in geographic extent. Most of the projected improvements are modest in nature, and would not be major construction projects requiring extensive excavating or hauling. Much of the work should involve landscape and paving contractors. The primary transportation impact resulting from construction would be increased congestion on local roads from slow-moving and turning construction vehicles. The impact is expected to be negligible to minor in intensity.

Long-term impacts associated with these future developments would have both adverse and beneficial transportation-related impacts. Improvements to site access roads would increase the safety level of these roads, and would provide easier access to the Corinth Unit sites. Parking would also be enhanced at each site, reducing any potential congestion from vehicles stopped along the roadside. While improved access would be a beneficial impact, it could lead to increased visitation at each of the sites, increasing congestion and traffic along local roadways.

No land use changes would occur from construction activities associated with potential future NPS developments at the NPS-managed sites. Once the developments are finished, land use types at most of the sites would slightly change from passive recreation to low-density recreation. Other land use impacts would be attributed to the increased visitation and associated traffic in the areas. Development of trails on and around the sites would lead to more visitors being on the sites, not just at the roadsides. This could lead to confrontation between visitors and property owners. Such improvements at the sites could also lead to conflicts with adjacent landowners because visitors might be more tempted to trespass and litter. Adverse impacts such as these may be avoided or minimized if the NPS posts signs on “visitor behavior” at the sites, and with increased NPS personnel on-site.

Noise generated during construction activities could have moderate to major, although temporary, impacts on visitors, recreationalists, surrounding residents, and nearby sensitive receptors. Noise impacts would need to be evaluated on a site-by-site basis, as only some sites may be located in residential areas or close to sensitive receptors, such as schools, hospitals, and churches. Various mitigation measures could be taken to reduce construction noise impacts, such as the use of a noise barrier or timing restrictions. Long-term noise impacts would arise from an increased level of concurrent visitation to a site, given access improvements and parking expansions.

Construction activities associated with future NPS developments would adversely affect the visual quality of the immediate area, although only temporarily. The presence of construction workers and equipment on the sites would temporarily degrade visitor experience at the site, which may limit recreational opportunities and decrease visitor use of the site for the duration of construction. Over the long-term, the visual character at some sites may be altered with the development of trails through the sites. However, the trails would allow visitors to more fully

view the historical resources present on the sites, resulting in a potential long-term beneficial impact on visual quality. Long-term, localized, adverse impacts on visual quality may result from the increased presence of visitors and associated traffic around some sites, particularly those located in residential neighborhoods.

While construction activities might temporarily decrease recreational opportunities at each of the NPS-managed sites, due to disturbance from noise, disruption of the site's visual quality, and potential temporary site restrictions, all potential future developments would enhance long-term recreational opportunities and enjoyment at the sites. Access to the sites would be improved and available parking expanded, making it easier for recreationalists to use the sites. Additional opportunities would be created with the development of walking trails around the sites and the provision of interpretive signs and informational pamphlets.

Certain resource areas, such as utilities and public services, human health and safety, and waste management, may only be impacted during temporary construction activities. Typical of any construction project in an urban setting, construction activities have the potential to interrupt or accidentally damage both underground gas, water, and telephone lines/cables and overhead telephone and electrical wires. Such impacts can be avoided by referring to utilities maps and coordinating and consulting with the pertinent utility companies. If it is necessary to interfere with a given line, wire, or cable, this can be planned and executed with a minimum of disruption, provided the utility provider is informed beforehand and can cooperate.

Both worker and public health and safety may be impacted during construction, due to accidents and access to the construction site. To protect the safety of workers, the NPS has a set of construction contract safety standards and requirements, which contractors for NPS projects must follow during construction. These standards are contained within NPS Guide Specifications, Section 01360-4, *Accident Prevention* (NPS, 2000d). As part of these specifications, all workers or visitors to the construction site are required to wear hard hats, in addition to any other necessary protective equipment, at all times. At every construction site, adequate first aid facilities must be provided and emergency phone numbers posted, with reporting requirements. The NPS construction contract specifications also require that an accident prevention program, which includes, among other things, first aid procedures and training, hazardous materials handling and storage training, fire protection, and hazard identification, be established before work begins to ensure worker and visitor safety (NPS, 2000d).

Impacts to public safety during construction arise if access to the site is possible, especially at night and during hours when construction is not actively occurring. Public safety impacts can be avoided by erecting barricades around the construction site and locking the site at night and during work holidays.

Small amounts of solid, sanitary, construction, and vegetative waste would likely be generated by construction activities. Waste would be contained in appropriate containers on the project site, and, in accordance with NPS requirements, these containers would be emptied at least once a week (NPS, 2000c). Waste would be transported for disposal at the nearest approved disposal facility. Consideration would need to be given to the capacity of these disposal sites, based on

the amount of wastes anticipated to be generated by construction. Potential future NPS developments would not result in the generation of wastes over the long-term.

As with almost any construction project involving the use of heavy equipment, there is some risk of an accidental POL (petroleum, oil, lubricant) spill or unplanned release of some other toxic or hazardous contaminant onto the ground. However, the NPS requires that all employees that would be exposed to hazardous materials be trained and instructed in approved methods for handling and storage of such materials (NPS, 2000d). Therefore, the probability of a spill would be very low. In addition, the potential for an accidental chemical spill during construction could be further reduced by the development and implementation of an SPCC Plan, which would also minimize adverse impacts associated with a spill. The NPS has guidelines for the preparation of SPCC Plans, contained in *Envirofacts, Spill Prevention Planning* (NPS, 1999b).

Future NPS developments may have the potential to disproportionately and adversely affect low-income or minority populations, or the health and safety of children. Whether or not disproportionate impacts would occur would depend on the demographics of the neighborhood surrounding each of the sites. Separate and future NEPA documentation on these developments would be at the site-specific level, and would analyze the potential for disproportionate impacts to occur. The most recent U.S. Census Bureau income and poverty data should be analyzed for the neighborhoods surrounding the sites to be developed to determine the presence of low income or minority populations. Potential impacts that could disproportionately affect low-income or minority populations include short-term, adverse noise and public safety impacts from construction activities, and long-term social impacts, such as trespassing. The health and safety of children has the potential to be compromised temporarily during construction activities from site access, fugitive dust, and noise, and over the long-term from increased traffic associated with increased site visitation.

4.3.4.2 Conclusion

Implementation of Alternative B would not change the resident population of the area. Increases in employment and visitor spending associated with this alternative would have long-term, beneficial effects on the regional economy. While the beneficial effects resulting from employment opportunities would be negligible, effects associated with visitor spending are expected to be minor to moderate in intensity. Socially, long-term, minor, beneficial impacts would be experienced by the regional community, due to high levels of support for expansion of the Corinth Unit. However, adverse social impacts may result from nuisances, such as congestion or trespassing. These adverse impacts would be long-term, localized, and minor to moderate in intensity, and would particularly be of concern at and around those sites not managed by the NPS under Alternative B.

Alternative B would increase the amount and diversity of available recreational opportunities in Corinth and the region. This beneficial impact would be long-term and moderate to major in intensity. The resultant plottage effect would have long-term, regional, negligible to minor, beneficial impacts on the economy and visitor spending.

Impacts on transportation as a result of Alternative B would include long-term increases in traffic congestion and delays, local road damage, and the incidence of vehicular-related accidents. While these impacts would be both localized and regional, they would be greater at the local level. Combined with other projects around Corinth that would increase traffic in the area, transportation impacts could be major in intensity. However, due to the development of the *Corinth Downtown and Connecting Corridors Action Plan* for the City of Corinth, where most transportation-related impacts are expected to occur, these adverse impacts would be reduced in intensity to minor or moderate.

Adverse, long-term impacts on noise and visual quality in the area would also result from increases in visitation and visitor traffic. Visitor traffic and associated noise levels may disrupt the surrounding residential community around several of the potential Corinth Unit sites. This adverse impact would be long-term, localized, and minor to moderate in intensity. The increased presences of visitors and traffic would also alter the visual quality around the sites, leading to a long-term, localized, minor to moderate, adverse impact on visual quality. However, NPS management of some of the eligible properties, and site improvements associated with management and protection of resources on those properties, would result in long-term, minor, beneficial impacts on the visual quality of the NPS-managed Corinth Unit sites. Visual quality at those sites not under NPS management under Alternative B, however, would not be guaranteed to be protected over the long-term, and adverse impacts on the visual quality of these sites could occur.

Negligible, long-term changes in land use would occur on each of the sites managed by the NPS as use types change from passive recreation to low-density recreation. Inclusion of all eligible site into the Corinth Unit, and management of some sites by the NPS, would likely have a short-term, localized, minor to moderate, adverse impact on adjacent land values. Over the long-term, the highest and best uses of residential parcels surrounding the Corinth Unit sites could change to commercial. If rezoning were to occur, long-term, localized, moderate to major, beneficial impacts on adjacent land values would be expected. However, such change could pose a risk to the resources on the Corinth Unit sites. To prevent such risks, the NPS would develop a land protection plan and work with adjacent landowners to identify the impacts land use changes may have on the Park's resources.

