

Regulated Dams in the Saluda-Reedy Watershed

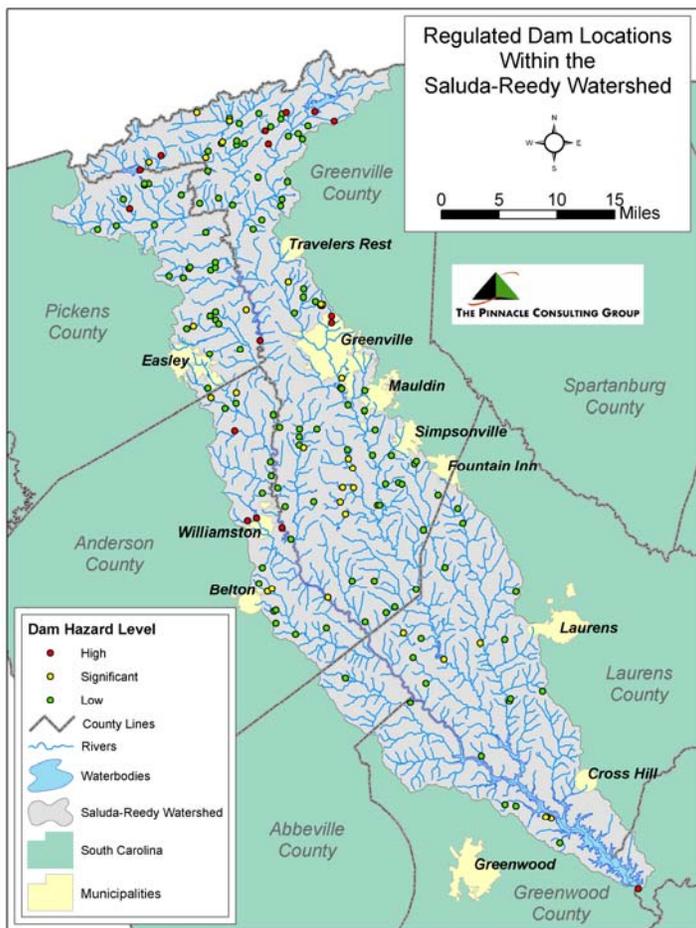


To better understand the role and influence of dams on the streams of the Saluda-Reedy Watershed (SRW), the SRW Consortium (SRWC) recently inventoried all state and federally regulated dams within the watershed. For purposes of this study, “regulated” means those structures subject to SCDHEC or FERC regulations. Through this project we developed a comprehensive database of all available information on **164 regulated dams** and their associated impoundments. Information compiled in this database is relevant to public safety considerations of dam management as well as management of the ecological and hydrologic effects of the dams and their impoundments.

The SRW is defined as the **land area draining to Lake Greenwood**. This area includes the drainages of the Saluda and Reedy Rivers, and contains approximately **1,165 square miles** (~ 745,600 acres) of the Upper Piedmont of South Carolina.

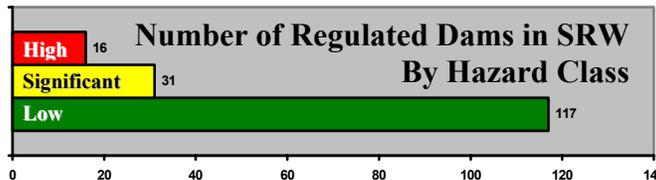
The dams database contains 10,332 records (thus far) related to attributes of the regulated dams and includes:

- Dam name, ownership, and identification numbers;
- Dam location, age, design and construction specifications;
- Dam discharge rate, impoundment area, storage capacity, hazard potential, and other design features.



Information for this inventory was gathered from the U.S. Army Corps of Engineers (USACE), Federal Energy Regulatory Commission (FERC), and South Carolina Department of Health and Environmental Control (SCDHEC). All dams were spatially referenced in a Geographic Information System (GIS). The database was queried to identify dams that could pose potential safety concerns both to people and the environment. These queries identified many dams of interest. Key observations are:

- **Sixteen dams have a ‘high’ hazard rating.** This means that, in the case of a catastrophic dam failure the collapse is likely to cause loss of human life, along with high economic and environmental losses.
- **Many of these dams are old.** By 2015, 50% of these dams will be beyond their design life (50 years is typical).
- **The vast majority (81%) are privately owned.**
- **Five of the dams are regulated by FERC.** Of these, two have high hazard status, and three are low hazard dams.



Nationwide statistics indicate **most dams**, whether privately or publicly owned, are **marginally or inadequately maintained**.

In addition to the 164 regulated dams in the watershed identified through this study, we have also estimated the number of non-regulated dams in the SRW. Based on air-photo imagery, and review of related data, we have tentatively identified over **2,500 non-regulated dams within the SRW**. This is one dam for every 300 acres of land. This density of dams in the mixed agriculture and suburban landscape of the Upper Piedmont is consistent with findings elsewhere in the region.

The SRWC will continue to evaluate the role and significance of dams in the SRW during 2004, to include these issues:

- Assessment of older, larger, and higher-risk dams in terms of public safety hazards and risks to infrastructure;
- Identification of dams requiring maintenance and management attention;
- Identification of opportunities for modifications of dams to enhance or restore streams and wildlife habitats;
- Further characterization of the nature and condition of non-regulated dams;
- Examination of the fragmentation effects of dams on the hydrology and ecology of SRW streams;
- Identification of dams that may be critical in containing contaminated sediments.

While these structures provide a variety of benefits, even small dams can dramatically affect natural flow regimes, habitat, and water quality. The SRW contains many dams and impoundments that may be better managed to enhance public safety and more effectively protect both manmade assets and the natural environment.

This project was sponsored by the Saluda-Reedy Watershed Consortium and has involved technical work by Pinnacle Consulting Group. Watershed Insights Report No. 2, authorized for release by SRWC on 21 May 2004. Key Contact: Dr. Dave Hargett, Pinnacle, dhargett@northwind-inc.com 864.787.8160. The SRWC is a broad-based group of universities, public agencies, private consultants, and non-profit organizations focused on assuring “Clean, Healthy and Abundant Water for a Sustainable Economy and Environment Throughout the Saluda-Reedy Watershed”.