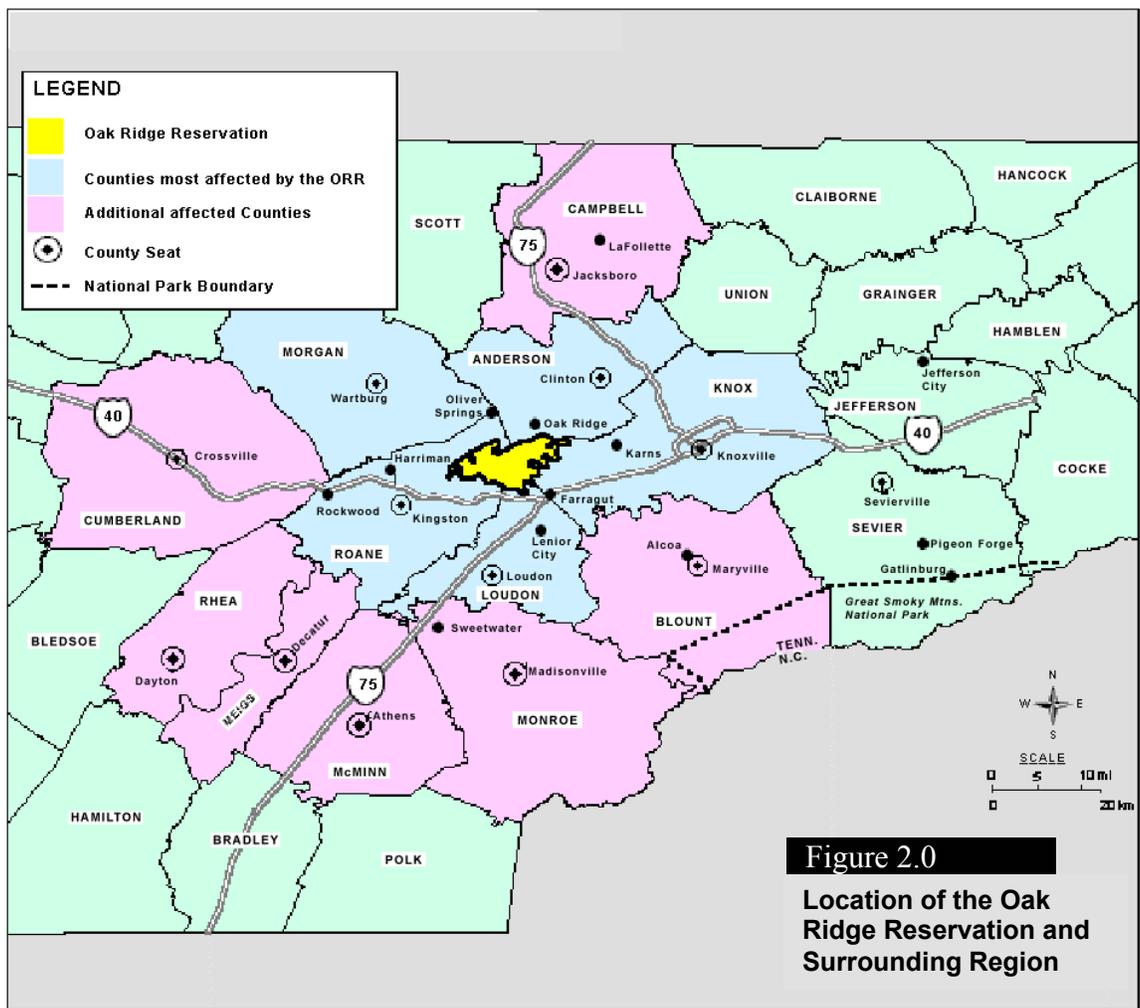


2.0 REGIONAL CONTEXT END STATE DESCRIPTION

2.1 Physical and Surface Interface

The ORR is located in east Tennessee in the central portion of the Southern Appalachian region. East Tennessee includes portions of three of the distinct physiographic regions that make up the Southern Appalachian region: the Blue Ridge Mountains, the Valley and Ridge Physiographic Province, and the northern portions of the Cumberland Plateau. The ORR lies within the western portion of the Valley and Ridge Province, a rolling to hilly terrain marked by long linear ridges and drained by the Tennessee River. The ridge and valley topography provides security and isolation for the site but also constrains the land use because of moderate to severe slopes. Figure 2.0 depicts the location of the ORR in relation to surrounding counties within east Tennessee.