While increased visitation would increase the amount of waste generated in region, this increase is expected to be negligible, and would easily be handled by existing facilities and plans. NPS management of some eligible Corinth Unit sites under Alternative B would change waste management practices on those properties. NPS waste management practices are designed to reduce, reuse, and recycle wastes, resulting in a long-term, localized, minor to moderate, beneficial impact on waste management.

Implementation of Alternative B would have no potential to damage or disrupt utilities in the area, or require additional utility connections. However, increased visitation to the region as a result of this alternative would increase demand for utilities a minor amount. The demand for public services in the region would also incur a minor increase, particularly in the area of law enforcement due to traffic problems.

While increased visitation at the Corinth Unit sites would likely result in a proportionate increase in the number of accidents/incidences occurring at the sites, this increase would not be the result of the management alternative. Rather, long-term, localized, moderate, beneficial impacts on human health and safety would result from NPS management, due to implementation of programs to protect visitor safety and provision of aid in emergency situations. However, increased visitation to Corinth Unit sites that would not be managed by the NPS under Alternative B could pose risks to visitors since no safety programs would be in place on these lands. This could have a long-term, minor to moderate, localized, adverse impact on human health and safety.

NPS management of 11 of the 18 eligible sites would not create a disproportionate, adverse impact on low income or minority populations, or children. On the contrary, beneficial impacts on these populations would be anticipated, due to no or low admissions fees, increased recreational opportunities, and enhanced interpretive and educational experiences.

The implementation of Alternative B would not significantly impact, and thus not impair, the socioeconomic environment or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.4 ALTERNATIVE C: EXPAND PROTECTION OF THE CORINTH UNIT TO INCLUDE CORE RESOURCES AND ADDITIONAL LANDS THAT PROVIDE HISTORIC CONTEXT

Under Alternative C, it is assumed that the new Corinth Civil War Interpretive Center has already been constructed at the Battery Robinett site, and is in operational phase. Specific impacts on natural resources, cultural resources, visitor use and experience, and the socioeconomic environment associated with the construction and operation of the new interpretive center were addressed in a separate EA. The environmental consequences of Alternative C result from the management of the Battery Robinett site, and all other properties determined to be eligible for inclusion into the Corinth Unit of Shiloh NMP, by the NPS, and efforts to be taken by the NPS to connect these sites to Shiloh NMP and to expand visitor experience in the region. Under Alternative C, additional acreage would be added to several properties discussed under Alternative B to protect important viewsheds and adjacent landscapes. These properties include: Contraband Camp, Corona College, Federal Lines 5/17, Federal Lines 5/19, Federal Lines 5/21, October Battlefield Phases I and II, Battery Robinett, and the Confederate Siegeworks. An additional 5,231 acres would be managed by the NPS under Alternative C.

4.4.1 Natural Resources

Under Alternative C, the NPS would take over management of all sites considered eligible for inclusion into the Corinth Unit of Shiloh NMP, as well as additional acreage at several properties to protect resources. In accordance with NPS *Management Policies 2001*, the NPS would manage the natural resources on these lands to maintain them in an unimpaired condition, and to preserve fundamental physical and biological processes. A long-range comprehensive strategy for natural resources management would be developed and implemented for these lands to identify activities necessary to achieve the desired future conditions of the Park's natural resources. Such activities may include inventorying, research, monitoring, restoration, mitigation, protection, and resource use management (NPS, 2000e). Overall, a long-term, localized, moderate, beneficial impact on natural resources would result from NPS management of all sites considered eligible for inclusion into the Corinth Unit. Due to the greater amount of land and sites protected by the NPS under this alternative, this beneficial impact on natural resources is anticipated to be greater than that resulting from Alternative B.

Under Alternative C, the NPS would also work with City, County, and State governments to develop a "corridors unit," consisting of automotive connections and all-purpose trails along existing roads in Mississippi and Tennessee, that connects Shiloh NMP with the properties within the Corinth Unit. The NPS' role in this development would be to encourage and promote use of the corridors and to provide interpretation along the corridors. Use of the corridors has the potential to affect natural resources along the routes.

Soils and Topography

Impacts on soils, topography, and prime farmlands resulting from NPS management of all eligible sites under Alternative C are expected to be similar to those resulting from Alternative B. Refer to Section 4.3.1 of this EA for a discussion of these impacts. However, due to the greater amount of land and sites protected by the NPS under Alternative C, beneficial impacts on soils are anticipated to be greater than those resulting from Alternative B. There would be no sites that would go unmonitored, and natural resource impacts unmitigated, under this alternative. In addition, due to the greater amount of land acquired by the NPS under this alternative, a greater amount of prime farmland would be permanently lost under Alternative C. However, this impact is still anticipated to be minor in intensity. Promotion and marketing of additional regional attractions by the NPS under this alternative should have no impact on soils, topography, or prime farmland.

Use of the all-purpose trails of the "corridors unit" by hikers and bicyclists under Alternative C could cause soil compaction or increased surface water runoff and soil erosion adjacent to the trail tread, depending on the type of material used to surface the trail. If an impervious surface is used, long-term increases in surface water runoff during storm events could occur, although compaction and soil erosion from use of the trail would be minimized. Proper installation of drainage controls along the trail would minimize any adverse impacts resulting from the use of an impervious surface on the trail.

Water Resources

The impacts on water resources resulting from NPS management of all eligible sites under Alternative C are expected to be similar to those resulting from Alternative B. Refer to Section 4.3.1 of this EA for a discussion of these impacts. However, due to the greater amount of land and sites protected by the NPS under Alternative C, beneficial impacts on water resources are anticipated to be greater than those resulting from Alternative B. Promotion and marketing of additional regional attractions by the NPS under this alternative should have no impact on water resources.

With one exception, the Davis Bridge Battlefield site, none of the potential Corinth Unit properties contain wetlands or are located adjacent to wetlands. The Davis Bridge Battlefield site abuts the bank of the Hatchie River, but it is unlikely that visitation would occur in this area of the site. Any future visitor-related facilities would be located away from wetland areas, keeping visitors away from wetland areas. Thus, there would be no potential to adversely impact wetlands as a result of Alternative C.

On the contrary, the NPS would manage wetlands on the Corinth Unit properties in accordance with NPS mandates, Executive Order 11990, *Wetland Protection*, the CWA, the Rivers and Harbors Appropriation Act of 1899, and Director's Order 77-1, *Wetland Protection*. According to NPS *Management Policies 2001*, the NPS would take action to prevent the destruction, loss, or degradation of wetlands on its lands, preserve and enhance the values of wetlands, and avoid support of new construction in wetlands, unless there are no practicable alternatives and all practicable measures to minimize adverse impacts to wetlands are included in the action. The NPS maintains a no net loss of wetlands policy, which includes compensation for any wetland impacts or losses that occur (NPS, 2000e).

The Davis Bridge Battlefield site is the only property of all potential Corinth Unit sites that is located within a floodplain, that of the Hatchie River. During periods of high water or flooding, it may be necessary to temporarily close the site for the safety of visitors, or simply because any facilities on the site are underwater. After floodwaters have receded, cleanup of debris and sediments that have been deposited may be necessary before the site can be reopened to the public. The principal seasons for flooding in this area are the winter and spring.

The NPS would manage floodplains on its lands in accordance with the NPS Organic Act, Executive Order 11988, *Floodplain Management*, applicable provisions of the CWA, and the Rivers and Harbors Appropriation Act of 1899. The NPS would manage the Corinth Unit properties for the preservation of floodplain values, including the protection, restoration, and preservation of the natural resources and functions of floodplains, the avoidance of environmental effects associated with occupancy and modification of floodplains, and the avoidance of support for floodplain development. If it is necessary to develop or conduct inappropriate human activities within a floodplain, the NPS would prepare a statement of findings (consistent with Director's Order 77-2, *Floodplain Management*), and use all practicable measures to reduce hazards to life and property, while minimizing impacts to natural resources on floodplains (NPS, 2000e).

As stated above, use of the all-purpose trails of the "corridors unit" under Alternative C could lead to increased soil erosion and compaction and increased surface water runoff from the trail surface, which could adversely affect water resources over the long-term. These adverse impacts would be minimized using the measures discussed above under *Soils and Topography*.

Air Quality

Under Alternative C, the NPS would undertake management of all 18 sites considered eligible for inclusion into the Corinth Unit. NPS management of these sites would not involve any activities that would create additional emissions or increase emissions sources in the area, nor would management activities generate additional fugitive dust. On the contrary, in accordance with NPS *Management Policies 2001*, the NPS would work to develop pollution control programs to preserve, protect, and enhance the air quality of the Unit. As part of these efforts, the NPS would inventory air quality-related values associated with the Park, evaluate any air pollution causes and impacts, minimize air quality pollution emissions, and monitor air quality conditions (NPS, 2000e).

However, as a result of implementation of Alternative C, visitation to each of the properties is expected to increase somewhat over current levels, as is the current number of driving tours throughout the area. Establishment and promotion of a "corridors unit" between Shiloh NMP and the Corinth Unit sites would also cause an increase in vehicular traffic along these roadways, as visitors are encouraged to drive the corridors. Increased numbers of vehicles in the area would increase the amount of emissions generated. Visitation to other recreational destinations in the region is also expected to increase above current levels under this alternative, due to NPS activities designed to link the Corinth Unit to the regional context. Although resulting adverse impacts on air quality would be greater under Alternative C than under Alternative B, these impacts are still expected to be negligible to minor in intensity, regional, and long-term.

