
2.0 SRS REGIONAL CONTEXT END STATE VISION DESCRIPTION

2.1 Physical and Surface Interface

See Appendix A, Regional and Site Maps, for maps that support this SRS Regional Context End State Vision Description.

2.1.1 Administrative

SRS is located in the Central Savannah River Area (CSRA), which contains nine counties in South Carolina (Aiken, Allendale, Bamberg, Barnwell, and Edgefield) and Georgia (Burke, Columbia, McDuffie, and Richmond). (See Map 2.1., Regional Physical and Surface Interface Map – Current State in Appendix A, *Regional and Site Maps*.) While there is no precise definition of the boundaries of the CSRA, for the purpose of this document, CSRA refers to those counties in which activities, commerce, and population would be seriously affected if a facility of SRS's magnitude did not exist.

The site's southwestern boundary is formed by the Savannah River, a historical transportation corridor and the recipient of most of the area's tributaries. The site includes portions of Aiken, Allendale, and Barnwell counties.

The Savannah River Site (SRS) is owned by the Department of Energy (DOE), a federal agency. Adjacent land is owned by private property owners, such as individual and corporate landowners.

Major governmental jurisdictions in the area include: Aiken, Allendale, Bamberg, Barnwell, Bath, Belvedere, Blackville, Denmark, Fairfax, New Ellenton, North Augusta, and Williston in South Carolina; and Appling, Augusta, Evans, Grovetown, Martinez, Thomson, and Waynesboro in Georgia.

Other federal agencies also have an impact on the region such as the U.S. Department of Agriculture, the Agricultural Services Center,

USDA United States Forest Service - Savannah River (USFS-SR), the Agricultural Stabilization and Conservation Service, the Farmers Home Administration, and the Natural Resources Conservation Service provide significant support for farmers and farm-related activities. The Departments of Commerce, Defense, Health and Human Services, Interior, Justice, Labor, and Transportation also have offices in the region.

The 50-mile radius, the basis for determining the region, is the geographical area required by the Nuclear Regulatory Commission (NRC) to have a Safety Analysis Report, which must include population information. Only the work force required to accomplish DOE's mission and a restricted number of visitors have "limited access" to the SRS.

2.1.2 Watersheds

A watershed is an area that drains to a common waterway, such as a stream, lake, estuary, wetland, or the ocean. For the past five years, the Environmental Protection Agency (EPA) has joined others to promote the watershed approach nationally to further restore and maintain the physical, chemical and biological quality of our nation's waters. In particular, EPA has been working with federal, state, and tribal governments to tailor activities and services to local watersheds and their groups.

The watershed approach is made up of three key components:

1. Geographic Focus: Watersheds are nature's boundaries. They are areas that drain to surface water bodies. A watershed generally includes lakes, rivers, estuaries, wetlands, streams, and the surrounding landscape. Groundwater recharge areas are also considered.
 2. Continuous Improvement Based on Sound Science: Sound scientific data, tools, and
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techniques are critical to the process.

Actions taken include characterizing priority watershed problems and solutions, developing action plans and evaluating their effectiveness within the watershed.

3. Partnerships / Stakeholder Involvement:

Watersheds transcend political, social, and economic boundaries. Therefore, it is important to involve all the affected interests in designing and implementing goals for the watershed. Watershed teams may include representatives from all levels of government, public interest groups, industry, academic institutions, private landowners, concerned citizens, and others.

The CSRA is comprised of 13 watersheds as listed below.

South Carolina Watersheds in the CSRA

Brier
Broad St. Helene
Edisto
Lower Savannah
Middle Savannah
North Fork Edisto
Salkehatchie
Saluda
South Fork Edisto
Stevens

Georgia Watersheds in the CSRA

Brier
Little
Middle Savannah
Upper Ogeechee
Upper Savannah

SRS is comprised of seven smaller watersheds as depicted on Map 2.3, *Regional Watershed Map – Current State* in Appendix A, *Regional and Site Maps*.

