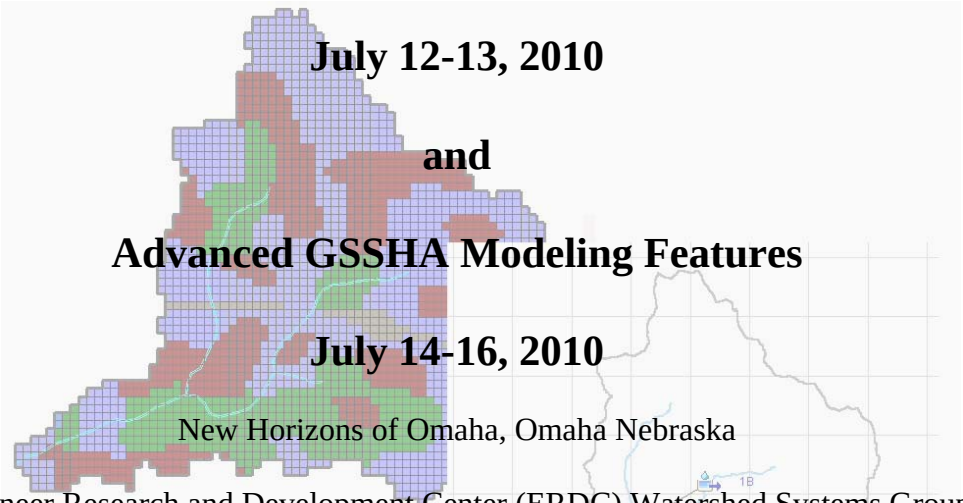
SWWRP Courses Announcement

Introduction to Distributed Hydrologic Modeling Using the USACE Physics Based Distributed Hydrologic Model GSSHA



July 12-13, 2010

and

Advanced GSSHA Modeling Features

July 14-16, 2010

New Horizons of Omaha, Omaha Nebraska

The Engineer Research and Development Center (ERDC) Watershed Systems Group is pleased to announce two System Wide Water Resources Program (SWWRP) sponsored courses on spatial hydrologic modeling within the US Army Corps of Engineers (USACE). Back to back hydrologic modeling courses featuring the Watershed Modeling System (WMS) and the USACE Gridded Surface Subsurface Hydrologic Analysis (GSSHA) models are being offered.

In the introductory course, you will learn the basics of the GSSHA model, developed at ERDC. In the advanced course you will extend your basic modeling knowledge to include groundwater modeling, groundwater/surface water interaction, sediment transport, constituent transport and other GSSHA capabilities. Both courses will feature the spatially distributed modeling components of this system with a combination of lecture and hands on applications. Attendees will use WMS to parameterize GSSHA models in the hands on portion of the training. The basic course will begin with an overview of WMS to ensure that the maximum benefit is derived from the hands on learning portions of the class.

Course attendees in the basic course will:

- Learn the basic spatial data required to parameterize GSSHA distributed models
  - Learn how to find and use spatial geographic data to develop GSSHA models.
  - Learn basics of WMS interface for developing GSSHA gridded models
- Set up and run basic GSSHA distributed runoff models
- Use basic models to analyze changing conditions – land use, BMPs, streams, etc.

Attendees of the advanced course will:

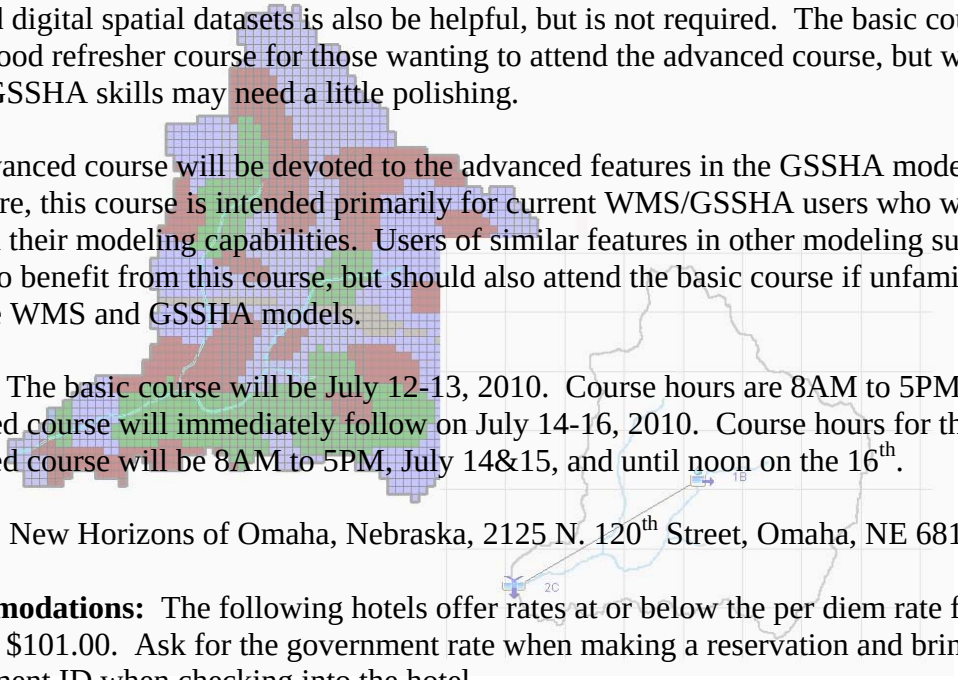
- Lean about advanced GSSHA features
- Use WMS to develop advanced GSSHA models that include

- groundwater,
- sediment transport,
- constituent transport, etc.

Having completed the basic course, you will have working knowledge of the premier spatial hydrology tools available to USACE personnel, WMS and GSSHA. After completion of the advanced course, you will have been exposed to many of the advanced GSSHA features. This will allow you to analyze a large range of hydrologic problems. You will also have a better understanding of how, when, and why you might be able to apply the tools to your own specific studies and needs.

Who Should Attend?

The basic course is intended for those with basic hydrology and hydrologic modeling experience who want to learn about more advanced hydrologic modeling tools. Some prior knowledge of WMS and GSSHA is helpful, but not mandatory. Familiarity with GIS and digital spatial datasets is also be helpful, but is not required. The basic course is also a good refresher course for those wanting to attend the advanced course, but whose WMS/GSSHA skills may need a little polishing.



The advanced course will be devoted to the advanced features in the GSSHA model. Therefore, this course is intended primarily for current WMS/GSSHA users who want to broaden their modeling capabilities. Users of similar features in other modeling suites may also benefit from this course, but should also attend the basic course if unfamiliar with the WMS and GSSHA models.

When: The basic course will be July 12-13, 2010. Course hours are 8AM to 5PM. The advanced course will immediately follow on July 14-16, 2010. Course hours for the advanced course will be 8AM to 5PM, July 14&15, and until noon on the 16th.

Where: New Horizons of Omaha, Nebraska, 2125 N. 120th Street, Omaha, NE 68164

Accommodations: The following hotels offer rates at or below the per diem rate for Omaha, $101.00. Ask for the government rate when making a reservation and bring your government ID when checking into the hotel.

- Country Inn & Suites By Carlson Omaha West
  - 11818 Miami Street, Omaha, NE 68164
  - Phone: (402) 445-4445
  - http://www.countryinns.com
- Hampton Inn Omaha-Westroads Mall
  - 9720 West Dodge Road, Omaha, NE 68114
  - Phone: (402) 391-5300
  - http://www.hamptoninn.com
- Comfort Inn and Suites
  - 8736 West Dodge Road, Omaha, NE 68114
  - Phone: (402) 343-1000

    - http://www.comfortinn.com
- Omaha Marriott
    - 10220 Regency Circle, Omaha, NE 68114
    - Phone: (402) 399-9000
    - http://www.marriott.com
- Visit http://www.contactpointe.com/facility/ne/omahanh.htm for more accommodations.

Meals and Breaks: Lunch and snacks/beverages will be provided. A nominal charge of $13 a day will be charged for each attendee to cover these costs. Breakfast and dinner will be on your own.