Vegetation and Wildlife

The impacts on vegetation and wildlife resulting from NPS management of all eligible Corinth Unit sites under Alternative C are expected to be similar to those resulting from Alternative B. Refer to Section 4.3.1 of this EA for a discussion of these impacts. However, due to the greater amount of land and sites protected by the NPS under Alternative C, beneficial impacts on vegetation and wildlife are anticipated to be greater than those resulting from Alternative B. Promotion and marketing of additional regional attractions by the NPS under this alternative should have no impact on vegetation or wildlife.

Use of the all-purpose trails within the proposed "corridors unit" under Alternative C could result in adverse impacts on vegetation along the trail due to trampling by trail users or due to trail maintenance activities. These impacts would occur to a greater extent if the trail tread is poorly defined, causing users to veer off the trail surface. Use of an impervious surface on the trail would allow for a more defined trail tread, minimizing the potential for users to leave the trail surface, and also minimizing the need to remove vegetation impeding the trail during maintenance. Use of the trail by hikers and bicyclist would also disturb wildlife adjacent to the trail, due to the presence of the visitors and noise generated by them. This impact would be

long-term, localized to the area adjacent to the trail, and negligible in intensity, as the trails would be located adjacent to existing roadways, where wildlife have likely already adapted to the noise produced on the roadways.

Threatened and Endangered Species and Species of Concern

As stated in Section 3.1.4.1 of this EA, the only federally listed species that has been documented in any of the three counties in which the potential Corinth Unit sites are located is the endangered gray bat, which is known only from a single specimen netted more than three decades ago in Hardeman County. In addition, a number of sensitive plant and animal species listed by the States of Mississippi and Tennessee occur in all three affected counties. These organisms do not receive the same level of legal protection as federally listed species. While increased visitation to the Corinth Unit sites may increase the potential for disturbance of such wildlife or damage to rare vegetation, NPS management of all sites would allow for much greater protection of sensitive species, resulting in a long-term, localized, moderate to major, beneficial impact on these species. This impact would be greater than that anticipated under Alternative B. It is NPS policy to survey for, protect, prevent detrimental effects on, and aim to recover all species listed under the ESA that are native to national park system units. The NPS would continuously cooperate with both the USFWS and the National Marine Fisheries Services, as appropriate, to ensure compliance with the ESA. Among other actions, the NPS would develop and implement programs on its lands to inventory, monitor, restore, and maintain habitats for listed species and to control for detrimental non-native species and visitor access. In addition, the NPS would inventory, monitor, and manage State and locally listed species in a manner similar to NPS management of federally listed species, whenever possible (NPS, 2000e), allowing for much greater protection of these species than under current conditions at all potential Corinth Unit sites.

4.4.1.1 Connected Actions and Cumulative Impacts

Since the NPS would be responsible for management of all eligible Corinth Unit sites under Alternative C, the NPS would ensure protection of natural resources against adverse impacts associated with any additional increases in visitation at Corinth Unit sites anticipated from other heritage tourism developments in the region. Unlike Alternative B, all sites would be monitored, and adverse impacts from increased visitation mitigated, under Alternative C. Under Alternative C, cumulative air quality impacts would be expected to be slightly more distributed across the region, since more visitors may be inclined to visit other regional attractions. However, these impacts would still be minor in intensity.

Consideration of Impacts From Potential Future Developments

As discussed in Section 4.1.3 of this EA, if Alternative C is selected as the action to be taken, the NPS would likely undertake developments at each of the properties included in the Corinth Unit to enhance visitor experience. Such developments could include: improving access to the sites; constructing parking areas for cars, buses, and RVs; developing trails around the sites; installing interpretive wayside signs and markers; and providing informational pamphlets that describe the historic events. These developments have the potential to impact natural resources on and

around the properties. Since the types of developments that might be undertaken under this alternative are the same as those described under Alternative B, the potential impacts resulting from such developments would largely be the same. Refer to Section 4.3.1.1 for a discussion of these potential impacts on natural resources. However, under Alternative C, the inclusion of additional sites under NPS management raises a few additional concerns regarding potential developments at these additional sites. These concerns are discussed below. In addition, there may be a slightly higher potential for visitation at each of the sites over the long-term under Alternative C due to the establishment and promotion of the "corridors unit."

With one exception, the Davis Bridge Battlefield property, none of the potential Corinth Unit sites contain wetlands or are located adjacent to wetlands. The Davis Bridge Battlefield would be acquired and managed by the NPS under Alternative C, and would be subject to future potential developments. The Davis Bridge Battlefield site abuts the bank of the Hatchie River, but it is unlikely that any potential developments at this site would entail any fill or discharge into wetlands or waters of the United States. Thus, impacts to wetlands from visitor-related developments associated with this alternative would be non-existent to negligible.

Likewise, only the Davis Bridge Battlefield site is located within a floodplain, that of the Hatchie River. It is highly unlikely that any of the potential future visitor-related developments at this site (such as installation of interpretive signs or construction of a parking lot, access road, or trail) would be affected significantly by their presence in a floodplain; nor would the developments adversely affect the floodplain or expose downstream properties to an increased risk of flooding. During periods of high water or flooding, it may be necessary to temporarily close any visitor-related facilities developed at this site for the safety of visitors, or simply because the facilities are underwater. After floodwaters have receded, cleanup of debris and sediments that have been deposited may be necessary before the site can be reopened to the public.

Hardeman County, Tennessee, is known to have a federally listed species within its boundaries. The Davis Bridge Battlefield site is located in Hardeman County, and would be subject to future NPS development under Alternative C. Coordination and consultation with the USFWS would need to be conducted regarding the presence or absence of any federally listed threatened or endangered species on or near the construction site. If any such species are present on the site to be constructed, measures would be taken to avoid impacts to these species. In view of the general absence of federally listed threatened and endangered species in these counties, plus the comparatively modest scale of the potential future visitor-related developments, adverse impacts on federally listed species are likely to be non-existent to negligible, at most.

A number of sensitive plant and animal species listed by the States of Mississippi and Tennessee occur in all three counties that would be affected by potential future NPS developments under Alternative C. Future developments are unlikely to have more than a negligible impact on any of these listed populations. Where listed species are identified that could potentially be impacted by a forthcoming development, the NPS would coordinate and cooperate with State authorities, such as the Mississippi and/or Tennessee Natural Heritage Programs, and if appropriate, the USFWS to protect these species.

4.4.1.2 Conclusion

Direct, indirect, and cumulative impacts on natural resources associated with NPS management of all eligible sites under Alternative C would be similar to those resulting from Alternative B. Refer to Section 4.3.1.2 of this EA for a discussion of these impacts. However, due to the greater amount of land and sites protected by the NPS under Alternative C, beneficial impacts on natural resources are anticipated to be greater than those resulting from Alternative B. In addition, wetlands and floodplains would receive NPS protection under this alternative. Promotion and marketing of additional regional attractions by the NPS should have no impact on natural resources. Coordination to develop and promote the use of the "corridors unit" under Alternative C may result in long-term, minor, adverse impacts on natural resources along the corridors.

The implementation of Alternative C would not significantly impact, and thus not impair, natural resources or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.4.2 Cultural Resources

The impacts on cultural resources resulting from NPS management of all 18 eligible sites under Alternative C are expected to be similar to those resulting from Alternative B for NPS-managed sites. Refer to Section 4.3.4 of this EA for a discussion of these impacts. However, due to the greater amount of land and sites protected by the NPS under Alternative C, beneficial impacts on cultural resources are anticipated to be much greater than those resulting from Alternative B, and would be major in intensity. The adverse impacts on cultural resources discussed under Alternative B that would result from lack of NPS management would not occur under Alternative C; all 18 Corinth Unit sites would be protected and preserved over the long-term. Promotion and marketing of additional regional attractions by the NPS under this alternative should have no impact on cultural resources.

Under Alternative C, the NPS would work with City, County, and State authorities to develop and promote a "corridors unit" between Shiloh NMP and the Corinth Unit sites. The corridors within this "unit" would follow historic troop movements between Shiloh and Corinth, along existing road rights-of-way. The NPS would install interpretive wayside markers and signage along these corridors and would provide informational services on the historic resources along the corridors. Wherever possible, the historic resources along the corridors would be preserved. Not only would preservation of these resources have a long-term, beneficial impact on cultural resources that would not occur under Alternative B, it would also enhance visitor appreciation and understanding of these resources, which could also have a long-term beneficial impact on historic resources by increasing public protection of these resources.

4.4.2.1 Connected Actions and Cumulative Impacts

Under Alternative C, there would no longer be the concern that private landowners of potential Corinth Unit sites would develop on their lands, thus potentially damaging or destroying valuable cultural resources. In addition, since all Corinth sites would be managed by the NPS under Alternative C, any cultural resource impacts at any Corinth Unit site associated with increased visitation resulting from other heritage tourism developments in the region would be closely monitored and mitigated. Other beneficial cumulative impacts associated with NPS management would be the same as those described for Alternative B in Section 4.3.2.1 of this EA.