2.1.3 Transportation and Infrastructure

South Carolina is serviced by five U. S. primary routes: I-20, I-26, I-77, I-85, and I-95. I-20 is

closest to SRS and is approximately 30 miles from the center of the site. U. S. Highway 278 crosses the northern section of SRS. In addition, U. S. Highway 1 passes through Aiken and Augusta, and U. S. Highway 301 passes through Allendale. Both highways extend to within 20 miles of the center of the site.

Offsite access to SRS is provided by four South Carolina primary roads: SC 125, the main access route from the Augusta/North Augusta/Allendale region; SC 19, which provides access to SRS from the Aiken/New Ellenton region; SC 39, which provides access from the Williston region; and SC 64, which provides access from the Barnwell region.

CSX Transportation and Norfolk Southern Corporation provide railroad service to the CSRA. Both of these railroads have access throughout the United States, Canada, and Mexico.

Commuter air service and jet service to major United States cities is provided by two commercial airports in the vicinity of SRS. Bush Field in Augusta is approximately 21 miles from the site; Columbia Metro Airport in Columbia, South Carolina, is approximately 56 miles away from the site.

There are approximately 120 public water systems in the region. All of the county and municipal water supply systems obtain their water from the Dublin/Midville aquifer system. The region has 15 major public sewage treatment systems.

For regional landfill needs, the Three Rivers Solid Waste Authority (TRSWA) is the mechanism to meet the requirements of the State Solid Waste Policy and Management Act. TRSWA provides waste management services to local governments in an area consisting of Aiken, Allendale, Bamberg, Barnwell, Calhoun, Edgefield, McCormick, Orangeburg, and Saluda counties. This regional landfill site assists these

counties in the placement of GOFER (Give Oil for Energy Recovery) sites, white goods (metal) cleanup and removal, recycling assistance, and the cleanup of waste tires. The Three Rivers Landfill is located off of Highway 125 on property owned by the Department of Energy at the Savannah River Site, and it is leased to the TRSWA. Administration and management of the TRSWA is provided by the Lower Savannah Council of Governments. In addition, there are nine local sanitary landfills in the area.

Since 1999, 35% of South Carolina's electric power has been generated by nuclear reactors; 33% is by coal; 19% by hydroelectric, with some electricity generated by gas and petroleum power plants. In the South Carolina counties located near the site, the South Carolina Electric and Gas Company (SCE&G) provides power. The nearest power generation facility to SRS is in Beech Island, SC. The Erquhart Station combines cycle combustion and coal-fired steam turbines to produce power for SCE&G.

As of 2002, for Georgia, 39% of the power is generated by coal power plants; 12% by nuclear power plants; 11% by hydroelectric power plants with balance of electricity is generated by gas and petroleum power plants. Plant Vogtle, located across the Savannah River in Georgia, is a nuclear power plant owned by Georgia Power Company.

Below is a list of the interstate natural gas pipelines located in the CSRA:

- Dixie Pipeline
- South Carolina Pipeline Corporation
- Southern Natural Gas Company

2.1.4 Surface Contamination

The Savannah River is used primarily to support industry, recreation, and natural habitat development. This river is fed by numerous streams, including five major SRS streams: Upper Three Runs, Fourmile Creek, Pen Branch, Steel Creek, and Lower Three Runs Creek. SRS

is situated in three major resource areas: the Southern Piedmont, the Carolina and Georgia Sand Hills, and the Atlanta Coastal Plan. These characteristics are typical of land forms that resulted from of historical marine sediment deposits in central and eastern Georgia. There are no mountains in the general area.

Because of the land's characteristics and the site's proximity to the Savannah River, soil conservation, flood plain management, and wetland issues play a large part in local planning. For a long time, area residents have recognized the value of the Savannah River and its environs, and much of their recreational life centers around water activities. Thurmond Lake (1200 miles of shoreline), other lakes and the Savannah River offer swimming, fishing, camping, water skiing, boating and hiking.