The 33,749-acre ORR is located almost entirely within the city limits of Oak Ridge, Tennessee, in Roane and Anderson Counties, approximately 15 miles west-northwest of Knoxville. Residential and commercial areas of Oak Ridge adjoin the ORR on the north and east. The Clinch River, a tributary of the Tennessee River, bounds ORR on the south. Melton Hill Dam, located on the Clinch River south of ORNL, impounds most of the river on the southern boundary of the ORR to form Melton Hill Reservoir. The Clinch River flows into Watts Bar Reservoir downstream of Melton Hill Dam. All water that drains from the ORR enters the Clinch River and subsequently the Tennessee River.

The ORR is located within 50 miles of three major interstate highways. Interstate 40 (I-40) south of the ORR, is an east-west highway that extends from North Carolina to California. Interstate 75 (I-75), east and south of ORR is a north-south highway that extends from Michigan to Florida. Interstate 81 (I-81) is a northeast-southwest highway that extends from New York to Tennessee and connects with I-40 east of Knoxville. A new northern bypass, I-475, also may be constructed in the future near the ORR, but the details have yet to be finalized.

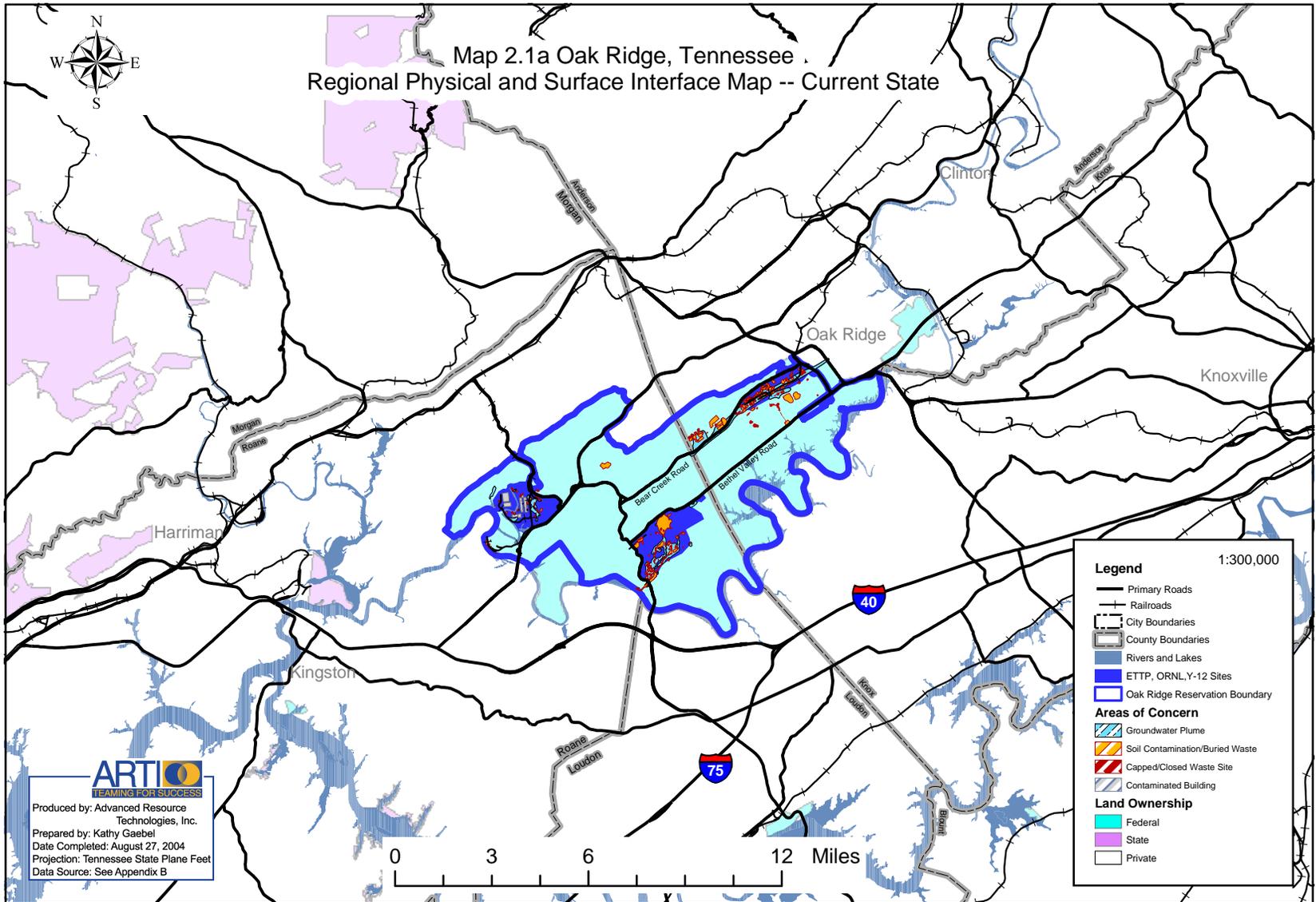
Figures 2.1a and 2.1b depict the physical and surface interface features of the region surrounding the ORR for the current state and end state conditions, respectively. No differences between current and end state conditions outside the ORR have been identified.

