

# 2012 Drainage Workshop

*Designing & Installing Subsurface  
Agricultural Drainage Systems*

**February 21-23, 2012**

Comfort Inn  
1821 N. Missouri Street ♦ Macon, MO

*From this ...*



*To This!*



# Workshop Agenda

## TUESDAY, FEBRUARY 21

**Noon Registration**

**1:00pm Afternoon Session**

- ♦ Introduction to Drainage Water Management
- ♦ MU Drainage & Subirrigation (MUDS) Research Update
- ♦ Water Movement in Soils
  - Processes and Terminology
  - Important Soil Properties
  - Hydraulic Conductivity
  - Soil Water Concepts
- ♦ Introduction to Drainage System Design
  - Engineering Standards and Specs
  - Class Problems - Using Design Tables and Standards

**5:00pm Adjourn for the day**

## WEDNESDAY, FEBRUARY 22

**8:00am Morning Session**

- ♦ Planning Considerations
  - Needs: Surface or subsurface drainage, water table management, or nutrient management
  - System Layout & Outlet locations
  - Utilities determination - One-Call
  - Why is an on site evaluation of soil properties important?
  - Wetland determination
- ♦ Hands-On Class Problems
  - Make a topographic map from survey points

**Noon Lunch Provided**

**1:00pm Afternoon Session**

- ♦ Hands-On Class Problems
  - System Design
- ♦ Service Provider (TSP) Overview

**5:00pm Adjourn for the day**

## THURSDAY, FEBRUARY 23

**8:00am Morning Session**

- ♦ Team Design Problem
  - Field Topographic Map
  - Soils, and other Information
- ♦ Presentation and Summary of Team Drainage Designs

**Noon Lunch Provided**

**1:00pm Afternoon Session**

- ♦ Contractor/Industry/Farmer/University Panel Discussion
- ♦ Final Questions, Workshop Summary, Evaluation

**4:00pm Adjourn**

# Workshop Speakers

## **Mark Abney**

NRCS Assistant Soil Scientist  
Columbia, Missouri

## **Marty Comstock, P.E.**

NRCS Agricultural Engineer  
Columbia, Missouri

## **Deb Dickens**

Executive Director  
Missouri Land Improvement Contractors Association  
Hartsburg, Missouri

## **Mari Gilford, P.E.**

NRCS Agricultural Engineer  
Columbia, Missouri

## **Eddie Hoff**

Farmer  
Boonville, Missouri

## **Buddy Hostetter**

Hostetter Construction Co., Inc.  
Waverly, Missouri

## **Kelly Nelson, PhD.**

Research Agronomist  
Greenley Research Center  
Novelty, Missouri

## **Dick Purcell, P.E.**

NRCS State Conservation Engineer  
Columbia, Missouri

# Who Should Attend

Contractors, farmers, land owners, crop advisors, consultants, and water & land resource technicians will have an opportunity to learn about integrated water management systems, the latest subsurface tile drainage research results, drainage planning, design, economics, equipment, and installation.

# Why Should You Attend?

- For a hands-on education in the latest techniques involved with the design and installation of integrated water management systems, using research results from MU's Greenley Research Center.
- To gain more customers by increasing your skills to include the design and installation of subsurface drainage systems.
- To understand the environmental benefits of drainage water management.
- To discover the pitfalls and short-cuts of subsurface drainage installation ... before you get in the field.
- To take advantage of the opportunity to ask the experts about subsurface drainage design and installation.

## What Is A Drainage Workshop?

In Missouri, there is a rising demand for patterned, subsurface drainage systems. Developments in materials, the design process and installation equipment have fueled a new approach to an old agricultural management technique.

The Natural Resources Conservation Service (NRCS), Missouri Department of Natural Resources, University of Missouri (MU), and Missouri Land Improvement Contractors Association (LICA) have partnered to present these new developments in a workshop on integrated water management design and installation.

This is an outstanding program which will use both lecture and hands-on problems to cover the details of planning a subsurface drainage system, including engineering standards and specifications, design tables, sizing of pipes, drainage design, design of mains and laterals, drain tile spacing, and controlled drainage and subirrigation design principles.

Attendees will learn about the most current MU Drainage/ Subirrigation research results, and ancillary issues, such as underground utilities and potential wetlands concerns.

A panel discussion will give attendees an opportunity to get their questions answered by a local farmer using a subsurface drainage system, NRCS representatives familiar with the applicable standards, a LICA contractor who has installed many systems, and University personnel with their research perspectives.

## Workshop Sponsors



**United States Department of Agriculture**  
Natural Resources Conservation Service



**Greenley Research Center**  
College of Agriculture, Food and Natural Resources



## Registration

The registration fee for this Workshop is \$30 per person. No on-site registration will be available. Space is limited to the first 50 registrants. Registrations with full, non-refundable payment must be received by **February 14, 2012**.

**Make check payable to:**

The University of Missouri  
7016 East North Shore Drive  
Hartsburg, MO 65039

**TO REGISTER BY PHONE OR FOR QUESTIONS:**

Call Debbie @ 573-634-3001

**Name of Attendees: (Please print)**

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\_\_\_\_\_  
\_\_\_\_\_

**Company:** \_\_\_\_\_

**Phone:** \_\_\_\_\_

## Hotel Information

**Comfort Inn**

1821 North Missouri Street  
Macon, MO, 63552  
Ph: 660-395-8000

**Directions to Hotel:**

**From Kansas City:** I-35 North to Highway 36 East. 100 miles to Macon exit. Turn left. Hotel on left.

**From St Louis:** I-70 West to Highway 63 North. 60 miles to Macon. North of Macon on left.

When using a GPS device or web map to locate the hotel, please use hotel's coordinates where possible: Latitude: 39.75735212859945, Longitude: -92.46757328510284.

**We will provide:**

- ♦ Resource/Reference Manual
- ♦ Engineering Scales
- ♦ Lunches and breaks

**You will need:**

- ♦ Notepaper
- ♦ Pen or pencil
- ♦ Calculator