To maintain water quality for industrial, recreational, and residential use, development plans and monitoring programs are essential for both the functional integrity of the area and the safety, health, and property of the citizens. The South Carolina Department of Health and Environmental Control (SCDHEC) is responsible for SRS's monitoring programs. However, the State of Georgia has raised concerns that groundwater contaminated with tritium might migrate from SRS through aquifers underlying the Savannah River into Georgia by what is referred to as trans-river flow. SRS sampled wells in Burke and Screven counties in 2000, and SRS and the Georgia Department of Natural Resources conducted joint sampling in Burke and Screven counties in 2001 and 2002. The overall trend of the data showed a continual gradual decline in tritium levels.

Both the Savannah River and aquifers in the area provide an abundant supply of water. Groundwater is used throughout the CSRA as a domestic, municipal, industrial, and agricultural water supply. The Savannah River is used as a

drinking water supply for some residents downriver of SRS. The City of Savannah Industrial and Domestic Water Supply Plant intake at Port Wentworth is approximately 130 river miles from SRS; the Beaufort-Jasper Water Treatment Plant intake, near Beaufort, South Carolina, is approximately 120 river miles from SRS.

Most of the domestic supply of groundwater within the CSRA is produced from the Floridian aquifer system, while the remaining supplies are produced primarily from the Cretaceous age Dublin/Midville aquifer system. The groundwater production from the prolific Dublin/Midville aquifer system is about 50 million gallons per day and satisfies SRS industrial uses and drinking water consumption for the site workforce.

2.1.5 Hazard Areas of Concern

There are four National Priority List (NPL) or Superfund sites in the CSRA as shown below:

Name	Listed	Delisted
Savannah River Site	11/21/89	2025
Helena Chemical Company (Allendale County, SC)	2/21/90	N/A
Shuron Plan (Barnwell County, SC)	12/23/96	N/A
Monsanto Corporation (Richmond County, GA)	9/21/84	3/9/98

Table 2.1 CSRA National Priority List Sites

Local concerns for hazards mainly consist of pollution from local industries into the air and/or the Savannah River. (See Section 2.2.1, Land Uses for more details.)

2.1.6 Differences Between Current State and 2025 end State

There are no known major differences between the current regional state and the year 2025 in

the areas of administration, transportation and infrastructure, surface contamination or hazard areas of concern.

2.2 Human and Ecological Land Use

2.2.1 Land Use

Land within the CSRA centers around residential, industrial, commercial, transportation, recreation, and agricultural categories. Upland pine and wetland forests comprise a large percentage of the area. Nonforested wetlands occur primarily along Thurmond Lake and the Savannah River.

Various industrial, manufacturing, medical, and farming operations are conducted near the site. Major industrial manufacturing facilities in the area include textile mills, polystyrene foam and paper product plants, chemical processing facilities, a commercial, low-level radioactive landfill and a commercial nuclear power plant. A variety of crops is produced on area farms, such as forest products, cotton, soybeans, corn, peaches, grapes, and small grains.

Current major uses for land bordering SRS are shown below. (See Map 2.2, *Regional Human and Ecological Land Use – Current State* in Appendix A, *Regional and Site Maps*.)

- Agriculture – while some livestock, horse farming, and vegetable farming takes place, most of the land is used to produce forest products (for pulp and paper, telephone poles, pine straw)
- Light industry - There is currently one 1,500 acre industrial park adjacent to SRS. Bordering this industrial center is the Duratek Low Level Radioactive Waste Disposal Facility. Also in close proximity is Plant Vogtle, a nuclear power facility, directly across the Savannah River from SRS. To ease the burden of the region, SRS has agreed to permit a solid waste landfill within its borders. This facility, the Three

Rivers Landfill, is operating under the authority of a fifty-year lease administered by the Lower Savannah Council of Governments.

- **Light residential** – Most of housing on this land is associated with agriculture, however some houses and manufactured homes border the site (small neighborhoods or individual homes).
- **Recreation** – Wildlife is plentiful since over 90% of SRS is not used for industrial purposes, thus extensive outdoor sports activities occur next to SRS. These activities include hunting, fishing, hiking and bird watching.