2.2 Human and Ecological Land Use

The socioeconomic region of influence for the ORR consists of Anderson, Knox, Roane, Loudon, and Morgan counties in east Tennessee. These counties are home to over 90% of all ORR employees, comprise a total area of 1.3 million acres, and have a combined population of over 560,000. Oak Ridge and Knoxville are the two largest metropolitan areas within a 50-mile radius, with a 2000 population of 27,387 and 173,890, respectively. The total 2000 census population within a 50-mile radius of ORR was approximately 1 million. Unincorporated areas surrounding the ORR contain rural population centers in Poplar Creek Valley to the northwest, Sugar Grove Valley to the west, and along the Watts Bar and Melton Hill Reservoirs to the west and south, respectively.

Commercial forestry is the leading land use in the five-county area, followed by agricultural, residential, and recreational uses. In general, agricultural land use is declining as residential, commercial, and industrial uses increase. Knox County and Anderson County are the two most highly developed counties in the region of influence, and Morgan County is the least developed. Except for residential and commercial development in the city of Oak Ridge and the Solway community, land use adjacent to the ORR is predominantly rural, consisting of woodlands, small farms, and residences. The city of Oak Ridge has residential areas primarily along the northern and eastern boundaries of the ORR, and some Roane County residents have homes adjacent to the western boundary.

Map 2.1a Oak Ridge, Tennessee
Regional Physical and Surface Interface Map -- Current State



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Date Completed: August 27, 2004
Projection: Tennessee State Plane Feet
Data Source: See Appendix B

Legend 1:300,000

- Primary Roads
- Railroads
- - - City Boundaries
- - - County Boundaries
- Rivers and Lakes
- ETPP, ORNL, Y-12 Sites
- Oak Ridge Reservation Boundary