Consideration of Impacts From Potential Future Developments

As discussed in Section 4.1.3 of this EA, if Alternative C is selected as the action to be taken, the NPS would likely undertake developments at each of the properties included in the Corinth Unit to enhance visitor experience. Since the types of developments that might be undertaken under this alternative are the same as those described under Alternative B, the potential impacts on cultural resources resulting from such developments would be the same. Refer to Section 4.3.2.1 for a discussion of these potential impacts on cultural resources.

4.4.2.2 Conclusion

Direct, indirect, and cumulative impacts on cultural resources associated with implementation of Alternative C would be similar to those resulting from Alternative B. Refer to Section 4.3.2.2 of this EA for a discussion of these impacts. However, due to the greater amount of land protected by the NPS under Alternative C, beneficial impacts on cultural resources are anticipated to be greater than those resulting from Alternative B. Promotion and marketing of additional regional attractions by the NPS should have no impact on cultural resources. Preservation of historic resources along the "corridors unit" under Alternative C would have an additional long-term, beneficial impact on cultural resources above those predicted to result from implementation of Alternative B.

The implementation of Alternative C would not significantly impact, and thus not impair, cultural resources or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.4.3 Visitor Use and Experience

Under Alternative C, all sites associated with the Siege and Battle of Corinth that are determined to be eligible for inclusion into the national park system would be added to the Corinth Unit of Shiloh NMP and managed by the NPS. The impacts on visitor use and experience resulting from NPS management of all eligible sites under Alternative C are expected to be similar to those resulting from Alternative B, discussed in Section 4.3.3 of this EA. However, under Alternative

C, additional sites would be acquired and managed by the NPS, and additional acreage would be added to several properties to protect important viewsheds and adjacent landscapes, including the Contraband Camp, Corona College, Federal Lines 5/17, Federal Lines 5/19, Federal Lines 5/21, October Battlefield Phases I and II, Battery Robinett, and the Confederate Siegeworks. The protection of historic viewsheds and adjacent landscapes would further enhance visitor experience over the long-term beyond that described under Alternative B. In many cases, the viewsheds between various resources, as well as those between the resources and the City of Corinth and the railroad, are significant in that they provide the historic setting within which to interpret the Battle of Corinth. Therefore, the protection of historic viewsheds under Alternative C would result in an additional long-term, beneficial impact on visitor use and experience. This impact would likely be moderate in intensity.

Under Alternative C, all eligible Corinth Unit sites, and the resources they contain, would be protected and preserved over the long-term, ensuring future visitor use and interpretation of all sites. This preservation of all sites would ensure that the complete story of the Siege and Battle of Corinth could be told and experienced by visitors over the long-term. Visitor use and experience would be further enhanced and preserved under Alternative C than under Alternative B.

Efforts would be taken by the NPS under this alternative to expand visitor experience in the region beyond the Corinth Unit sites. Tourists who have extra time to spend in the area might decide to go to some of these other historic and/or recreational sites for an afternoon. Others who are on a more rigid touring schedule might take information on a future event or attraction and decide to return for a few days at a later time. The primary attraction for most non-residents to the area would likely continue to be the new Corinth Civil War Interpretive Center at Battery Robinett. Given time constraints, visits to other Civil War sites, particularly the sites included in the Corinth Unit, are the next most likely tour stop. NPS' marketing of non-Civil War sites is not expected to increase visitor use and experience of these sites to a major level. Nevertheless, these efforts could have minor to moderate beneficial impacts on visitor use and experience by expanding a visitor's appreciation of the region.

In addition, under Alternative C, the NPS would work with City, County, and State authorities to develop and promote a "corridors unit" connecting Shiloh NMP and the Corinth Unit sites. This "corridors unit" would consist of hiking, bicycling, and automotive connections along existing roadways that would follow the historic troop movements between Shiloh and Corinth, and would connect with the internal road networks of both Shiloh NMP and the City of Corinth to complete the loop. NPS actions along these corridors would consist of the installation of interpretive wayside markers and signage and the provision of informational services regarding the resources along the corridors.

The development of this "corridors unit," and the additional interpretation provided along it, would enhance visitor use and experience beyond that provided under Alternative B. The "corridors unit" would enhance visitor understanding of the connection between Shiloh and Corinth during the Civil War, provide a broader picture of the role of the Corinth Unit sites in the War, and create a more organized, cohesive Park. Development and promotion of a "corridors unit" may increase the number of Corinth Unit sites that a visitor would normally visit without

the "corridor," but is not expected to increase total area visitation to a noticeable level above that projected under Alternative B. Increasing the number of Corinth Unit sites that a visitor may go to could increase the potential for congestion at each of the sites. Since many of the sites are far enough apart that it may not be convenient for a visitor to view an alternate site during congested times, this could cause a long-term, localized, minor to moderate, adverse impact on visitor use and experience.

Promotion of the corridors and interpretation along them would serve the function of a more organized tour through the Corinth Unit sites, which would make a visitor more likely to move on to the next site along the "tour." In a way, the corridors would serve as a guide for visitors to the Corinth Unit and Shiloh NMP. With so many sites being considered for inclusion into the Corinth Unit, a visitor may feel overwhelmed and may not know which sites to visit first or what the best, most time-efficient way would be to visit the sites. The corridors unit would organize trips to the sites for the visitor to alleviate these problems. This would create a long-term, moderate, beneficial impact on visitor use and experience.

4.4.3.1 Connected Actions and Cumulative Impacts

The cumulative impacts associated with implementation of Alternative C would be similar to those described for Alternative B. Refer to Section 4.3.3.1 for this discussion. NPS efforts to expand visitor experience in the region, along with other heritage tourism and recreational developments in the area, may increase visitation to these sites to a level somewhat greater than under Alternative B. However, this increase would not be large enough to change the impact ratings given for Alternative B.

Consideration of Impacts From Potential Future Developments

As discussed in Section 4.1.3 of this EA, if Alternative C is selected as the action to be taken, the NPS would likely undertake developments at each of the properties included in the Corinth Unit to enhance visitor experience. Such developments could include: improving access to the sites; constructing parking areas for cars, buses, and RVs; developing trails around the sites; installing interpretive wayside signs and markers; and providing informational pamphlets that describe the historic events. These developments have the potential to impact visitor use and experience over the short- and long-term. Since the types of developments that might be undertaken under this alternative are the same as those described under Alternative B, the potential impacts on visitor use and experience resulting from such developments would be the same. Refer to Section 4.3.3.1 for a discussion of these potential impacts. The only difference might accrue from a slightly higher increase in visitation to more of the sites over the long-term due to the development and promotion of the "corridors unit" under Alternative C, which may increase the potential for congestion at each of the Corinth Unit sites.

4.4.3.2 Conclusion

The impacts on visitor use and experience resulting from the addition of all eligible sites to the Corinth Unit would be long-term, regional, moderate to major in intensity, and beneficial. However, the additional marketing of the sites by the NPS, as well as the development of a

"corridors unit" could lead to congestion at individual sites, due to the increased likelihood that visitors would visit more sites. This could cause a long-term, localized, minor to moderate, adverse impact on visitor use and experience.

The management of all eligible sites by the NPS should help to prevent further impairment of the historic integrity of earthworks and fortifications at all Corinth Unit sites, and could improve their long-term viability. Under NPS management, improvement of the quality of the existing visitor experience would be enhanced and maintained at all Corinth Unit sites, resulting in a localized, long-term, beneficial impact on visitor use and experience. In addition, protection of historic viewsheds and adjacent landscapes under Alternative C would further enhance visitor experience over the long-term beyond that described under Alternative B. This impact would likely be moderate in intensity.

NPS development and promotion of the "corridors unit" under Alternative C would enhance visitor use and experience by providing a better understanding of the connection between Shiloh and Corinth during the Civil War, a broader picture of the Corinth Unit sites in the War, a more organized, cohesive Park, and additional interpretation than that provided by Alternative B. The development of the "corridors unit" would have a long-term, moderate, beneficial impact on visitor use and experience, beyond that offered by Alternative B. While the "corridors unit" would be expected to increase the number of Corinth Unit sites that a visitor would normally visit without the "corridor, " but is not expected to increase total area visitation to a noticeable level above that projected under Alternative B.

NPS efforts to expand visitor experience in the region beyond the Civil War-related sites could have minor to moderate, beneficial impacts on visitor use and experience by expanding a visitor's appreciation of the region.

The implementation of Alternative C would not significantly impact, and thus not impair, opportunities for visitor use and experience or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.4.4 Socioeconomic Environment

Population, Economy, and Social Conditions

The impacts on population, economics, and social conditions resulting from Alternative C are expected to be similar to those resulting from Alternative B, discussed in Section 4.3.4 of this EA. While there is strong community support for the expansion of the Corinth Unit in general, as evidenced at the December 2001 scoping meeting in Corinth, there seems to be universal community support for Alternative C. In addition, Alternative C may result in long-term, minor to moderate, beneficial social impacts at or around those sites at which the NPS would acquire additional acreage, due to decreased crowding with more space, and a lesser potential for social conflicts with increase separation of visitors and adjacent land uses. With NPS management of

all eligible Corinth Unit sites under Alternative C, the NPS would be able to provide law enforcement at all sites, as well as manage visitation/visitor use at all sites, which may decrease the potential for vandalism and other adverse social impacts.

