Application:

Water Resources Management and Protection at Spartanburg Water

Page: NEAA Nomination Form

APPLICATION DEADLINE: Friday, September 22, 2017 (end of day)

All fields indicated by a red asterisk (*) Must be completed

Category

Water Resources Utility of the Future (Agency)

Name & Title of Individual Submitting this Application

John Westcott, Regulatory Compliance Manager

Submitting Agency

Spartanburg Water

Service Area Population of Submitting Agency

~120,000

Name of Nominated Project / Program or Nominee (as you wish it to be published)

Water Resources Management and Protection at Spartanburg Water

How would you describe the Project / Program or Nominee in five sentences or less? (i.e. news blurb)

Spartanburg Water provides water and wastewater services to much of Spartanburg County and parts of neighboring counties. We own and operate three water supply reservoirs, two of which are managed for full recreational use including fishing and boating, and all of which have shoreline homes. These reservoirs supply two water treatment facilities totaling 91 MGD capacity. We also own and operate eight sewer treatment facilities ranging from fractional MGD to 25 MGD capacity. Our water resources provide drinking water and assimilative capacity as well as recreational, residential and other opportunities that contribute to our community's sustainable economic development and overall quality of life. To ensure that these resources are maintained at the highest level of quality and are preserved for future generations, we have developed a multi-faceted water resource protection and enhancement program.

Narrative Description: Project / Program or Individual (attach pdf, limited to 4 pages, double-spaced, 12pt)

Download File

Supplemental Information Included (attach pdf, limited to 4 pages, double-spaced, 12pt) Optional

Yes

Supporting Material - Video (provide link)

Supporting Material - Text/Images (attach pdf, limited to 4 pages)

Download File

Please indicate the elected officials you would like NACWA to notify if your agency is selected for the National Environmental Achievement Award (Optional)

No

Signature of Individual Submitting Application (pdf/jpg)

Name of Submitting Agency's NACWA Representative

Sue G. Schneider

Title of Submitting Agency's NACWA Representative

Chief Executive Officer

Email of NACWA Representative

Signature of NACWA Representative (pdf/jpg)

Does this Project/Program involve another NACWA Agency?

No

Please review your application prior to finalizing. All fields with a red asterisk (*) must be completed. If you have any questions in regardings to sumbitting your appliation, please contact Bredy Trombino at 202.533.1820.

Water Resources Utility of the Future

Spartanburg Water provides water and wastewater services to much of Spartanburg County and parts of neighboring counties. We own and operate three water supply reservoirs, two of which are managed for full recreational use including fishing and boating, and all of which have shoreline homes. These reservoirs supply two water treatment facilities totaling 91 MGD capacity. We also own and operate eight sewer treatment facilities ranging from fractional MGD to 25 MGD capacity. Our water resources provide drinking water and assimilative capacity as well as recreational, residential and other opportunities that contribute to our community's sustainable economic development and overall quality of life. To ensure that these resources are maintained at the highest level of quality and are preserved for future generations, we have developed a multi-faceted water resource protection and enhancement program.

We are fortunate to be near the top of our watershed, with little industrial and limited small scale agricultural use upstream. Spartanburg Water owns a buffer zone defined vertically by elevation around each reservoir. The horizontal width thus varies somewhat with slope. Where possible, we have used restrictive covenants or conservation easements, and made strategic land purchases along the major feed streams to provide an additional level of protection. We have instituted a comprehensive Buffer Management Plan for the newest reservoir that requires Landowner Access Permits for entry into and passive use of the buffer zone and for activities such as dock construction and replacement, walkways, tree and vegetation planting, pruning or removal, and irrigation. The plan seeks, over time, to restore more natural buffer zone around the lake perimeter. Application of such a plan to the other reservoirs is being evaluated, but is more challenging due to a number of historical legal and other issues. That notwithstanding, all 3 reservoirs are covered by state laws governing certain aspects of usage and by local "Policies and Procedures for Use of Water Supply Reservoirs," a document with longer history which codifies many of the same provisions, including permitting requirements for buffer access and use. Where there are gaps, we work closely with land owners to encourage voluntary action consistent with good buffer management practices.

Spartanburg Water maintains a dedicated watershed management staff, including a Water Resource Manager, Reservoir Manager, two Watershed Management Specialists and three Lake Wardens who have formal law enforcement training and are sworn law enforcement officers under SC law. Duties include management of recreational uses on the reservoirs, enforcement of regulations and permit requirements for boat and home owners, and patrols/inspection of the reservoirs and watershed.

Spartanburg Water has received grant funding through the South Carolina Department of Health and Environmental Control (DHEC) to develop a watershed based plan for the South Pacolet River. The plan elements can be used by multiple agencies to develop appropriate best management practices for reducing nutrient and other non-point source pollutant impacts on our primary water sources, Lake Bowen and Municipal Reservoir #1. Required elements of the grant include: identification of pollutant sources and causes; target load reductions; management measures (bmp); funding; outreach strategy; implementation schedule and milestones; reduction criteria; monitoring; and evaluation criteria.