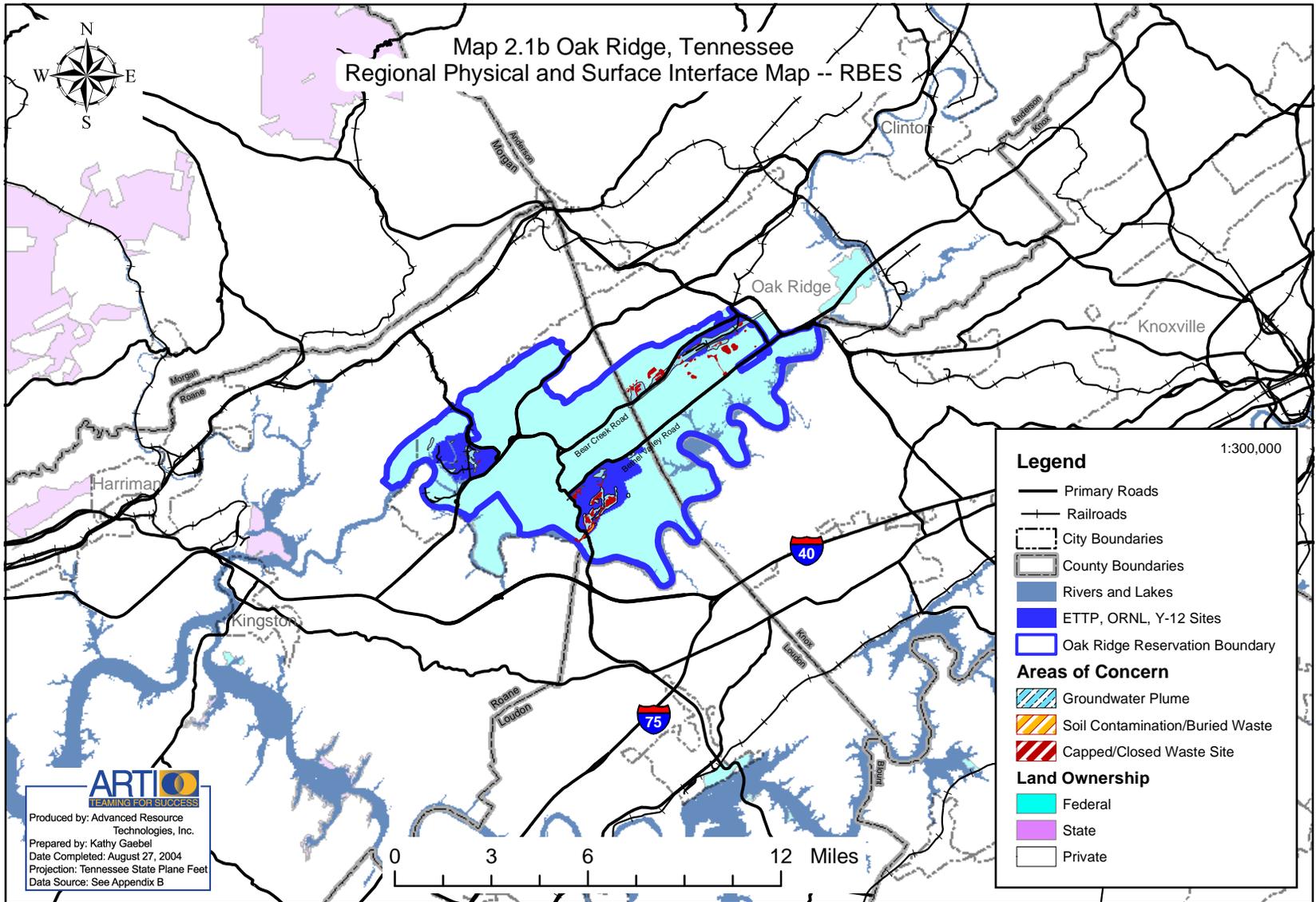
Areas of Concern

- ▨ Groundwater Plume
- ▨ Soil Contamination/Buried Waste
- ▨ Capped/Closed Waste Site
- ▨ Contaminated Building

Land Ownership

- Federal
- State
- Private

Map 2.1b Oak Ridge, Tennessee
Regional Physical and Surface Interface Map -- RBES



Legend 1:300,000

- Primary Roads
- Railroads
- - - City Boundaries
- - - County Boundaries
- Rivers and Lakes
- ETPP, ORNL, Y-12 Sites
- Oak Ridge Reservation Boundary

Areas of Concern

- ▨ Groundwater Plume
- ▨ Soil Contamination/Buried Waste
- ▨ Capped/Closed Waste Site

