EXCEL_LEnT Training for Water Managers:

Learn Enhanced Techniques (Tips or Tricks) to super-charge your EXCEL applications

August 7, 2008

Department of Civil and Environmental Engineering
Colorado State University

Purpose and Background:

The EXCEL spreadsheet software is one of the most used software packages in water resources organizations. Yet most engineers and scientists use only a fraction of the spreadsheet’s capabilities that are particularly useful in modeling and data analysis!

This workshop is designed to teach you how to use some of the features of EXCEL that are particularly relevant to engineering and water resources analysis. It will provide you with examples of engineering applications of EXCEL that demonstrate the features presented in the workshop. Participants will receive a CD containing all the files used at the workshop and accompanying computer-based video tutorials that cover the workshop topics. Participants can review these tutorials to help them remember the techniques presented. The workshop will be held in a computer-lab with the new EXCEL 2007 version. This will allow users to experience the new EXCEL user interface. An overview of the new features of EXCEL 2007 and their potential use in water management will be presented. Note however, that the topics presented in the workshop are applicable to previous versions of EXCEL.

Water managers often develop spreadsheets for their own use or to be shared with colleagues. Spreadsheets should be easy to use with required problem data input clearly identified and the output easy to understand. A variety of EXCEL’s tools can be used to minimize errors and to minimize the effort required to provide required input or to perform analyses in the spreadsheet. This workshop will focus on the functionality EXCEL provides to meet these goals of Positive User Guidance, Clarity and Correctness.

EXCEL software provides many features that allow the user to develop input controls to make the spreadsheet easy to use and minimize errors. These features include a variety of buttons, list boxes, check boxes and spinner controls. These controls can be used in conjunction with table lookup functions, logical IF tests and conditional formatting to do many things. Further, EXCEL allows the user to record or develop custom macros in Visual Basic for Applications that greatly extend the problem solving power of EXCEL. With a surprisingly small number of Visual Basic for Applications (VBA) commands, users can create their own powerful custom macros and custom scientific or engineering functions.
Learning Objectives:

In this workshop, you will learn:

- How to use List Boxes, Buttons and other user controls combined with Logical Tests, Table Lookup functions, and Conditional Formatting to automate and control user input.

- How to go beyond basic spreadsheet graphs to make dynamic and animated graphs that can display different data sets (with corresponding axis labels) with the click of the mouse. You will learn how to create custom markers for graphs and how to control the information that is displayed on the graph.

- How to use the Filter tool in EXCEL to quickly analyze large sets of data.

- How to record macros and run them with buttons or other graphical objects.

- How to create your own custom macros with looping, logical tests, and pop-up boxes for user input and messages.

- How to use the special features of EXCEL 2007.

Outline:

The workshop will be held in the Viking computer-lab, Room B 205, of the Engineering Building at Colorado State. The format is hands-on sessions built around specific water resources examples. The instructor will demonstrate the required steps and participants then perform the steps under the instructor's supervision. Different spreadsheet examples serve to illustrate the main learning objectives and also serve as guides for the participants in their future EXCEL development. The examples are based upon typical projects used to teach modeling concepts in civil and environmental engineering courses offered at Colorado State University. In addition to the examples, other spreadsheet files are provided to illustrate specific topics. These include user controls, the Filter Tool, hyperlinks, custom functions and look-up tables. All of the major workshop topics are provided as video tutorials.

Instructor:

Dr. Darrell G. Fontane is Director of the International School for Water Resources and Professor of Civil and Environmental Engineering at Colorado State University. He has been developing civil engineering models in spreadsheets and teaching civil engineering students to develop spreadsheet applications since 1989. He has conducted numerous training sessions on water resources systems analysis, decision support systems and computing technologies worldwide. He has presented the EXCEL-LEnT workshop to groups in the US Geological Survey and the US Bureau of Reclamation, at Federal Interagency Modeling Conferences, and internationally in Sao Paulo, Brazil, and in Taejon, South Korea.

Who Should Attend:

This workshop is designed for all water managers, scientists and engineers that regularly use EXCEL. Participants should have a basic familiarity with EXCEL spreadsheets, including the ability to write formulas and create graphs. No prior experience with macros or Visual Basic for Applications programming is required. No experience with EXCEL 2007 is needed. Note that the workshop is limited to 30 participants!

For more information email Darrell.Fontane@ColoState.Edu or call (970) 491-5248.
Registration Form: EXCEL_LEnT Training for Water Managers

Name ________________________________________________________________

E-mail Address ________________________________________________________

Organization/Firm _____________________________________________________

Please include the following information so that we may mail you in advance a visitor pass for parking on the CSU Campus on August 7:

Street _______________________________________________________________________

City _____________________________ State ____________ Zip Code ___________

Telephone _______________________________________________________________

☐ Enclosed in my check for $250.00 payable to Colorado State University

Or

☐ Enclosed is my IMO for $250.00 payable to Colorado State University

All registrations must include a check or IMO payable to Colorado State University. Mail to Darrell G. Fontane, EXCEL_LEnT Workshop, Civil and Environmental Engineering Department, Colorado State University, Fort Collins, CO 80523-1372.

Please choose one of the following options from the following lunch menu:

☐ The Tuscan: Marinated grilled portabella, smoked provolone, red leaf lettuce, tomato, red onion, and roasted red pepper served on a fresh croissant. Includes condiments, pasta salad, fruit salad, gourmet cookie, and a dessert treat.

☐ The Euro: Marinated grilled chicken breast (served chilled), smoked provolone, red leaf lettuce, tomato, and roasted red pepper served on a fresh croissant. Includes condiments, pasta salad, fruit salad, gourmet cookie and a dessert treat.

☐ The Cam Croissant: Deli sliced turkey and ham, peppered bacon, swiss cheese, red leaf lettuce, roasted red pepper, and tomato served on a fresh croissant. Includes condiments, pasta salad, fruit salad, gourmet cookie, and a dessert treat.