

**TNWRRC Advisory Board Meeting**  
**USGS Water Science Center, Nashville, TN**  
**July 11, 2016**

**Attendees:**

**Outside Agencies**

- Scott Gains – USGS Water Science Center
- Michael Bradley – USGS Water Science Center
- John McClurkan – TN Dept. of Agriculture, Land and Water Stewardship
- Sam Marshall - TN Dept. of Agriculture, Land and Water Stewardship
- Tisha Benton – TN. Dept. Of Environment and Conservation, Div. of Water Resources
- David Duhl - TN. Dept. Of Environment and Conservation, Div. of Water Resources

**TNWRRC & UTK attendees:**

- Thanos Papanicolaou – TNWRRC Director & H&S Lab
- Chris Wilson – Hydraulics & Sedimentation Laboratory , CEE Dept.
- Tim Gangaware – TNWRRC

**Introductions – Thanos**

**Update on TNWRRC Activities –**

FY 2016 104b grant submitted and approved by USGS. Four new research projects were funded and two Graduate Student Supplemental research projects were funded for the first time. Timeline for all projects is March 1, 2016 through February 28, 2017.

One 104G proposal was submitted to USGS and is under review. Notification on funding will come in August.

FY 2015 WRRIP Annual Report was submitted to USGS on July 6, 2016. The Annual Report will be posted on the TNWRRC website by end of July 2016 and copies will be sent to Advisory Board members.

**FY 2017 104B Seed Grants Potential Topics –**

There was a brief discussion on the primary purpose of 104b grants and the required 2:1 match. The matching requirement makes it difficult for some faculty to obtain 104b support. Can state agencies and other non-federal agencies provide some direct support and funding for 104b projects? Can USGS and other federal agencies provide in-kind support, (i.e. data sharing, equipment, staff time in support of project)?

The RFP will go out in early Sept. 2016 with preproposals due in Oct. and full proposals due by mid-December. What are some potential topics of interest to state agencies to be included in the 2017 104b RFP?

**TDEC/Tisha Benton** – TDEC has a new approved nutrient reduction framework that includes a focus on optimization of wastewater treatment plants. They need assistance in determining if these efforts are working. Are these best practices effective? What in-stream metrics can be part of the permit monitoring requirements for the plants' NPDES permits? These are needed to develop a true adaptive management plan.

**TDA/John McClurkan** - Cover crop use in nutrient management plans for ag. lands. Need to determine the effectiveness of use of cover crops and do it at a sub-watershed level. Look at a small watershed with many different BMPs on the ground and try to determine if they are effective in nutrient reduction at the watershed scale.

What are the attitudes of the landowners in adopting the practices, level of knowledge and their willingness to adopt the best practices? What are the behavioral influences for landowners that lead them to adopt these practices? (Access to an Extension specialist? Seeing others that have successfully adopted and benefited from the practices?)

Need data/information that will assist in getting USDA/NRCS in TN to better support and fund the use of practices like cover crops. Help NRCS to better prioritize and fund the "best" practices. How USDA defines success vs. how TDA and TDEC measure success needs to be addressed. Questions of soil health? NASS data? Do cover crops replace irrigation? **Here is an opportunity to look at using a conservation innovation grant to support some 104b projects in the future.**

**TDA/TDEC** – Stream bank stabilization and the effectiveness of hard armoring vs. bioengineering techniques; what does the science tell us? What are the most effective techniques and under what conditions? How different techniques improve ecological integrity of the system. Assist with developing a stream bank stabilization tool kit.

**USGS/Scott Gains** - Water use in critical watershed is very important to get a handle on it. Agricultural water use in TN is very complex and not well understood. What are the practices and what are the effects of those practices? Water withdrawals and drinking water availability are critical issues for TDEC. Ecological flow study and conjunctive use of water needs to be addressed in key watersheds Optimization of water use by agriculture along with other external needs for water use is not well understood. Calibrating of WQ model for Duck watershed is needed. Water use efficiency, variable rate irrigation and adoption of agriculture conservation practices without USDA incentive payments all need to be address related to getting a better handle on are water use in critical watersheds.

Need a better understanding of human behavior issues and how it impacts decisions to adopt the best practices. A model of human behavior that looks at emerging patterns

resulting in changes of actions. Actual use of BMPs correlated to human factors. Tools are needed to tell us how do we know what effect we have had, how do we measure it and how long does it take? What are the signatures of change that we can use to ID success. How USDA defines success vs. how TDA & TDEC measure success needs to be addressed. Adaptive and behavioral responses to selection of BMPs. Develop a better understanding of how effective our efforts have been improving watershed conditions.

**TNWRRC Internship Program** – How do we establish an internship program at TNWRRC? How can best engage, TDEC, TDA, NRCS and others in the program to support their needs and the needs of students at TN colleges and universities? There maybe two types of internships, traditional USGS program thru the Water Science Center projects and another one funded by other federal, state and local water resources programs and departments. What is the process/steps for establishing a USGS internship program and what other NIWR Water Institutes have successful programs? Contact Earl Green for this information.

**Mississippi River Basin Nutrient Initiative** – Thanos talked about this. It includes other centers from IA, IN, MN, LA. The centers will combine and set aside money for research. Key questions include the following: (1) How much comes off the land and travel times; (2) How effective is our current infrastructure? and (3) How can we support current infrastructure through modeling and monitoring?.