



**SAN ANTONIO
RIVER AUTHORITY**
Leaders in Watershed Solutions

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F L O O D M I T I G A T I O N

MISSION: The San Antonio River Authority's mission is to sustain and enrich life in the San Antonio River Watershed.

PURPOSE STATEMENT

The State of Texas has empowered the San Antonio River Authority (SARA) to preserve, protect and manage the resources and environment of the San Antonio River and its tributaries. Our district spans Bexar, Goliad, Karnes and Wilson counties, yet our concern for the quality and quantity of water extends our focus beyond these boundaries, as factors outside the district contribute to the health and well being of the river and our communities. Through the knowledge and skill of professional and technical staff, we continue to develop and sustain the expertise needed to fulfill our service mission.



FLOOD MITIGATION

SARA, as a regional entity, advocates a regional approach to flood control issues. Flooding knows no jurisdictional boundaries; what occurs upstream in Bexar County impacts communities downstream. SARA works with leaders in Bexar, Wilson, Karnes and Goliad counties to address flooding on a regional basis.

FLOOD MITIGATION PROJECTS

In 1937, SARA accepted responsibility to address flood mitigation, and since that time, SARA has partnered with Bexar County, the City of San Antonio, other communities and the U.S. Army Corps of Engineers (USACE) to provide project management and technical expertise on numerous flood mitigation projects, including:

Flood Mitigation Dams

Since 1954, SARA has been involved in the development of flood mitigation structures in the San Antonio River Basin, 40 of which are now operated and maintained by SARA. These flood mitigation structures have been supported and developed in cooperation with the Alamo Soil and Water Conservation District and the Natural Resources Conservation Service (NRCS) and in collaboration with local funding partners such as Bexar County and the Escondido Watershed District in Karnes County. In Bexar County, SARA maintains 27 flood mitigation dams in the San Antonio River Watershed, Cibolo Watershed and Salado Creek Watershed. SARA also maintains 13 dams in Karnes County. SARA, Bexar County and NRCS are involved in a program to rehabilitate some of the Bexar County dams in response to increased development downstream of the structures.

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San Antonio River Improvements Project

The San Antonio River Improvements Project (SARIP) will apply more environmentally sensitive methods of flood mitigation while restoring the natural habitat of 13 miles of the river from Hildebrand Ave. to Loop 410 South. The project is a \$358.3 million investment by the City of San Antonio, Bexar County, USACE, SARA and the San Antonio River Foundation. SARA serves as project manager and local sponsor with USACE. The SARIP is comprised of four segments: the Museum Reach, the Downtown Reach, the Eagleland Reach and the Mission Reach. The improvements will provide ecosystem restoration benefits to the Mission Reach segment of the project; serve as a catalyst for economic development along the river; and link cultural and historical features in the city through a continuous hike and bike trail.

San Antonio Channel Improvement Project

In 1954, SARA and Bexar County entered into a partnership with USACE to make flood mitigation improvements to 31 miles of the San Antonio River and its tributaries. The highly efficient, yet ecologically damaging project, called the San Antonio Channel Improvement Project (SACIP), involved major realignment and channelization of the river system, which continues to provide invaluable flood protection. Included in this major flood project were two flood tunnels.

San Antonio River Tunnel and San Pedro Creek Tunnel

Bexar County and USACE funded the construction of the San Antonio River and San Pedro Creek flood tunnels, which divert a major portion of the 1% annual chance storm water beneath downtown San Antonio and release it safely into the San Antonio River and San Pedro Creek south of downtown. The tunnels are 24-foot, 4-inch-diameter inverted siphons located approximately 140 feet below ground level. The 1.14-mile-long San Pedro Creek Tunnel became operational in 1991, and the 3.07-mile-long San Antonio River Tunnel became operational in 1997. During the October 1998 flood, the tunnels are estimated to have paid for themselves by preventing property damage in the central business and government district of San Antonio. The City of San Antonio currently operates and maintains the tunnel facilities.

Digital Flood Insurance Rate Maps

SARA conducted Digital Flood Insurance Rate Map (DFIRM) studies for its four-county jurisdiction as part of the national Federal Emergency Management Agency Map Modernization Program. The DFIRM process used modern technology and up-to-date topography, land use, impervious cover and rain fall data to map flood risk. This \$15.8 million project, started in 2004, mapped almost 4,000 stream miles throughout the basin. SARA managed the project; FEMA, Bexar County, the City of San Antonio, the City of Alamo Heights, the City of Windcrest and the City of Live Oak are funding partners in Bexar County. The maps can be seen online at www.bexarfloodfacts.org.

Holistic Watershed Master Planning

In 2008, SARA began work on holistic watershed master plans to address flood mitigation on a regional watershed basis. These watershed master plans recommend traditional regional flood mitigation projects, as well as non-traditional, non-structural solutions such as stream restoration and low impact development opportunities. The master plans also recommend ways to improve storm water quality throughout the basin. Master plans will be complete by 2014.

Flood Response

SARA is developing a real-time flood monitoring and modeling network for the San Antonio River Basin. This project is based on a network of stream and rain gages, including U.S. Geological Survey gages, and incorporates real-time radar data. A pilot project will be complete in 2011, with the entire project completed by 2014.

Bexar Regional Watershed Management Program

The BRWM is a partnership among Bexar County, the City of San Antonio, SARA and 20 suburban cities to address flood management and water quality concerns on a regional basis. To this end, an interlocal agreement signed by participating agencies established the partnership for the purpose of implementing consistent, unified, equitable flood mitigation for the citizens of Bexar County. It extends coordinated planning, project evaluation, funding and prioritization of flood mitigation and storm water projects to all Bexar County watersheds.