

TCAA WATER MANAGEMENT PARTNERSHIP

Many Participants

FDACS coordinating, funding from FDEP and SJRWMD

Purpose

- The *TCAA Water Management Partnership* is a collaborative effort between TCAA growers, FDACS, FDEP, NRCS, the St. Johns River WMD, the University of Florida-IFAS, and interested counties to demonstrate and install projects and enhance practices on TCAA farms, which not only will improve water quality and water conservation, but will result long term in more efficient farm management and cost savings.
- The intended result of the Partnership is to contribute to the improved health of the Lower St. Johns River through on-farm and regional water management projects that will reduce the movement of nutrients to the river, while maintaining or increasing the long-term viability of agriculture in the TCAA.

General Project Categories

- **Farm Tailwater Recovery** - Involves locating a wet pond at the edge of a farm before the farm outfall, to store a portion of the excess discharge from the farm, to be used again for irrigation.
- **Regional Water Reuse** - Involves the construction of a wet pond to store excess water discharged from multiple farms. A pump station and return piping system bring stored water to the farm's irrigation supply.
- **Regional Wet Detention** - Regional stormwater treatment system constructed to treat larger watershed areas including multiple farms.
- **Farm Drip Irrigation + Fertigation** - Conversion of the farm irrigation system from seepage irrigation to drip/trickle irrigation, using surface drip, subsurface drip, microspray or microjet, and bubbler type systems. Water is delivered through a small tube, tape, or spray nozzle.
- **Farm Enhanced Seepage Irrigation** - Automation of the current seepage irrigation system using field sensors to measure soil moisture and relays to switch the irrigation pumps off and on.
- **Tile Drainage coupled with Drip Irrigation (or center pivots)** - Possible combined benefits of reducing runoff, maintaining drainage capabilities, and improving crop quality and yield.
- **Farm Overhead Irrigation + Fertigation** - Conversion of the farm irrigation system from seepage irrigation to overhead irrigation, which involves the use of sprinkler irrigation systems such as portable and traveling guns and center-pivot and lateral-move systems.

Technical Support Teams

- 1. Grower contacts *TST member X* and schedules site visit to discuss project concepts (there may be multiple visits over a period of time). *TST member X* lets grower know that other TST members may want to participate.
- 2. *TST member X* sends e-mail to Terry Pride regarding nature, date, time, and location of each visit.
- 3. Terry sends out e-mail to TST member list to see if others are interested in joining the visit/discussion, keeping it to a reasonable number.
- 4. Interested TST members directly contact *TST member X* to let him/her know they want to participate, and they copy Terry on e-mails. *TST member X* lets grower know how many others to expect on a given visit.
- 5. If there is a change to the scheduled visit/discussion, *TST member X* immediately lets the other interested TST members know via e-mail or, if time is of the essence, by phone call. Please copy Terry on e-mails.

Demonstration Project Monitoring

- All, or at least many demonstration projects will be monitored to determine efficacy.
- Not sure who exactly will be conducting monitoring, but IFAS will likely be involved in monitoring design and results analysis.

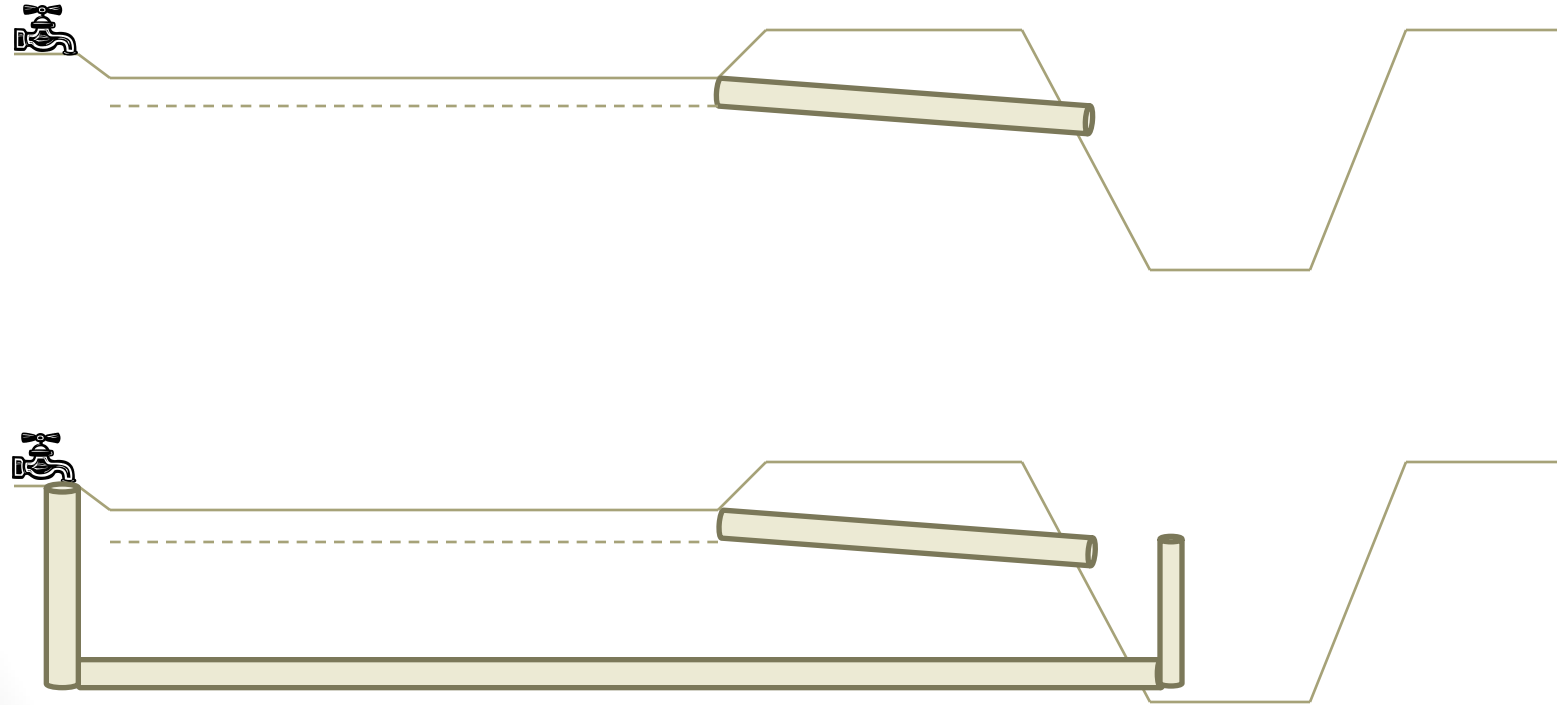
Tile Drain Water Quality Monitoring



Surface vs. Subsurface Drainage



Conventional vs. Tile System



Monitoring to anticipate possible water quality issues

- Grab samples during base flow or event sampling effort comparing tile to conventional system.
- Mainly focusing on concentration differences with less emphasis on quantity although quantity difference will be monitored at pump or monitored depending on funding.
- Monitoring to be conducted during upcoming growing season
- Results will be used to guide future implementation of Tile Drain systems
 - Permeable Reactive Barriers (PRB)
 - Phosphorus retention using Water Treatment Residuals
 - Nitrate removal using organic substrate (sawdust)