Land Ownership

- Federal
- State
- Private

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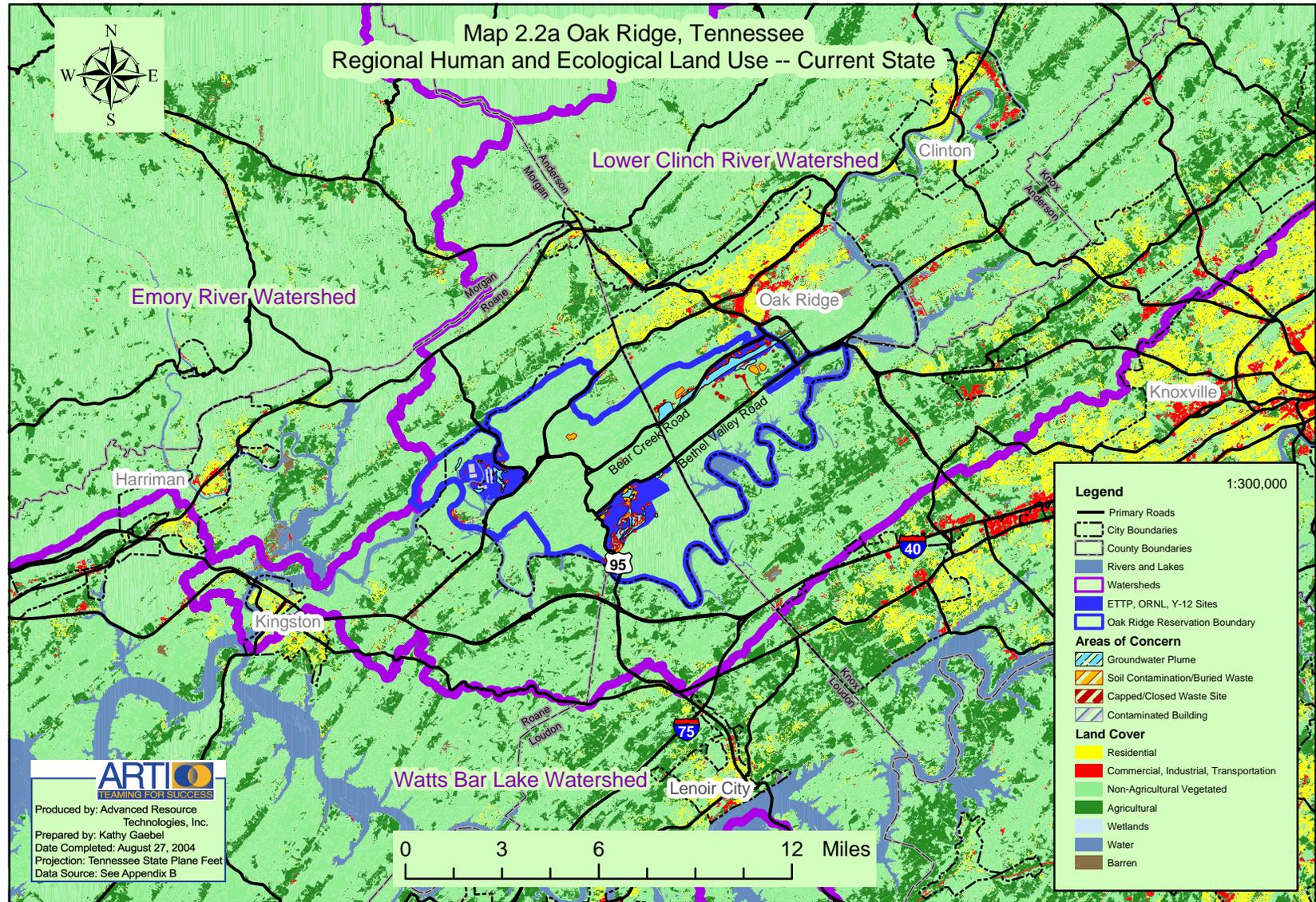
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0 3 6 12 Miles

The Southern Appalachian region is recognized as one of the most biologically diverse temperate areas in the United States, hosting more than 20,000 species of plants and animals. The ORR forms an important part of this ecosystem because of its relative isolation from widespread impacts since its formation in the 1940s. While other areas of the Valley and Ridge Province became increasingly developed and impacted by a growing population, most of the ORR remained undeveloped. The National Environmental Research Park within the ORR is a major component of the Southern Appalachian Biosphere Reserve. The Great Smoky Mountains National Park also is part of the Southern Appalachian Biosphere Reserve.

Figures 2.2a and 2.2b depict the human and ecological land use features of the region surrounding the ORR under current conditions and end state conditions, respectively. No differences between the current and end state conditions outside the ORR have been identified.

Map 2.2a Oak Ridge, Tennessee
Regional Human and Ecological Land Use -- Current State



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Legend 1:300,000

- Primary Roads
- - - City Boundaries
- - - County Boundaries
- Rivers and Lakes
- Watersheds
- ETPP, ORNL, Y-12 Sites
- Oak Ridge Reservation Boundary