Activities: Omaha has a zoo, indoor and outdoor water parks, historical sites, beautiful gardens, golf courses. The downtown Old Market area has a variety of dining, art, music, and cultural activities http://www.oldmarket.com/index.asp. For more information see the Omaha visitors site http://www.visitomaha.com.

Costs: The only cost for the course is a nominal $13 per day for lunch and breaks. This fee will be collected at the beginning of each course.

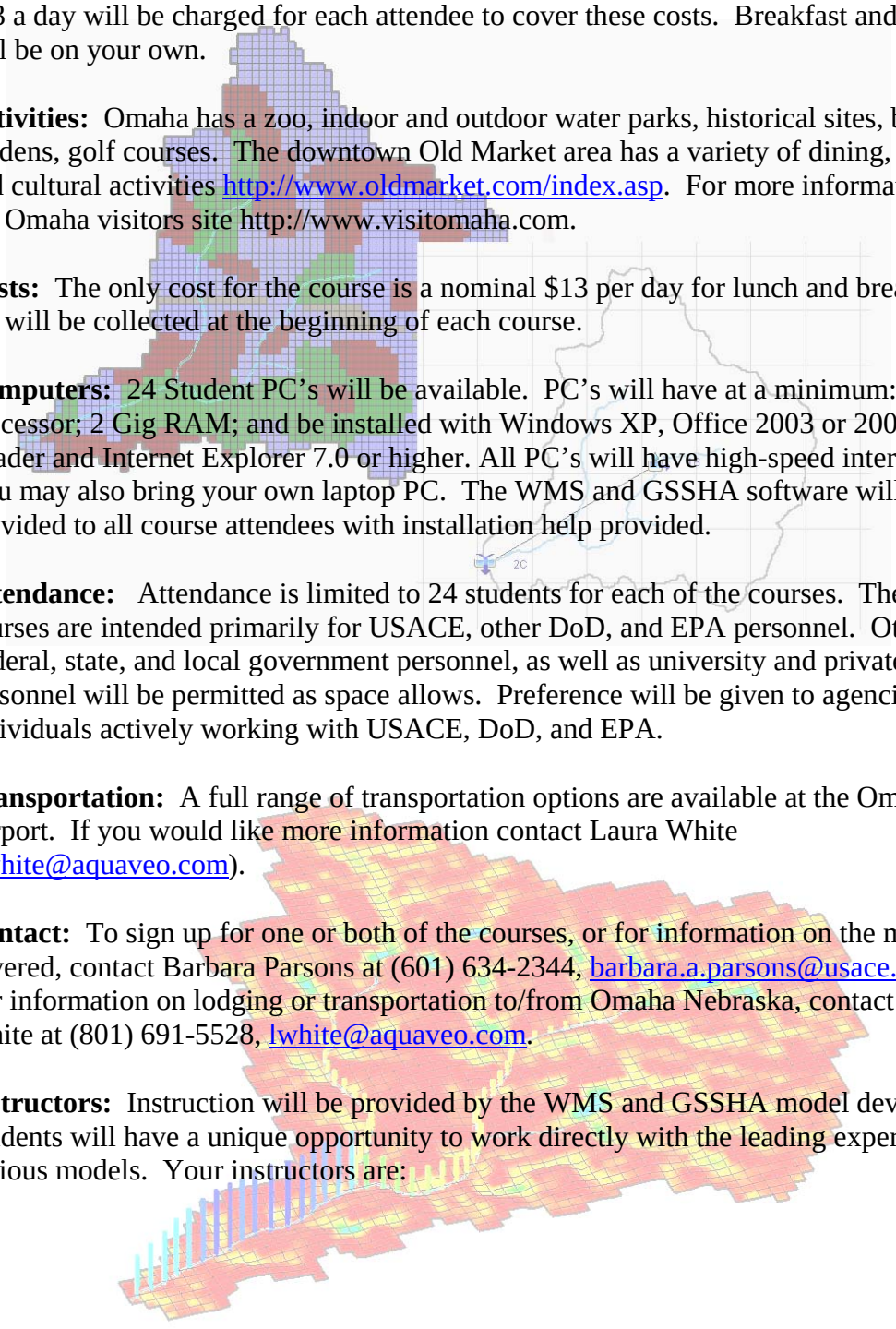
Computers: 24 Student PC's will be available. PC's will have at a minimum: 2 GHz processor; 2 Gig RAM; and be installed with Windows XP, Office 2003 or 2007, Acrobat Reader and Internet Explorer 7.0 or higher. All PC's will have high-speed internet access. You may also bring your own laptop PC. The WMS and GSSHA software will be provided to all course attendees with installation help provided.

