

LAKE KEOWEE SOURCE WATER PROTECTION TEAM (LKSAPT)

Third Annual Report - MARCH 2021

I. Creation of Clean Water Group 501(c)3

On October 31, 2017 the LKSAPT received approval as a 501(c)3 non-profit organization that was formed to protect water quality throughout the entire Lake Keowee watershed. This includes the following 10-digit HUC Watersheds: Little River-Lake Keowee (0306010103), Keowee River-Lake Keowee (0306010102), and Headwaters Keowee River-Lake Jocassee (0306010101).

II. Board of Directors

The current Board of Directors, as of March 2021, includes representatives of seven member organizations, with each encouraged to assign both a Primary and Substitute Representative. Current members are listed below including Primary and Substitute as assigned.

- a. Friends of Lake Keowee Society (FOLKS): Dale Wilde (**Suzy McKinney**)
- b. Seneca Light & Water (SLW): Melisa Ramey (**Bob Faires**)- Treasurer
- c. Greenville Water (GW): Jeff Boss (being replaced by Bob Schmidt as of February 2021) (**Jeff Phillips**) – Secretary
- d. Advocates for Quality Development (AQD): Robert Aulebach (**Jim Schnoover** being replaced with Sharon Hamilton as of January 2021)
- e. Oconee County (OC): Adam Chapman – now Vacant
- f. Pickens County (PC): Scottie Ferguson
- g. Upstate Forever (UF): Erika Hollis (**Katie Hottel**)

Additional support from:

Clemson University Center for Watershed Excellence Technical Advisor - Katie Callahan
Duke Energy – Alan Stuart
Clemson Extension – Susan Lunt
Clemson University Intern – Maddyson Frierson
Greenville Water – Elizabeth Lee

III. Use of Licensee (Duke Energy) Funds

As required, the use of Licensee funding has been in accordance with the Keowee-Toxaway Hydroelectric Project (FERC No. 2503) Relicensing Agreement Appendix I. See Appendix A for the full financial report.

IV. Surface Water Modeling

In September 2017, Lake Keowee Source Water Protection Team (LKSAPT) contracted with Clemson University (Dr. Ashok Mishra, Dr. Anoop Valiya Veetil, and Dr. Earle Hayter) to develop a surface water modeling system for Lake Keowee utilizing the Soil and Water Assessment Tool (SWAT) watershed loading model and Environmental Fluid Dynamics Code (EFDC) three-dimensionally hydrodynamic and water quality model. The SWAT model provides input for the EFDC model and was developed utilizing a subset of the basins flowing into Lake Keowee. The

sub-basins, Cane Creek and Little Cane Creek, were selected based on the data intensity for the streams. The EFDC is a public domain model of the entire lake that can simultaneously simulate the hydrodynamics of a water body, along with water quality, and the transport of heat (temperature), sediment, and toxic chemicals. This model will account for the discharge from Lake Keowee into Lake Hartwell and the boundary conditions that feed into the lake model including the discharge of flows from Lakes Jocassee and Keowee. The objective of the project was to investigate the potential influence of septic tank loading to Lake Keowee.

This was the initial phase to set up the model and perform some preliminary modeling to check the calibration and sensitivity, but not to necessarily run the model to produce the recommendations for priority areas. More work will need to be engaged in the future. The final report from Clemson was received April 2019. See Appendix B for the Final Report.

The SWAT Model is being maintained on the Duke Energy Server.

V. Watershed Plans

- a. Cane and Little Cane Creek – FOLKS used SCDHEC 319(h) funding to hire Clemson University’s Center for Watershed Excellence to create a plan for reducing bacteria within the Cane and Little Cane Creek watersheds. These basins are entirely within Oconee County, have experienced significant land use change since 2005 – including loss of forested area, and have the most septic tanks of any subbasins.
- b. Little River and Keowee River- Lake Keowee Watersheds
In March 2019, the LKSWPT was awarded SCDHEC Grant funding through Drinking Water Sate Revolving Fund for the creation of a comprehensive, actionable Watershed Based Plan (WBP) for these watersheds, which collectively encompass the majority of the area draining to Lake Keowee. The WBP includes prioritization of specific parcels that would provide the most significant benefits from various Best Management Practices (BMPs), including land protection, wetland and stream enhancement, septic repair, and agricultural Best Management Practices (BMPs). The original completion of this plan was anticipated by March 2020, however due to a delay in the acquisitions of some of the data and extension was granted by SCDHEC. The plan was completed and submitted to SCDHEC for review in May 2020. The plan was approved by SCDHEC and the USEPA in July 2020.

VI. Strategic Planning

The team hired consultant Barry Nocks to facilitate the development of a five-year plan.