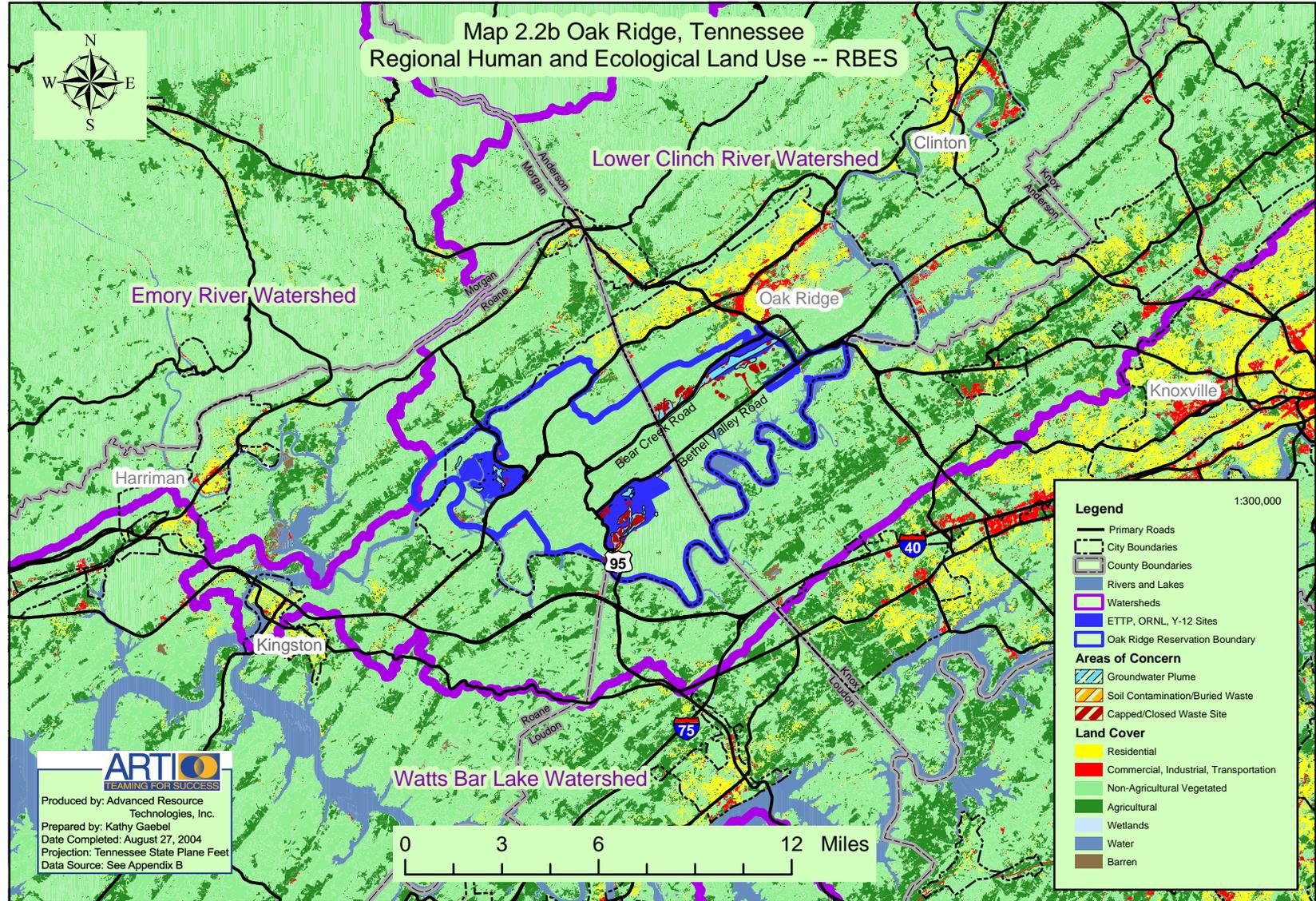
Areas of Concern

- Groundwater Plume
- Soil Contamination/Buried Waste
- Capped/Closed Waste Site
- Contaminated Building

Land Cover

- Residential
- Commercial, Industrial, Transportation
- Non-Agricultural Vegetated
- Agricultural
- Wetlands
- Water
- Barren

Map 2.2b Oak Ridge, Tennessee
Regional Human and Ecological Land Use -- RBES



1:300,000

Legend

- Primary Roads
- - - City Boundaries
- ▭ County Boundaries
- ▭ Rivers and Lakes
- ▭ Watersheds
- ▭ ETTP, ORNL, Y-12 Sites
- ▭ Oak Ridge Reservation Boundary

Areas of Concern

- ▨ Groundwater Plume
- ▨ Soil Contamination/Buried Waste
- ▨ Capped/Closed Waste Site

Land Cover

- ▭ Residential
- ▭ Commercial, Industrial, Transportation
- ▭ Non-Agricultural Vegetated
- ▭ Agricultural
- ▭ Wetlands
- ▭ Water
- ▭ Barren

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