There would be small differences in impacts resulting from Alternatives C and B in the area of economics. Under Alternative C, the promotion of local and regional visitor attractions by the NPS might prompt some people to stay in the area one additional night. More likely, however, is that visitors would take the information and decide to return to the Corinth area for another visit. Typically, people have a limited time scheduled for vacations and do not deviate greatly from their plans. Hence, staying the one additional night, as discussed under Alternative B, might be possible, given the limited flexibility people allow in their vacation schedules. However, additional attractions would likely have to be scheduled for another time. The increase in total visitor nights and spending would be spread out over time. The greater increase in visitor spending under Alternative C than under Alternative B is expected to be minor, long-term, and regional.

NPS efforts to develop and promote a "corridors unit" under Alternative C would not be expected to change NPS expenditures on the Corinth Unit much beyond those predicted under Alternative B. NPS actions would primarily entail coordination with City, County, and State authorities; installation of interpretive wayside markers and signage along the corridors; and the provision of informational services. The States of Mississippi and Tennessee, the City of Corinth, and the respective counties would continue to be the management authorities of the proposed "corridors unit," and would have maintenance responsibilities for the roads and trails and incur maintenance costs. Therefore, additional NPS costs would be minimal. Likewise, the development of the "corridors unit" would not be expected to generate any additional revenue to the affected states or counties, since use of the automotive and hiking/bicycling routes would be free of charge.

Transportation

Under Alternative C, the NPS would work cooperatively with City, County, and State authorities to develop and promote a "corridors unit" connecting Shiloh NMP and the Corinth Unit sites. The proposed "corridors unit" would follow mostly along existing roadways between Shiloh and Corinth, in the existing rights-of-way. This "corridors unit" would consist of hiking, bicycling, and automotive connections along existing roadways that would follow the historic troop movements between Shiloh and Corinth, and would connect with the internal road networks of both Shiloh NMP and the City of Corinth to complete the loop. The hiking/bicycling routes provided by the "corridors unit" would entail a round-trip loop of upwards of 50 miles, and would run adjacent to State Routes 57, 22, 142, and various McNairy and Alcorn County roads. NPS actions along these corridors would consist of the installation of interpretive wayside markers and signage and the provision of informational services regarding the resources along the corridors. No change in jurisdiction would occur within the "corridors unit." The States of Mississippi and Tennessee, the City of Corinth, and the respective counties would continue to be the management authorities of the proposed "corridors unit."

As with Alternative B, the new Corinth Civil War Interpretive Center at Battery Robinett is assumed to be in operational phase, and traffic impacts from visitation to the interpretive center are part of the existing conditions in the area. It is also assumed that most of the people projected to visit the new Corinth Civil War Interpretive Center at Battery Robinett are already expected to be visiting Shiloh NMP. Therefore, the number of vehicles in the area under Alternative C would not be expected to deviate much from existing conditions, assuming the new interpretive center is already in operation. However, the number of vehicles traveling on the roadways of the "corridors unit" is expected to increase.

In contrast to Alternative B, the driving routes that would be used by visitors to access the various Corinth Unit sites under Alternative C would be more defined due to the establishment of the "corridors unit," resulting in less scattered visitation, and subsequently, less scattered traffic patterns. Under this alternative, traffic patterns would be more directed to the routes associated with the "corridors unit," and there would be an increase in the number of vehicles using these specific routes than estimated under Alternative B.

While more directed traffic may lead to increased congestion on the "corridors unit" roadways and an increased potential for damage to these roads, establishment and promotion of a "corridors unit" could help focus streetscape and traffic improvement efforts.

In addition, development of the "corridors unit" would allow visitors to have more options for traveling to many of the Corinth Unit sites and other sites in the area. Development of all-purpose trails would allow visitors to tour the sites by hiking or bicycling along the corridors. Depending on how many visitors choose to travel via the all-purpose trails, development of these trails could decrease the number of visitor vehicles on area roadways. However, this decrease would not likely be noticeable.

Development of these all-purpose trails within existing road rights-of-way may create an additional safety problem for users of the trails. Since road rights-of-way run immediately adjacent to open lanes of traffic, hikers and bicyclists on the trail could be threatened by accidents with oncoming vehicles traveling on roadways. The potential for such accidents to occur would be greater along those road segments with higher established speed limits. Without protective measures, this adverse impact would be long-term, and moderate in intensity. This impact could be reduced by installing signage along the corridors warning motorists of the presence of the trail and telling motorists and bicyclists to use caution. In addition, developing the trails so that there is a space between open lanes of traffic and the trails would reduce potential safety risks to a minor level.

All other impacts on transportation resulting from NPS management of all eligible sites under Alternative C, such as traffic associated with visitation to other Corinth attractions, road damage, safety concerns, traffic delays, and residential area traffic concerns, are expected to be similar to those resulting from Alternative B. Refer to Section 4.3.4 of this EA for a discussion of these impacts.

Promotion and marketing of additional regional attractions by the NPS may increase the level of intensity of particular transportation-related impacts, although not to a degree that would change

the intensity rating provided for Alternative B. In addition, under Alternative C, transportation-related impacts may extend beyond the routes to the potential Corinth Unit sites, and into the region. However, visitation to regional attractions, and associated visitor traffic in the region, is not expected to increase substantially above current levels under this alternative.

Land Use

The impacts on land use resulting from Alternative C are expected to be similar to those resulting from Alternative B. Refer to Section 4.3.4 of this EA for a discussion of these impacts. However, under Alternative C, all 18 Corinth Unit sites would be acquired and managed by the NPS and additional acreage would be added to several properties to protect important viewsheds and adjacent landscapes. These properties include: Contraband Camp, Corona College, Federal Lines 5/17, Federal Lines 5/19, Federal Lines 5/21, October Battlefield Phases I and II, Battery Robinett, and the Confederate Siegeworks. Although land uses on these lands are not likely to change much from existing uses after NPS acquisition, NPS acquisition of adjacent landscapes and additional sites would restrict future commercial and/or residential development on these lands. This would protect Corinth Unit sites against the potential for development of incompatible land uses adjacent to NPS-owned sites, resulting in a long-term, moderate, beneficial impact on land use.

NPS acquisition of the additional 5,231 acres would permanently convert ownership of this land from private to public, which would add to impacts on the affected jurisdiction's tax base. As stated in Section 4.3.4, land owned by the NPS is tax exempt and PILTs are made. The only land that may not qualify for PILT payments is the Metamora Hill area at the Davis Bridge Battlefield site in Tennessee. According to U.S.C. 31, Section 6901, land that was owned by a state or local government prior to its transfer to the NPS only qualifies for PILT payments if it was acquired from a private party to donate to the U.S. within 8 years prior to the transfer to NPS.

Promotion and marketing of additional regional attractions and development and promotion of the "corridors unit" by the NPS under Alternative C should have no impacts on land use. The proposed "corridors unit" would follow mostly along existing roadways between Shiloh and Corinth, in the existing rights-of-way. The NPS would work cooperatively with City, County, and State authorities to establish the connection that would be offered by the "corridors unit," and would assist in providing interpretation along the corridors. NPS actions would primarily entail the installation of interpretive wayside markers and signage along the corridors, as well as informational services. No change in jurisdiction would occur within the "corridors unit." The States of Mississippi and Tennessee, the City of Corinth, and the respective counties would continue to be the management authorities of the proposed "corridors unit."

Utilities and Public Services

The impacts on utilities and public services resulting from Alternative C are expected to be the very similar to those resulting from Alternative B. Refer to Section 4.3.4 of this EA for a discussion of these impacts. Promotion and marketing of additional regional attractions by the NPS under this alternative may increase visitation to other recreational destinations in the region.

Increased visitation may result in an increase in the demand for utilities and public services in the area. As more visitors come to the area and stay overnight, increased use of water, electricity, and gas would be expected for the area. However, this increase would only be expected to have a minor impact on levels of demand in the area, and should not require any additional utility connections or any major impacts on utility rates. In addition, increases in visitation at other recreational destinations outside of the Corinth area would not be expected to have an additive impact on increased utility demands or subsequent impacts on user rates, as these other destinations are likely served by different utility providers.

Noise

Noise impacts resulting from Alternative C would be very similar to those resulting from Alternative B. Refer to Section 4.3.4 of this EA for a discussion of those impacts. Adverse impacts relating to noise are expected to be long-term, localized, and minor to moderate in intensity. One difference between these alternatives would result from a potentially higher level of visitation at each of the sites under Alternative C, but this increase would be so small as to result in a negligible change in noise levels over Alternative B.

In addition, the development and promotion of a "corridors unit" under Alternative C would result in more vehicles traveling along the automotive routes of the corridors, as well as hikers and bicyclists traveling on the proposed all-purpose trails of the "corridors unit." Increased travel along these routes would increase the noise levels along the routes above that projected under Alternative B. Although this impact would be long-term and adverse, it would be minor in intensity, and localized to the areas adjacent to the corridors. Additional disturbance of wildlife and any residential areas along the corridors would be expected; however, these impacts would be minor, and would not be expected to deviate much from those projected under Alternative B.