VII. Branding

In August 2019, the team retained the services of the South Carolina National Heritage Corridor for logo/branding services for the LKSWPT. “Our Water. Our Future. Our Responsibility” was the branding option chosen along with the accompanying logo.

VIII. Website development

The domain name: www.lakekeoewewatershed.org was purchased and the LKSWPT website is now live. The website includes information about the Watershed Based Plans, Find and Fix Septic program, and links to an array of additional information. An interactive map is also included so citizens can identify if they are located within either of the grant funding areas.

IX. Community Outreach

- Community Public Meeting – a public meeting was held October 24, 2019 with the following objectives: introduce the LKSWPT members, familiarized the public with the Watershed Based Planning process, educate and engage the public, gather public feedback and capture their knowledge of areas of interest in the watershed. Additional meetings were planned for 2020-2021, but due to COVID these public meetings have been postponed until a later date.
- Watershed Based Plan Stakeholders Meeting – A Stakeholders meeting was held December 11, 2019 to discuss the watershed plan and protecting the Lake Keowee watersheds. A partial list of the invited stakeholders included: SCDHEC, SC Forestry Commission, Oconee Joint Regional Sewer Authority, Powdersville Water, SC Department of Natural Resources, Pickens County Water Authority, Pickens Regional Joint Water Supply, City of Walhalla, Friends of Jocassee, and USDA NRCS. Additional meetings were planned for 2020-2021, but due to COVID these public meetings have been postponed until a later date.
- Public Opinion Survey - An online survey was created to engage the public and provide the opportunity for them to share their knowledge and concerns about water quality in the Lake Keowee watersheds. We received over 300 responses and the results were incorporated in the Watershed Plan.
- A full color, quarter page, five day advertisement was ran in The Journal Newspaper announcing the Watershed Based Plan Public meeting. A link was included for the Public Opinion survey.

X. Find and Fix Septic Program

This program consists of two funding opportunities. 1) Funds provided by the 319 Grant will be limited to the Cane and Little Cane Creek watershed that was identified in the Watershed Based Plan. 2) Funds provided by the LKSWPT and will include the entire Keowee Toxaway Project Watershed. A sliding fee scale schedule has been created to give priority to those with financial needs.

Letters announcing the program were sent to property owners in the Cane and Little Cane Creek watershed that was identified in the Watershed based plan. A follow up post card reminder was sent a few of months later to encourage participation in the program.

The Grant contract was officially signed November 25, 2020 with a project completion date of November 24, 2021.

As of March 22, 2021, we have successfully completed 3 repairs, with one in the Cane and Little Cane Creek grant area and two in the greater Duke project area.

XI. Section 319 Nonpoint Source Implementation Grant

The LKSWPT applied for implementation funds for Phases 1-2 of the Septic System Maintenance and Replacement Program from the Cane Creek and Little Cane Creek Watershed Management Plan to address bacteria pollution. The Cane Creek/Little Cane Creek watershed is the largest and most urbanized watershed that drains to Lake Keowee, a critical drinking water reservoir. The watershed has had a Fecal Coliform TMDL since 2005, and the Cane and Little Cane Creeks have been on the SC 303(d) list of impaired waterbodies since 1998 for bacteria violations.

Septic systems are the dominant means for onsite wastewater treatment in the region. To reduce bacteria loading to waterways the LKSWPT proposes to implement a septic repair program to those homes, which have been identified as high risk/high priority in the plan. This septic repair/replace program will serve as a pilot program for the region that will lead to significant water quality improvements.

The application focused only on the Cane Creek and Little Cane Creek watersheds with a project scope to complete 32 septic repairs within two years.

LKSWPT was awarded funding and the grant contract was officially signed November 25, 2020 with a project completion date of November 24, 2021. As of the date, we have successfully completed one repair.

XII. Clemson University Intern Program

The LKSWPT secured an intern for the Fall semester to aid with the development of the Find and Fix Septic Program. The scope of work included: advertising the septic program by use of social media, signs, press releases or other means available. During times of inactivity on the septic program, the intern will also aid the LKSWPT in relation to water quality monitoring, data gathering, participating in Adopt a Stream, and developing maps of the project area.

XIII. Septic Pump Out Pilot Project

In response to the mail out of the Find and Fix Septic program, numerous calls have been received from homeowners about pumping out their septic tanks to identify any potential problems. Many of the callers indicated they had tanks greater than 10 years old that have never been pumped out. Although pumping out septic tanks is not included in the scope of the program, the LKSWPT created a pilot program that will be funded from the interest of the money in the organization's money market accounts. In order to be eligible for consideration in this program the septic tank must not have been pumped in at least the past five years. During the pump out, an inspection of the tank and drain field will be performed by a SCDHEC certified septic contractor to determine the condition of the system and if repairs are needed. The LKSWPT plans to re-evaluate the program after three pump outs have been completed.

