



Water use in the coastal area is projected to increase by about 136 Mgal/d from 2000 to 2035. Of the total 136 Mgal/d growth, about 94 Mgal/d is from groundwater sources and 42 Mgal/d is from surface-water sources.

In the SRS area, the USGS—in cooperation with the USDOE—developed a digital groundwater flow model to assess the potential for groundwater to flow from the SRS beneath the Savannah River and into Georgia (transriver flow) for a variety of pumping scenarios during 2002–2020 (Cherry, 2004). The SRS study area includes three counties in South Carolina and five counties in Georgia with a total estimated groundwater use of 115 Mgal/d during 2002. Future public-supply water use was estimated using projected population growth from a variety of sources multiplied by per capita usage on a county-by-county basis. During 2002–2020, public-supply groundwater use in the SRS area was projected to increase by 5 Mgal/d, for a total withdrawal of 39 Mgal/d.

Future irrigation use was estimated by examining past irrigation practices during a 20-year period (Fanning, 2003) and projecting a 5-percent increase in irrigated acreage to the year 2020. Because irrigation withdrawal can be significant during periods of drought, two projections were completed to the year 2020—one for average climatic conditions and one for dry climatic conditions. Estimated values for 2020 were derived by multiplying the projected 106,000 acres of irrigated land by county average application rates for average (1980–2000) and typical dry conditions. These estimates were adjusted using existing ratios of surface water (39 percent) to groundwater (61 percent) irrigation pumpage to determine the percentage of irrigation usage from groundwater sources. Projected annual groundwater use for irrigation for average conditions during 2020 is 38 Mgal/d and for dry conditions is 43 Mgal/d. These values both represent a decrease from the estimated irrigation use of 63 Mgal/d during the drought of 2002. The severity of the 2002 drought was considered extreme; therefore, the application rate for dry conditions was adjusted to represent a 60:40 mix of average and dry conditions.

## LITERATURE CITED

- Cherry, G.S. 2004. Evaluation of an existing ground-water flow model under 2002 hydrologic conditions in the vicinity of the Savannah River Site, Georgia and South Carolina. In *Proceedings of 2003 Annual Meeting and International Conference of the American Institute of Hydrology*, “Achieving Sustainable Water Resources in Areas Experiencing Rapid Population Growth.” Atlanta, Georgia, October 19–22, 2003. American Institute of Hydrology, Hydrological Science and Technology, v. 20, no. 1-4, pp. 27–38.
- Fanning, J.L. 2003. Water use in Georgia by county for 2000 and water use trends for 1980–2000. *Georgia Geologic Survey Information Circular 106*, 176 pp.