Recreation

Many of the impacts on recreation resulting from Alternative C would be very similar to those resulting from Alternative B. Refer to Section 4.3.4 of this EA for a discussion of those impacts. However, under Alternative C, additional sites would be managed by the NPS and acreage would be added to several properties to protect important viewsheds and adjacent landscapes. The protection of additional sites, historic viewsheds, and adjacent landscapes would further enhance visitor experience over the long-term beyond that described under Alternative B. This impact would likely be moderate in intensity.

Under Alternative C, the NPS would undertake efforts to expand visitor experience in the region, and would jointly develop and promote recreational opportunities in the City of Corinth and the region. There are no specific projects anticipated at this time under Alternative C, but the potential impacts of NPS efforts would be beneficial. The duration of the impacts on recreation would be influenced by the nature of the opportunity (i.e., is it a one time festival or construction of a visitor attraction), as would the extent of the impact.

In addition, under Alternative C, the NPS would work cooperatively with City, County, and State authorities to develop and promote a "corridors unit" connecting Shiloh NMP and the Corinth

Unit sites. The proposed "corridors unit" would follow mostly along existing roadways between Shiloh and Corinth, in the existing rights-of-way. This "corridors unit" would consist of hiking, bicycling, and automotive connections along existing roadways that would follow the historic troop movements between Shiloh and Corinth, and would connect with the internal road networks of both Shiloh NMP and the City of Corinth to complete the loop. The hiking/bicycling routes provided by the "corridors unit" would entail a round-trip loop of upwards of 50 miles, and would run adjacent to State Routes 57, 22, 142, and various McNairy and Alcorn County roads. NPS actions along these corridors would consist of the installation of interpretive wayside markers and signage and the provision of informational services regarding the resources along the corridors.

The development of a "corridors unit" under Alternative C would expand recreational opportunities in the area by providing hiking and bicycling opportunities, and would help to make Shiloh NMP and the Corinth Unit of the NMP a recreation destination in addition to a historic Civil War resource. Development of the "corridors unit" would be expected to have a long-term, moderate, beneficial impact on recreation in the region. Providing an all-purpose trail that loops around many of the Corinth Unit sites may also draw additional local visitation to these sites. Local residents would also use the trail for recreational activities, and may stop to visit many of the Civil War sites along the route. While this would not be "new" visitation to the area, it may enhance local appreciation for these resources.

Although the all-purpose trail would be developed for use by both hikers and bicyclists, given the long round-trip distance of the trail (approximately 50 miles), it is unlikely that hikers would use the majority of the trail length. As shown in **Figure 2-10** of this EA, there would be long segments of the trail within the "corridors unit" that would neither be located near any of the Corinth Unit sites nor any developed areas. Without any areas to stop and rest, or without the provision of restroom facilities or access to drinking water, it is unlikely that these long stretches of trail would be used by hikers. Hikers would likely be confined to the portions of the trail in or near the City of Corinth or Shiloh NMP. In contrast, the entire length of the trail would likely be used by bicyclists.

To encourage all-purpose use of the trail, consideration should be given to the provision of rest areas, including restroom and drinking water facilities, during the development of the "corridors unit" trails, particularly along long segments that transverse undeveloped areas. In addition, consideration should be given to potential expansions of the recreational opportunity provided by the trail. Such expansions may include developing picnicking areas near interpretive wayside makers or camping areas along segments of the trail that transverse undeveloped areas.

Development of these all-purpose trails within existing road rights-of-way may create an additional safety problem for recreational users of the trail. Since road rights-of-way run immediately adjacent to open lanes of traffic, hikers and bicyclists on the trail could be threatened by accidents with oncoming vehicles traveling on roadways. Without protective measures, this adverse impact on human health and safety would be long-term, and moderate in intensity. This impact could be reduced by installing signage along the corridors warning motorists of the presence of the trail and telling motorists and trail users to use caution. In

addition, developing the trails so that there is a space between open lanes of traffic and the trails would reduce potential safety risks to a minor level.

Human Health and Safety

Development and use of the all-purpose trails within existing road rights-of-way of the "corridors unit" may create an additional safety problem under Alternative C. Since road rights-of-way run immediately adjacent to open lanes of traffic, hikers and bicyclists on the trail could be threatened by accidents with oncoming vehicles traveling on roadways. The potential for such accidents to occur would be greater along those road segments with higher established speed limits. Without protective measures, this adverse impact on human health and safety would be long-term, and moderate in intensity. This impact could be reduced by installing signage along the corridors warning motorists of the presence of the trail and telling motorists and trail users to use caution. In addition, developing the trails so that there is a space between open lanes of traffic and the trails would reduce potential safety risks to a minor level.

All other impacts on human health and safety resulting from Alternative C are expected to be similar to those resulting from Alternative B. Refer to Section 4.3.4 of this EA for a discussion of these impacts. Implementation of Alternative C would eliminate the potential for adverse impacts on visitor health and safety due to lack of emergency response and hazard identification at certain sites, since all eligible Corinth Unit sites would be managed by the NPS under this alternative, and safety programs would be put in place at all sites.

Promotion and marketing of additional regional attractions by the NPS may result in increased visitation to those regional attractions. Increased visitation may result in an increase in the number of accidents/incidents occurring at those attractions. However, this increase would not be the result of the promotion of these sites; rather, it would be a natural and proportionate increase due to the increased amount of people in the area.

Waste Management

The impacts on waste management resulting from Alternative C are expected to be similar to those resulting from Alternative B. Refer to Section 4.3.4 of this EA for a discussion of these impacts. Impacts on waste management may be somewhat more beneficial under Alternative C with the inclusion of several additional sites and adjacent lands under NPS management procedures. No impacts on waste management would be expected to result from the use of the "corridors unit" under Alternative C. Promotion and marketing of additional regional attractions by the NPS may result in increased visitation to those regional attractions. Increased visitation may lead to an increase in the amount of solid waste generated in the region, although this increase is expected to be negligible. Existing facilities in the region have sufficient capacity to handle any additional solid waste generated at these sites. In addition, approved solid waste management practices would be followed at all times.

Visual Resources

The impacts on visual resources resulting from Alternative C are expected to be similar to those resulting from Alternative B. Refer to Section 4.3.4 of this EA for a discussion of these impacts. However, under Alternative C, additional sites would be added to the NPS management, and additional acreage would be added to several properties to protect important viewsheds and adjacent landscapes, including Contraband Camp, Corona College, Federal Lines 5/17, Federal Lines 5/19, Federal Lines 5/21, October Battlefield Phases I and II, Battery Robinett, and the Confederate Siegeworks. The protection of historic viewsheds and adjacent landscapes would benefit visual resources over the long-term beyond that described under Alternative B. In many cases, the viewsheds between various resources, as well as those between the resources and the City of Corinth and the railroad, are significant in that they provide the historic setting within which to interpret the Battle of Corinth. Therefore, the protection of historic viewsheds under Alternative C would result in an additional long-term, beneficial impact on visual resources. This impact would likely be moderate in intensity. In addition, protection of additional Corinth Unit sites through NPS management under Alternative C would ensure these sites and the visual quality at these sites is adequately maintained over the long-term and would ensure against incompatible, potentially damaging future developments on the sites. This would result in an additional, long-term, beneficial impact on visual quality under Alternative C than under Alternative B.

Promotion and marketing of additional regional attractions by the NPS should have no impact on the visual quality of the area. Development and promotion of a "corridors unit" under Alternative C would result in the presence of more people along the affected routes, as well as the installation of interpretive wayside markers and signage along the routes. Resulting impacts on the area's visual quality are not anticipated to be adverse. Rather, the presence of wayside markers and signage would encourage passersby to stop and look at the represented resource.

Environmental Justice/Protection of Children

The Environmental Justice and Protection Of Children impacts resulting from Alternative C are expected to be similar to those resulting from Alternative B. Refer to Section 4.3.4 of this EA for a discussion of these impacts. The beneficial impacts on minority and low income populations under Alternative C might increase a small amount in intensity over those projected to result from implementation of Alternative B. This increase would be due to the potential for increased support fostered by NPS in the community for African-American cultural heritage education and development and from the development of the additional, free-of-charge recreational opportunity provided by the "corridors unit."

4.4.4.1 Connected Actions and Cumulative Impacts

The cumulative impacts associated with implementation of Alternative C would be very similar to those described for Alternative B. Refer to Section 4.3.4.1 of this EA for this discussion. There is sufficient initiative in the community, outside of the NPS, supporting the development of visitor attractions and tourist marketing. Therefore, while NPS efforts to expand visitor

experience in the region would be helpful, these efforts would not result in a major increase in recreational opportunities or visitor use in the region.

NPS acquisition of additional sites and expanded acreage at several sites under Alternative C has the potential to cumulative affect regional land uses over the long-term. Commercial and/or residential developments in the area around the properties where additional acreage would be acquired would be restricted, which could permanently change future land use plans and patterns of the area.

Consideration of Impacts From Potential Future Developments

As discussed in Section 4.1.3 of this EA, if Alternative C is selected as the action to be taken, the NPS would likely undertake developments at each of the properties included in the Corinth Unit to enhance visitor experience. Such developments could include: improving access to the sites; constructing parking areas for cars, buses, and RVs; developing trails around the sites; installing interpretive wayside signs and markers; and providing informational pamphlets that describe the historic events. These developments have the potential to impact visitor use and experience over the short- and long-term. Since the types of developments that might be undertaken under this alternative are the same as those described under Alternative B, the potential impacts on the socioeconomic environment resulting from such developments would be the same. Refer to Section 4.3.4.1 for a discussion of these potential impacts. The only difference might accrue from a slightly higher increase in visitation to more of the sites over the long-term due to NPS management of all Corinth Unit sites, as well as the development and promotion of the "corridors unit" under Alternative C.

