

REGISTRATION FORM
STREAM INVESTIGATION, STABILIZATION & DESIGN
WORKSHOP
WITH AN EMPHASIS ON INNOVATIVE APPROACHES TO STREAM
STABILIZATION AND RESTORATION

This free workshop is sponsored by the U.S. Army Corps of Engineers Water Operations Technical Support (WOTS) Program and the New York District Corps of Engineers. This workshop is limited to 50 people.

TIME: Each day 9:00 am-5:00pm, October 23-25, 2007 will be in Manhattan, NY and Oct 26 will be near Binghamton, NY.

CLASSROOM: 26 Federal Plaza, **Room 3305**, New York, New York 10278

ACCOMODATIONS: Hotel Accommodations-TBA

INSTRUCTOR: Dave Derrick, Research Hydraulic Engineer with the Corps of Engineer's Engineering Research & Development Center's Coastal & Hydraulics Laboratory (ERDC-CHL). The objectives of this workshop are to introduce the methodology and procedures for initiating, planning, analyzing, and ultimately designing long-term sustainable river and stream stabilization/restoration projects. Innovative, environmentally sensitive, and cost-effective approaches to channel restoration will be discussed. Comprehensive case studies will also be presented. See enclosed draft agenda for details. A day of field trips to local stream sites will be conducted. Rain gear and appropriate field clothes are recommended for the field trip. Two weeks before class registered participants will be e-mailed instructions on how to download class notes from a dedicated FTP site. Participants can print & bring notes to class, or bring a laptop.

I would like to register for this workshop:

NAME: _____

E-MAIL: _____

AGENCY: _____

ADDRESS: _____

PHONE: _____ FAX: _____

Please return this form by e-mail to: [Bethany Bearmore](mailto:Bethany.Bearmore),

e-mail: Bethany.M.Bearmore@usace.army.mil



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**OCTOBER 23-25, 2007
NEW YORK CITY, NY**

**& OPTIONAL HANDS-ON FIELD DAY NEAR BINGHAMTON, NY Oct 26, 2007
AGENDA**

DAY 1 – OCT. 23, 2007 – NEW YORK CITY

9:00-9:20 **Student and Teacher Introductions**

9:20-10:15 **The Philosophy of Restoration (Goal and Function Based Design),
Project Planning, Monitoring, & How Streams Dissipate Energy**

10:15-10:30 **BREAK**

10:30-12:00 **The Channel Evolution Model (CEM) & Grade Control**

12:00-1:00 **LUNCH**

1:00-2:00 **Everything Outside the Active Channel** - The Importance of the
Riparian Buffer Zone, Watershed Management Problems, Rain Gardens,
Sediment Issues, etc.

2:00-4:00 **Resistive and Continuous Bank Stabilization Methods** (with break)

4:00-5:00 **Recently Developed Innovative Techniques to Restore Function to
Aquatic and Terrestrial Areas**

DAY 2 – OCT. 24, 2007– NEW YORK CITY

9:00-9:10 **Announcements and Housekeeping**

9:10-10:30 **Redirective, Indirect, & Discontinuous Methods:** Retards, Permeable
Dikes, Jacks, Vane Dikes, Impermeable Structures Normal to Flow
(Transverse Dikes, Contraction Dikes, Spur Dikes Both High & Low and
Short & Long) L-Head & T-Head Dikes, Downstream Angled Structures,
Upstream Angled Structures (Rock Vanes), the Bendway Weir, and

Combinations of Redirective and Resistive Methods (with break).

10:30-12:00 **Bioengineering Philosophy and Methods for Streambank Protection Using Native Plants**

12:00-1:00 **LUNCH**

1:00-1:15 **How to Choose a Bank Protection Method**

1:15-2:45 **Two Case Studies** - Putting it All Together – Catt Creek @ Savage Road Highway Protection Project (resistive, redirective, & bioengineering on an incised channel with an engineered floodplain bench with integrated vernal pools and wetlands), and The McKinstry Creek Complete Channel and Floodplain Realignment Project

2:45-3:15 **The Abrupt Planform Modifiers** - 5 methods to replicate small radius 90 degree bends, impinging flow situations, and bends that exit into the middle of the next bend (no crossing in between) {Regular, Wrong-Way and Twin Spin Boil-Up Pools, & Angle and Grand Slams}.

3:15-3:30 **Project Construction**

3:30-4:45 **How to Conduct a Field Investigation of a Streambank Erosion Problem**

- a. Fundamentals of Fluvial Geomorphology
- b. How to Read a Stream
- c. Field Equipment & Safety

4:45-5:00 **Review (Dave's Top 10, 46 Ways to Stay out of Trouble)**

DAY 3 – OCT. 25, 2007 – NEW YORK CITY

FIELD INVESTIGATIONS-“Every stream is a classroom” DLD.

9:00-4:30 **Field Trip:** Site Analyses of the several streams

- a.) Development of project performance goals (function based)
- b.) Analysis of existing, historical, and future flow and erosion processes and conditions
- c.) Flow visualization of proposed project (based on project goals)
- d.) Development of several stream stabilization conceptual designs
- e.) Analyze overall effects of chosen conceptual design on the stream system and riparian corridor

Site 1:

Site 2:

DAY 4 – OCT. 26, 2007-FIELD INVESTIGATIONS-EAST OF BINGHAMTON, NY (APPROXIMATELY 180 MILES FROM NYC). Everyone please bring your own lunch, drinks, work gloves, safety vest, and hard hat.

- 9:00-12:00 **Beldon Brook @ Interstate 88 stabilization** site (Engineered Rocked Riffle, bridge protection, vegetated minimal riprap with engineered floodplain bench, and Bendway Weirs. This is hands-on as we will plant approx. 100 RPM rooted stock plants. (bring fluids and lunch). Directions: From Binghamton go east on I-88, take Exit 6.. Go west on Route 7. The Belden Brook site is on your left where Bates Road dead ends into Route 7.
- 12:00-1:00 **Travel to and analyze Osborne Hollow Creek @ State Highway 7 stabilization** site (vegetated riprap for highway protection). The Osborne Hollow Creek site is about 7 miles further west on Route 7. When you go under a large old stone RR bridge you are very close. Look for the billboard on the right. You can park there and walk a short distance down the hill. Osborne Hollow Creek runs parallel to Route 7 in this area.
- 1:00 Wrap-Up Workshop
- END OF WORKSHOP**

WORKSHOP OVERVIEW AND GOALS

- * Provide a consistent philosophy of bank stabilization design, with an emphasis on understanding the stream as a complex inter-related system, and understanding both local and system-wide processes and problems.
- * Provide an overview of the concepts of grade control and the Channel Evolution Model (CEM)
- * Provide instruction in developing appropriate project goals
- * Teach bank protection methods and how to choose the appropriate method or combination of techniques
- * Clarify the importance of project constructability, monitoring, and maintenance
- * Teach students how to read a stream (with instruction in field equipment needs and safety), and how to perform a comprehensive analysis of a streambank erosion problem.
- * Reinforce the classroom lectures by performing a series of in-the-field site

analyses, understanding the role of project goals in the development of conceptual flow analyses, and designing stabilization plans that relate to the project performance goals.

- * Provide class handouts and notes, a comprehensive glossary, and avenues for help