Spartanburg Water seeks to actively identify opportunities to enhance community and watershed welfare. As part of a project to increase storage in our Lake Blalock reservoir, we installed a 108 inch cone valve to allow precise control of water release, assuring optimal flows are maintained to meet the needs of downstream users, provide aeration, and maintain a healthy stream. We partnered with USGS , DHEC, the Department of Natural Resources, the Army Corps of Engineers, and stakeholders to develop a monitoring and release scheme that balanced the need for water reserves with the needs of downstream users. We also removed small dams along Peter's Creek and performed stream restoration to both this stream and Fairforest Creek. An endangered plant species, Dwarf-flowered Heartleaf (*Hexastylis naniflora*), was discovered in the construction and predicted flood zones. We worked with a botanical expert from the University of South Carolina, the area Master Gardeners' club and student volunteers to delineate areas occupied by this plant, identify suitable alternative locations, and transplant a sufficient number to assure a viable population. Shoreline properties occupied by the plants were placed under restrictive covenant to protect these populations, and additional acreage for mitigation was identified and purchased. The NPDES outfall at one major water treatment plant was relocated to a

significantly larger stream to minimize environmental impact, and the outfall at the other major plant has been eliminated by instituting filter wash water recycling.

Spartanburg Water and the U.S. Geological Survey System conducted a multi-year water quality study of the Lake Bowen and in Reservoir #1 system. The focus of the study was to identify spatial occurrence and distribution of geosmin, an algal taste and odor compound, and to assess associated limnological conditions with the goal of achieving a better understanding of reservoir dynamics leading to algal taste and odor. In 2017, a hypolimnetic oxygenation system was installed in these two reservoirs to relieve anoxic zones, help with iron, manganese and phosphorous removal, and improve the overall health and balance of these lakes. The system also has the ability to inject aluminum or iron based coagulants to help with nutrient sequestration and control undesirable algal growth.

Spartanburg Water leads or participates in a wide variety of community education and service activities. We sponsor educational / recreational paddling events for the public in our watershed, as well as a pontoon classroom event for local students and a Lake Sweep event during which community volunteers help remove litter from our watershed. Participants have an opportunity to learn about ecology and conservation through these events. Our Watershed Watchdogs program is a volunteer group comprised of land owners and residents of the immediate watershed area. Volunteers in this program are provided with materials and contacts to maintain surveillance / inspection of the watershed area, enhancing both water quality and security. We partner with local non-profit organizations and government agencies to provide educational school programs and presentations on water quality, watersheds, and water conservation, and we provide grant funding to organizations such as the University of South Carolina Upstate's Water Ecology Center.

Spartanburg Water has been a leader in eliminating NPDES discharge points from Spartanburg County water bodies, reducing our number of outfalls from over 30 to 8 during the past 25 years. Calling on our extensive experience in planning water supply for Spartanburg County, we have also been an active participant in South Carolina's first efforts at statewide water planning, helping to develop the first surface water withdrawal permitting and reporting legislation for the State, as well as the implementing regulations. Spartanburg Water actively engages with the local and state Chambers of

Commerce, Homebuilders' Associations, Manufacturers' Association and other business groups to support environmentally responsible economic development in our community.

Working with the SC Water Quality Association (WQA), of which we are a member, and the SC Department of Health and Control, we have made significant progress in reforming the way in which reclaimed water treatment capacity is allocated and accounted for. DHEC, with the assistance of WQA members, has revised their regulations for assigning capacity to various types of sewer users (residence, apartment, restaurant, etc.) to more accurately reflect the reduced unit equivalent volumes achieved through water conservation and advances in water use efficiency. Overall, default volumes have been reduced by approximately 25%, which equates to a 25% boost in reclaimed water treatment capacity. We have also performed extensive review of development projects in our service area to determine which remain viable and which have been abandoned or reduced in scale and therefore do not need their full capacity allocation.

We have developed community education and outreach programs in this are as well, branding sewage as "reclaimed" rather than "waste" to underscore the cyclical nature of human interaction with water resources. Our most recent program, "Water Matters Citizens' Academy," is an interactive program that provides community members interested in learning about critical water and wastewater issues the opportunity to get a better understanding of water resources, water use in the community, and water treatment by their water utility. Consisting of six consecutive evening sessions, it includes a variety of hands-on activities, tours of treatment facilities, infrastructure and reservoirs, and presentations of new and innovative projects by our experienced team. Our goal is to expand and sustain a diverse network of customers from across the region who are knowledgeable about key water issues and regional programs and strategies. We are hopeful that graduates will help expand the community knowledge base by serving as outreach ambassadors and by referring others to participate in future Water Matters classes.

Lake Blalock Dam with 108” cone valve active.

“Paddlefest” event.

”Pontoon Classroom”