Attendance: Attendance is limited to 24 students for each of the courses. These courses are intended primarily for USACE, other DoD, and EPA personnel. Other Federal, state, and local government personnel, as well as university and private agency personnel will be permitted as space allows. Preference will be given to agencies and individuals actively working with USACE, DoD, and EPA.

Transportation: A full range of transportation options are available at the Omaha Airport. If you would like more information contact Laura White (lwhite@aquaveo.com).

Contact: To sign up for one or both of the courses, or for information on the materials covered, contact Barbara Parsons at (601) 634-2344, barbara.a.parsons@usace.army.mil. For information on lodging or transportation to/from Omaha Nebraska, contact Laura White at (801) 691-5528, lwhite@aquaveo.com.

Instructors: Instruction will be provided by the WMS and GSSHA model developers. Students will have a unique opportunity to work directly with the leading experts on the various models. Your instructors are:



Dr. Charles W. Downer, PE - Research Hydraulic Engineer, USACE-ERDC-CHL. Dr. Downer is a leader and innovator in the development and application of distributed hydrologic models. Dr Downer is one of the original developers of the GSSHA model, and as such has also played an important part in the development of the WMS interface, particularly in the area of distributed modeling in support of GSSHA. Dr. Downer leads the development, application, and instruction of the GSSHA model.

Dr. E. James Nelson – Professor, Department of Civil Engineering, Brigham Young University. Dr. Nelson is the architect and director of the WMS interface development. He is also the author of the WMS reference manual and tutorials. Dr. Nelson has taught hydrologic modeling courses at the university level and around the world for over 15 years. He has published several papers in the field of hydrologic modeling and maintains an ongoing research program to improve hydrologic modeling methods. Dr. Nelson is currently teaching a course on spatial hydrologic modeling at BYU and also teaches a course on GIS applications of Civil Engineering. He brings a wealth of teaching knowledge to the courses.

Dr. Fred L. Ogden, PE, PH - Professor Cline Distinguished Chair of Engineering, Environment and Natural Resources Department of Civil & Architectural Engineering and Haub School of Environment and Natural Resources University of Wyoming. Dr Ogden is one of the pioneers in the field of distributed hydrologic modeling. He is one of the original developers of the GSSHA model and of the CASC2D model, the predecessor to GSSHA. Many of the features in GSSHA were taken from or patterned after the work of Dr. Ogden within the CASC2D model. Dr. Ogden worked on and oversees various components of the GSSHA model and uses GSSHA for numerous research applications.

Mr. Aaron Bryd, PE – Research Hydraulic Engineer, USACE-ERDC-CHL. Mr. Byrd is a primary GSSHA developer, having developed numerous important aspects of the model, such as the automated calibration and mapping table input features. In addition to Mr. Byrd being a GSSHA developer, he previously was a WMS developer while a student at BYU. Mr. Byrd also has applied the GSSHA model to widely varying studies – from land change to wetland restoration. Mr. Byrd is the leading expert in the use of WMS to develop GSSHA models for various applications.

Dr. Murari Paudel – Former Graduate Student, Department of Civil and Environmental Engineering, Brigham Young University. Dr. Paudel graduated from Tribhuvan University in Kathmandu, Nepal with an emphasis in hydraulics. He now works for Aquaveo, the company which writes the WMS software. He has worked on many of the training materials for the GSSHA course. He has recently finished his PhD at BYU, with an emphasis on spatial hydrologic modeling. He has taught both hydraulic and hydrologic modeling classes at BYU and Nepal, and some of his research on spatial modeling comparisons will be presented at this course.