

Greater Edwards Aquifer Alliance Programs and Projects - 2023

The Greater Edwards Aquifer Alliance (GEAA) has originated a comprehensive program of science, advocacy, and public engagement aimed at protecting the quality and quantity of spring flows from the Edwards and Trinity aquifers. We are in need of support to fund science, advocacy, and public participation projects by GEAA and our member groups in key policy-making processes that are currently underway. You can learn more at www.AquiferAlliance.org.

San Antonio Soil Carbon Project – GEAA was awarded a grant from the City of San Antonio to assist the city and federal authorities in a study of the impact of green infrastructure on soil carbon sequestration and water quality in thirteen San Antonio parks. The project will serve as a proof-of-concept in order to demonstrate that enhanced carbon sequestration and groundwater infiltration can be achieved in urban areas by employing best management practices. This is the first project of this type to research how significant gains in carbon sequestration might be achieved by enhancing soil organic matter and appropriate plant management in urban open spaces. If successful, this project will help San Antonio to meet its Climate Action goals.

Legislative Program — We provide expert testimony and research issues as needed by the members of the House and Senate Natural Resource committees and our regional delegation to inform decisions made in the State Legislature pertinent to the management of our water resources. We visit with legislators and research the impacts of proposed legislation. We also assemble and secure consensus on an agenda for each Legislative Session and provide testimony accordingly. E-mail alerts that educate the public about actions to support or oppose bills of particular importance engage hundreds of individuals in GEAA's advocacy efforts.

Technical Assistance Program — This program provides our member groups, governmental agencies and policymakers, and the public at large with technical expertise and access to information that addresses issues of regional and local concern as related to the preservation of the quality and quantity of water Edwards Aquifer, its contributing watersheds, and its indigenous plant and animal species. Citizens, news media, and, increasingly, elected officials and public agencies rely on GEAA staff to provide or direct them to technical expertise regarding the management and protection of the Edwards and Trinity karst aquifer formations.

Public Comment and Ad Hoc Issues — GEAA receives requests for technical assistance on a regular basis on a wide variety of issues from individual landowners, regional municipalities, and state and federal governmental agencies soliciting public comment on programs and policies relating to our ground and surface water systems. The expertise of our technical staff is critical to expanding our capacity to promote adequate protection of our water resources and is essential to accomplishing our goals. We rely upon the largesse of several experts who have volunteered their time and the benefit of their expertise as needed on specific projects. Because of the recognized excellence of our work, GEAA is regularly called upon to research specific issues and projects, to comment on proposed projects, rules and programs, and to generate policy and regulatory recommendations and remedies.

GEAA provides practical guidance to the development and construction industries, enhancing our ability to further our goal of aquifer protection by furnishing expertise on proven methods and practices to developers referred to GEAA by government agencies to advise on specific projects. Additionally, GEAA will continue to work with municipalities within the Edwards Region to promote the adoption of sustainable development techniques into municipal building codes and State-recommended best management practices.

Regional Flood Planning and Green Infrastructure — GEAA staff members are serving on the Texas Water Development Board's regional flood planning groups for the San Antonio and Guadalupe river basins. Through this three-year flood planning process, we are promoting land conservation and the use of green infrastructure to mitigate flooding while advising local communities to incorporate green infrastructure techniques into their ordinances and policies.

Under Your Feet Campaign— Much of the recent growth in our region has taken place over the Recharge and Contributing zones of the Edwards Aquifer, resulting in increased contamination of our water supplies and spring flows. A suite of presentations, online resources, social media, and print materials will teach folks who live in the recharge zone about the geology of the Edwards Aquifer, how to live in this extremely environmentally sensitive area, and about actions they can take to protect our Aquifer, including how to handle and store hazardous materials, what common household practices pose a threat to the integrity of sewage systems, and how to plant and maintain landscaping in this unique region. GEAA will ask participants to take a pledge to do their part to reduce harmful stormwater runoff on their properties.

Research on the Impacts of Surface and Subsurface Pollution on the Edwards Aquifer— The agencies tasked with oversight of the water quality of the Edwards Aquifer, most notably the TCEQ and the Edwards Aquifer Authority (EAA) rely on the use of stormwater management as the chief strategy for protecting the water quality of the Edwards Aquifer. Measures to address the quality of stormwater infiltrating the Edwards, however, provide no protection from the introduction of subsurface pollution of the aquifer from human sewage, which becomes particularly problematic with increased high-density residential development of the Edwards Aquifer Recharge and Contributing zones.

The GEAA Technical Team, with the help of student interns from Trinity University and Texas State University, is currently researching the Impact of on-site sewage facilities (septic tanks) versus centralized sewage systems on the Edwards Aquifer Recharge Zone. Our goal is to produce a map that will show the location of all wastewater treatment effluent discharges, as well as land application permits, within our service area. The findings will aid in GEAA's education, outreach, and policy efforts. We are also conducting research on the effectiveness of engineered stormwater reduction facilities in the Recharge Zone in Bexar County.

Green Infrastructure Model Projects— Last year GEAA completed our model Low Impact Development retrofit project at Lorence Creek. Funded by the City of San Antonio's Edwards Aquifer Protection Program, the results of stormwater monitoring have determined that green infrastructure techniques employed at this site were successful in mitigating non-point source pollution on the Edwards Aquifer Recharge Zone.

This year, GEAA is collaborating with the City of Castroville and Friends of Castroville Regional Park to design and build a treatment train of LID features and artificial wetlands to improve the quality of effluent released from Castroville's wastewater treatment plant before it is discharged into the Medina River. GEAA staff is assisting Castroville in securing funds for the project from State and private sources.

GEAA Education Program - GEAA staff provides information to teachers of the life sciences that enable them to teach hundreds of students each year about the mysteries of our karst groundwater system - the Edwards Aquifer, using our karst aquifer model and hands-on lab exercises and trips to Government Canyon State Natural Area. GEAA also trains teachers to use our five-part film, Inside the Edwards Aquifer, which incorporates lab exercises, vocabulary, and resource materials consonant with the Texas Assessment of Knowledge and Skills requirements.

GEAA Collaborations

GEAA contributes expertise and staff time to the Camp Bullis Sentinel Landscape Project, the Joint Base San Antonio Comprehensive Use Plan, Texas Hill Country Conservation Network, the No Dumping Sewage Campaign, San Antonio River Authority's Environmental Advisory Committee, the Texas Water Conservation Action Network, Texan By Nature, the Alliance for Clean Texas, and our fifty-four member organizations and works with a state-wide Green Infrastructure Advisory Team to coordinate efforts for sustainable land use.