4.4.4.2 Conclusion

For the most part, impacts associated with implementation of Alternative C would be very similar to those resulting from Alternative B. Refer to Section 4.3.4.2 of this EA for a discussion of these impacts. Differences in impacts resulting from Alternative C would be the result of NPS acquisition of all of the potential Corinth Unit sties, as well as additional acreage at several sites, efforts to promote local and regional attractions, and development of a "corridors unit" to link Corinth to Shiloh NMP.

NPS acquisition of additional sites and expanded acreage at several sites would have additional long-term, moderate, beneficial impacts on visual resources and recreation through the protection of historic viewsheds that enhance interpretation of the resources at each of the sites and between sites and the protection of several additional sites against future development. While most existing land uses would likely not change on this additional acreage, NPS management would restrict future developments at and around the sites. This would protect Corinth Unit sites against the potential for development of incompatible land uses adjacent to NPS-owned sites. In addition, NPS acquisition of additional lands would increase the amount of land that is exempt from a particular jurisdiction's tax base, impacting local economics over the long-term.

Efforts to promote local and regional attractions may cause visitors to stay an additional night in the area, but would be more likely to cause those visitors to return to the area at a later time.

Therefore, any resulting increase in total visitor nights and local spending would be spread out over time, and would only result in a minor increase over Alternative B. If visitation to these other area attractions were to increase slightly over current levels as a result of NPS promotion, impacts on resources such as noise, visual quality, utilities, transportation, waste management, and human health and safety would merely be spread out over a larger area. However, the intensity of the impacts would not increase over that discussed for Alternative B.

Socially, implementation of Alternative C would have a greater beneficial impact on the local community than would Alternative B. Community support is in favor of Alternative C above all other alternatives, as evidenced by comments received during the scoping process.

NPS promotion and marketing of additional area attractions, as well as acquisition and management of all Corinth Unit sites, would have a beneficial impact on recreation. The duration and intensity of this impact would be influenced by the nature of the recreational opportunity promoted.

Development and promotion of a "corridors unit" under Alternative C would result in additional, noticeable impacts on transportation, recreation, and human health and safety than those described as resulting from Alternative B. Development of the "corridors unit" would likely result in an increase in the number of vehicles traveling on the roadways of the "corridors unit," and would provide more defined driving routes to access the various Corinth Unit sites. While more directed traffic may lead to increased congestion on the "corridors unit" roadways and an increased potential for damage to these roads, establishment and promotion of a "corridors unit" could help focus streetscape and traffic improvement efforts.

Development of the all-purpose trails within existing road rights-of-way of the "corridors unit" may create an additional safety problem for users of the trails. Since road rights-of-way run immediately adjacent to open lanes of traffic, hikers and bicyclists on the trail could be threatened by accidents with oncoming vehicles traveling on roadways. Without protective measures, this adverse impact would be long-term, and moderate in intensity.

The development of a "corridors unit" under Alternative C would expand recreational opportunities in the area by providing hiking and bicycling opportunities, and would help to make Shiloh NMP and the Corinth Unit of the NMP a recreation destination in addition to a historic Civil War resource. Development of the "corridors unit" would be expected to have a long-term, moderate, beneficial impact on recreation in the region.

The implementation of Alternative C would not significantly impact, and thus not impair, the socioeconomic environment or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.5 ALTERNATIVE D: EXPAND PROTECTION OF THE CORINTH UNIT TO INCLUDE CORE RESOURCES, ADDITIONAL LANDS PROVIDING HISTORIC CONTEXT, AND ACCOMMODATE OTHER APPROPRIATE MANAGEMENT CONSIDERATIONS

Under Alternative D, it is assumed that the new Corinth Civil War Interpretive Center has already been constructed at the Battery Robinett site, and is in operational phase. Specific impacts on natural resources, cultural resources, visitor use and experience, and the socioeconomic environment associated with the construction and operation of the new interpretive center were addressed in a separate EA. The environmental consequences of Alternative D result from the management of the Battery Robinett site, and all other properties determined to be eligible for inclusion into the Corinth Unit of Shiloh NMP, by the NPS, and efforts to be taken by the NPS to connect these sites to Shiloh NMP and to expand visitor experience in the region. Under Alternative D, additional acreage would be added to several properties above that under Alternative C in order to simplify law enforcement and recognition by others of Park lands. These properties include: Contraband Camp, Farmington Battlefield, Federal Lines 5/17, Federal Lines 5/19, Federal Lines 5/21, October Battlefield Phases I and II, Battery Robinett, Russell House Battlefield, and the Confederate Siegeworks. An additional 1,264 acres would be added under Alternative D.

4.5.1 Natural Resources

Under Alternative D, the NPS would take over management of all sites considered eligible for inclusion into the Corinth Unit of Shiloh NMP, as well as additional acreage at several properties to protect resources and viewsheds and simplify law enforcement. In accordance with NPS *Management Policies 2001*, the NPS would manage the natural resources on these lands to maintain them in an unimpaired condition, and to preserve fundamental physical and biological processes. A long-range comprehensive strategy for natural resources management would be developed and implemented for these lands to identify activities necessary to achieve the desired future conditions of the Park's natural resources (NPS, 2000e). Overall, a long-term, localized, moderate, beneficial impact on natural resources would result from NPS management of all sites considered eligible for inclusion into the Corinth Unit. Due to the greater amount of land protected by the NPS under this alternative, this beneficial impact on natural resources is anticipated to be greater than those resulting from Alternatives B or C.

As with Alternative C, the NPS would work with City, County, and State governments under Alternative D to develop a "corridors unit," consisting of automotive connections and all-purpose trails along existing roads in Mississippi and Tennessee, that connects Shiloh NMP with the properties within the Corinth Unit. The NPS' role in this development would be to encourage and promote use of the corridors and to provide interpretation along the corridors. Use of the corridors has the potential to affect natural resources along the routes.

Soils and Topography

Impacts on soils, topography, and prime farmlands resulting from Alternative D are expected to be similar to those resulting from Alternative C. Refer to Section 4.4.1 of this EA for a discussion of these impacts. However, due to the greater amount of land protected by the NPS under Alternative D, beneficial impacts on soils are anticipated to be greater than those resulting from Alternative C.

Water Resources

Impacts on water resources resulting from Alternative D are expected to be similar to those resulting from Alternative C. Refer to Section 4.4.1 of this EA for a discussion of these impacts. However, due to the greater amount of land protected by the NPS under Alternative D, beneficial impacts on water resources are anticipated to be greater than those resulting from Alternative C.

Air Quality

Impacts on air quality resulting from Alternative D are expected to be the same as those resulting from Alternative C. Refer to Section 4.4.1 of this EA for a discussion of these impacts.

Vegetation and Wildlife

Impacts on vegetation and wildlife resulting from Alternative D are expected to be similar to those resulting from Alternative C. Refer to Section 4.4.1 of this EA for a discussion of these impacts. However, due to the greater amount of land protected by the NPS under Alternative D, beneficial impacts on vegetation and wildlife are anticipated to be greater than those resulting from Alternative C.

Threatened and Endangered Species and Species of Concern

Impacts on threatened and endangered species and species of concern resulting from Alternative D would be the same as those described for Alternative C in Section 4.4.1 above. Refer to that section for this information.

4.5.1.1 Connected Actions and Cumulative Impacts

Cumulative impacts on natural resources associated with implementation of Alternative D would be the same as those associated with Alternative C. Refer to Section 4.4.1.1 of this EA for this discussion.

Consideration of Impacts From Potential Future Developments

Since the types of developments that might be undertaken under this alternative are the same as those described under Alternative C, the potential impacts resulting from such developments

would be the same. Refer to Section 4.4.1.1 for a discussion of these potential impacts on natural resources.

4.5.1.2 Conclusion

Direct, indirect, and cumulative impacts on natural resources associated with NPS management of all eligible sites under Alternative D would be similar to those resulting from Alternative C. Refer to Section 4.4.1.2 of this EA for a discussion of these impacts. However, due to the greater amount of land protected by the NPS under Alternative D, beneficial impacts on natural resources are anticipated to be greater than those resulting from Alternative C. The implementation of Alternative D would not significantly impact, and thus not impair, natural resources or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.5.2 Cultural Resources

The impacts on cultural resources resulting from Alternative D are expected to be similar to those resulting from Alternative C. Refer to Section 4.4.4 of this EA for a discussion of these impacts. However, due to the greater amount of land protected by the NPS under Alternative D, beneficial impacts on cultural resources are anticipated to be greater than those resulting from Alternative C. In addition, extending the boundaries of several sites to identifiable lines, including roads, rail lines, and other topographic features, to achieve more easily manageable and enforceable boundaries would further benefit cultural resources by potentially reducing vandalism and other illegal activities.

