

## LAKE KEOWEE SOURCE WATER PROTECTION TEAM (LKSAPT)

### Second Annual Report - MARCH 2020

#### 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 2020, 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 (**Jeff Phillips**) – Secretary
- d. Advocates for Quality Development (AQD): Robert Aulebach (**Jim Schoonover**)
- e. Oconee County (OC): Adam Chapman
- 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

#### 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, LKSAPT contracted with Clemson University (Dr. Ashok Mishra, Dr. Anoop Valiya Veettil, 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.

#### 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. The plan is available online at:

[https://scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/Watershed/Approved\\_Funded\\_Watershed\\_Based\\_Plans/Cane\\_and\\_Little\\_Cane\\_Creek\\_WBP\\_2018.pdf](https://scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/Watershed/Approved_Funded_Watershed_Based_Plans/Cane_and_Little_Cane_Creek_WBP_2018.pdf)

- b. Little River and Keowee River- Lake Keowee Watersheds  
In March 2019, the LKSWPT was awarded SCDHEC Grant funding through Drinking Water State 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 will include 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 draft plan should be completed and submitted to SCDHEC for review on or about April 17, 2020, and the final documents submitted by May 17, 2020.

#### VI. Strategic Planning

The team hired consultant Barry Nocks to facilitate the development of a five-year plan. See Appendix C for the Plan details.

#### 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.lakekeoweewatershed.org](http://www.lakekeoweewatershed.org) was purchased and in the beginning stages of development. The team will initially start with a small self-design using the [www.wix.com](http://www.wix.com) portal. The layout has begun and is currently in the development stages.

IX. Community Outreach

- Community Public Meeting – a public meeting was held October 24, 2019 with the following objectives: introduce the LKSWT members, familiarized the public with the Watershed Based Planning, educate and engage the public, gather public feedback and capture their knowledge of areas of interest in the watershed. See Appendix D for the announcement of the Public Meeting
- 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 Stakeholder invited 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. See Appendix D for the announcement of the Watershed Based Plan Stakeholders Meeting.
- Public Opinion Survey - An online survey was created to engage the public and provide the opportunity for them to share their knowledge and concerns. We received over 300 responses and the results were used for information in the Watershed Plan. See Appendix E.
- 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

We are in the preliminary stages of a program to reach out to homeowners identified in the priority areas in the Cane and Little Cane Creek watershed base plan. A Request for Proposal has been sent to the list of SCDHEC Approved Septic Contractors in Pickens and Oconee Counties and letters have been a mailed to the homeowners. The LKSWPT has submitted a pre-application for SCDHEC 319(h) funding for the implementation of the Phase I and 2 Septic Maintenance and Replacement Program to supplement funding this project. If selected to submit a full application the deadline for this grant proposal is expected to be May 22, 2020.

XI. Implementation Grant

The Lake Keowee Source Water Protection Team (LKSWPT) is has 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.

## **APPENDICES**

APPENDIX A: 2019 Financial Report through March 2020

APPENDIX B: Development of a Watershed Pollutant and Septic Tank Effluent Loading Model with Application to the Cane Creek Watershed of Lake Keowee Final Report (April 2019)

APPENDIX C: Strategic Planning

APPENDIX D: Public Outreach Flyers

APPENDIX E: Public Survey