The topography and other existing physical features and conditions of the area greatly influence land development decisions and policies. Because of the soil types and lack of steep slopes, the area is well-suited for both agriculture and urban development.

Manufacturing and government account for the largest portion of employment in the region (44.8 percent). Augusta, the Fort Gordon Military Reservation, and SRS comprise a significant amount of total developed area. SRS's significance as an employer is only second in the region to Ft. Gordon, Georgia, twenty-five miles from the Savannah River Site. However, even with fewer employees, SRS' economic impact is greater. Further, SRS is the largest manufacturing employer in South Carolina.

Forest lands, which dominant land cover in the CSRA, are divided between bottomland hardwoods/deciduous, cypress/tupelo, and pine, which is the most dominant. Although forest lands occur throughout the area, the greatest concentration of pine is in the northwest portion, with hardwood/deciduous and cypress/tupelo forests primarily in stream valleys.

2.2.2 Human Activities

Below are listed the populations of the CSRA counties:

Populations (as of 2001)	
County	Population
<u>South Carolina</u>	
Aiken	143,905
Allendale	11,045
Bamberg	16,393
Barnwell	23,525
Edgefield	24,470
<u>Georgia</u>	
Burke	22,591
Columbia	92,427
McDuffie	21,286
Richmond	198,366

Table 2.2 CSRA County Populations

Unlike many Department of Energy sites, SRS is significantly distant from local populations. SRS is approximately 22.5 miles southeast of Augusta and 19.5 miles south of Aiken, the nearest population centers.

2.2.3 Differences Between Current State and 2025 End State

From extensive discussions and review of draft and final growth management, transportation and economic development plans for the region, SRS planners can say with assurance that there are no major changes which would affect site missions in the next 20 years. While normal growth is expected in metropolitan counties in the region or in the populated regions of counties around SRS, the predominant land uses in the areas adjacent to SRS are expected to remain the same.

Land uses adjacent to SRS are not expected to significantly change during the "twenty year planning timeframe" of the *End State Vision*. A survey of land use plans in the region revealed that unless SRS obtains missions beyond what is

currently planned, there could be a downturn in regional growth. However, within the context of the twenty-year planning timeframe, little change in population, economy, or land is anticipated.

There may be changes in the CSRA due to new transportation corridors, relocation of businesses to the area, etc. However, it is not expected that these activities will significantly affect SRS or the lands adjacent to it. This future growth will occur nearer to population centers (where the markets and workers are) and transportation corridors (to more efficiently move raw materials and finished goods). Finally, because of the abundance of land for growth and other land uses, there is little expectation that SRS land or that near it will be in high demand in the future, thus necessitating new infrastructure and other upgrades in the immediate area.

2.3 Regional Planning Interface

SRS has maintained a close relationship with planning groups, local governments, Councils of Government, and economic development organizations. Site planners have been active in sharing site plans and site planning techniques with these groups. They also provide tours and information and local planners have reciprocated these activities. This close interaction has produced strong cooperation, which has resulted in site and regional planners being current on each other's plans, thus eliminating the need for extensive education whenever new plans are created.

Many regional planning groups were contacted during the development of this End State Vision to assess regional planning activities. These groups include the following:

South Carolina

- Aiken County Planning Department
- Aiken-Edgefield Economic Development Partnership
- City of Aiken Planning Department
- Lower Savannah Council of Governments (Responsible for planning for six counties in South Carolina – all within 70 miles of SRS - Aiken, Allendale, Bamberg, Barnwell, Calhoun, and Orangeburg counties)
- North Augusta Department of Economic Development
- The Southern Carolina Regional Development Alliance (Allendale, Barnwell, Bamberg and Hampton counties), formerly Tri-County Alliance of Allendale, Barnwell, and Bamberg counties)

Georgia

- Augusta-Metro Chamber of Commerce (Includes Columbia and Burke counties)
 - Augusta-Richmond County Planning Department
 - Central Savannah River Area Regional Development Center (supports 14 Georgia counties in the region – including those in the SRS vicinity – Augusta-Richmond, Burke and Columbia)
 - Columbia County Planning Department
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