4.5.2.1 Connected Actions and Cumulative Impacts

Cumulative impacts on cultural resources associated with implementation of Alternative D would be the same as those associated with Alternative C. Refer to Section 4.4.2.1 of this EA for this discussion.

<u>Consideration of Impacts From Potential Future Developments</u>

As discussed in Section 4.1.3 of this EA, if Alternative D is selected as the action to be taken, the NPS would likely undertake developments at each of the properties included in the Corinth Unit to enhance visitor experience. Since the types of developments that might be undertaken under this alternative are the same as those described under Alternatives B and C, the potential impacts on cultural resources resulting from such developments would be the same. Refer to Section 4.3.2.1 for a discussion of these potential impacts on cultural resources.

4.5.2.2 Conclusion

Direct, indirect, and cumulative impacts on cultural resources associated with implementation of Alternative D would be similar to those resulting from Alternative C. Refer to Section 4.4.2.2 of this EA for a discussion of these impacts. However, due to the greater amount of land protected by the NPS under Alternative D, beneficial impacts on cultural resources are anticipated to be greater than those resulting from Alternative C. In addition, extending the boundaries of several sites to identifiable lines would further benefit cultural resources by increasing the effectiveness of law enforcement and management activities and potentially reducing vandalism and other illegal activities.

The implementation of Alternative D would not significantly impact, and thus not impair, cultural resources or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.5.3 Visitor Use and Experience

The impacts on visitor use and experience resulting from NPS management under Alternative D are expected to be very similar to those resulting from Alternative C, discussed in Section 4.4.3 of this EA. However, extending the boundaries of several sites to identifiable lines, including roads, rail lines, and other topographic features, under Alternative D to achieve more easily manageable and enforceable boundaries could further benefit visitor use and experience. The resultant improved law enforcement at the sites would potentially reduce vandalism and other illegal activities, thereby reducing adverse effects on visitor experience. In addition, more defined Park boundaries could increase public recognition of Park lands, and historic viewsheds would be more fully protected under this alternative.

4.5.3.1 Connected Actions and Cumulative Impacts

The cumulative impacts associated with implementation of Alternative D would be the same as those described for Alternative C. Refer to Section 4.4.3.1 for this discussion.

<u>Consideration of Impacts From Potential Future Developments</u>

As discussed in Section 4.1.3 of this EA, if Alternative D is selected as the action to be taken, the NPS would likely undertake developments at each of the properties included in the Corinth Unit to enhance visitor experience. Since the types of developments that might be undertaken under this alternative are the same as those described under Alternative C, the potential impacts on visitor use and experience resulting from such developments would be the same. Refer to Section 4.4.3.1 for a discussion of these potential impacts.

4.5.3.2 Conclusion

The impacts on visitor use and experience resulting from NPS management under Alternative D are expected to be very similar to those resulting from Alternative C. However, extending the boundaries of several sites to identifiable lines, including roads, rail lines, and other topographic features, under Alternative D to achieve more easily manageable and enforceable boundaries could further benefit visitor use and experience. The resultant improved law enforcement at the sites would potentially reduce vandalism and other illegal activities, thereby reducing adverse effects on visitor experience. In addition, more defined Park boundaries could increase public recognition of Park lands, and historic viewsheds would be more fully protected under this alternative.

The implementation of Alternative D would not significantly impact, and thus not impair, opportunities for visitor use and experience or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

4.5.4 Socioeconomic Environment

Population, Economy, and Social Conditions

The impacts on population, economics, and social conditions resulting from Alternative D are expected to be very similar to those resulting from Alternative C, discussed in Section 4.4.4 of this EA. The only difference anticipated is that Alternative D would have greater beneficial impacts on social conditions due to improved law enforcement capabilities. In addition, under Alternative D, there would be greater recognition by others of Park verses private lands, reducing social conflicts and improving public awareness.

Transportation

All impacts on transportation resulting from NPS management under Alternative D are expected to be the same as those resulting from Alternative C. Refer to Section 4.4.4 of this EA for a discussion of these impacts.

Land Use

The impacts on land use resulting from Alternative D are expected to be the similar to those resulting from Alternative C. Refer to Section 4.4.4 of this EA for a discussion of these impacts. However, under Alternative D, additional acreage would be added to several properties to protect important viewsheds and adjacent landscapes and to simplify law enforcement and management. Alternative D, additional acreage would be added to several properties above that under Alternative C in order to simplify law enforcement and recognition by others of Park lands. These properties include: Contraband Camp, Farmington Battlefield, Federal Lines 5/17, Federal Lines 5/19, Federal Lines 5/21, October Battlefield Phases I and II, Battery Robinett,

Russell House Battlefield, and the Confederate Siegeworks. The boundaries of these properties would be extended to visually identifiable lines, including roads and other topographic features, which would aid in boundary line recognition. Although land uses on the additional acreage are not likely to change much from existing uses after NPS acquisition, NPS acquisition would restrict future commercial and/or residential development on these lands. This would further protect Corinth Unit sites against the potential for development of incompatible land uses adjacent to NPS-owned sites.

NPS acquisition of the additional 1,264 acres (above Alternative C) would permanently convert ownership of this land from private to public, which would add to impacts on the affected jurisdiction's tax base. As stated in Section 4.3.4, land owned by the NPS is tax exempt and PILTs are made.

Utilities and Public Services

The impacts on utilities and public services resulting from Alternative C are expected to be the very similar to those resulting from Alternative B. Refer to Section 4.3.4 of this EA for a discussion of these impacts.

Noise

All impacts on noise resulting from NPS management under Alternative D are expected to be the same as those resulting from Alternative C. Refer to Section 4.4.4 of this EA for a discussion of these impacts.

Recreation

Impacts on recreation resulting from Alternative D would be very similar to those resulting from Alternative C. Refer to Section 4.4.4 of this EA for a discussion of those impacts.

Human Health and Safety

Impacts on human health and safety resulting from Alternative D are expected to be very similar to those resulting from Alternative C. Refer to Section 4.4.4 of this EA for a discussion of these impacts. However, extending the boundaries of several sites to identifiable lines under Alternative D would improve the management and law enforcement capabilities of the Park, which could further benefit human health and safety. Improved law enforcement at the sites could reduce the potential for crime at those locations.

Waste Management

All impacts on waste management resulting from NPS management under Alternative D are expected to be the same as those resulting from Alternative C. Refer to Section 4.4.4 of this EA for a discussion of these impacts.

Visual Resources

The impacts on visual resources resulting from Alternative D are expected to be very similar to those resulting from Alternative C. Refer to Section 4.4.4 of this EA for a discussion of these impacts. However, under Alternative D, the boundaries of several properties would be extended beyond Alternative C to visually identifiable lines, such as roads and other topographic features, giving a more defined and evident appearance to Park property. The resultant improved law enforcement at the sites would potentially reduce vandalism and other illegal activities that could damage or destroy resources, thereby reducing adverse effects on visual resources at individual sites. In addition, more defined Park boundaries could increase public recognition of Park lands, and historic viewsheds would be more fully protected under this alternative.

Environmental Justice/Protection of Children

The Environmental Justice and Protection of Children impacts resulting from Alternative D are expected to be the same as those resulting from Alternative C. Refer to Section 4.4.4 of this EA for a discussion of these impacts.

4.5.4.1 Connected Actions and Cumulative Impacts

The cumulative impacts associated with implementation of Alternative D would be the same as those described for Alternative C. Refer to Section 4.4.4.1 of this EA for this discussion.

Consideration of Impacts From Potential Future Developments

Since the types of developments that might be undertaken under this alternative are the same as those described under Alternative C, the potential impacts on the socioeconomic environment resulting from such developments would be the same. Refer to Section 4.4.4.1 for a discussion of these potential impacts.

4.5.4.2 Conclusion

For the most part, socioeconomic impacts associated with implementation of Alternative D would be the same as those resulting from Alternative C. Refer to Section 4.4.4.2 of this EA for a discussion of these impacts. Differences in impacts resulting from Alternative D would be the result of NPS acquisition of additional acreage at several potential Corinth Unit sites for the simplification of law enforcement and management.

Alternative D would have greater beneficial impacts on social conditions, human health and safety, and visual resources at the extended sites than Alternative C due to improved law enforcement capabilities, which could reduce damaging illegal activities and crime. In addition, under Alternative D, there would be greater recognition by others of Park verses private lands, reducing social conflicts and improving public awareness, and historic viewsheds would be more fully protected under this alternative.

Extending the boundaries of several properties to visually identifiable lines, including roads and other topographic features, would aid in boundary line recognition. Although land uses on the additional acreage are not likely to change much from existing uses after NPS acquisition, NPS acquisition would restrict future commercial and/or residential development on these lands, which would further protect Corinth Unit sites against the potential for development of incompatible land uses adjacent to NPS-owned sites. However, NPS acquisition of the additional 1,264 acres (above Alternative C) would permanently convert ownership of this land from private to public, which would add to impacts on the affected jurisdiction's tax base.

The implementation of Alternative D would not significantly impact, and thus not impair, the socioeconomic environment or related values that are (1) necessary to fulfill specific purposes identified in the enabling legislation of Shiloh NMP and the Corinth Unit, (2) key to the natural or cultural integrity of the Park or its opportunities, and (3) identified as a goal in the Park's GMP or other NPS planning documents.

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