

STREAM INVESTIGATION, STABILIZATION & DESIGN WORKSHOP

***WITH AN EMPHASIS ON INNOVATIVE APPROACHES TO
STREAM STABILIZATION AND RESTORATION***

September 28-30, 2010

Space Limited: RSVP by September 22nd, 2010

(607)739-2009 or (607)739-4392

Southport Fire Station

1001 Carl Street

Elmira, NY 14904

(Corner of Cedar & Carl St. Off Clemens Center Parkway)

WORKSHOP OVERVIEW AND GOALS

Develop a philosophy of stream bank stabilization design that emphasizes an understanding of the stream as a complex inter-related system that encompasses both local and system-wide processes and problems.

Apply the concepts of grade control and the Channel Evolution Model (CEM).

Get tips on how to develop appropriate project goals.

Learn about innovative bank protection methods and how to choose the appropriate method or combination of techniques.

Discuss the importance of project constructability, monitoring, and maintenance

Learn how to read a stream and analyze a streambank erosion problem with an experienced practitioner.

Perform 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.

Receive a CD of useful handouts, visuals, and a comprehensive glossary.

**THE FIRST DAY WILL BE TAILORED TOWARDS HIGHWAY DEPARTMENTS-Also Welcome all
3-days**



STREAM INVESTIGATION, STABILIZATION & DESIGN WORKSHOP

DAY 1

Tuesday, September 28, 2010

Location: Southport Fire Station 1001 Carl Street Elmira, NY

- 8:00 - 8:20 Student and Teacher Introductions
- 8:20 - 9:15 THE PHILOSOPHY OF RESTORATION (Goal and Function Based Design, Project Planning, Monitoring, & How Streams Dissipate Energy)
- 9:15 - 9:30 **BREAK**
- 9:30 - 11:00 THE CHANNEL EVOLUTION MODEL (CEM) & ENVIRONMENTALLY COMPATIBLE GRADE STABILIZATION
- 11:00 - 12:00 **LUNCH-Will be Provided**
- 12:00 - 1:30 RESISTIVE & CONTINUOUS BANK STABILIZATION METHODS (with break). Includes Longitudinal Peaked Stone Toe Protection (LPSTP), Longitudinal Fill Stone Toe Protection (LFSTP), keys, stone, filters, & Mini Case Studies: Grand River; Duck Creek; Catt @ Savage; & Missouri River @ Lewis & Clark.
- 1:30 - 3:00 REDIRECTIVE METHODS: Includes: Rock Vanes, J-Hooks, Bendway Weirs, & combinations of Redirective and Resistive Methods (with break). Mini Case Studies: Little Blue River; Chautauqua Cr @ Dave Spann's; Catt @ Savage; Neosho River; & Sulphur Creek @ Dunnigan Burn Dump.

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DAY 2

Wednesday, September 29, 2010

Location: Southport Fire Station 1001 Carl Street Elmira, NY

- 8:00 - 8:10 Announcements and Housekeeping-field trip tomorrow
- 8:10 - 9:45 **BIOENGINEERING PHILOSOPHY & PLANTING VEGETATION WITH LARGE YELLOW MACHINES TO RESTORE FUNCTION TO AQUATIC & TERRESTRIAL AREAS.** Includes Slit Trench & Slit Brush Layering; Willow Poles, Willow Curtains; Transplants @ Monkey Run; Half Drowned Bushes; and Traffic Control Stones. (with break)
- 9:45 - 10:30 **WATERSHED ISSUES**
- 10:30 - 11:00 **AUDIENCE CHOICE-WHICH CASE STUDIES ??** – Jungle Bank Protection (Goodwin Creek); Engineered Floodplain Bench (Haw Creek); Really low Bendway Weirs U can't hardly see (Beaver River); Plants for an urban concrete lined channel (Caz @ Stephenson Street Bridge); Live Siltation & Living Dikes (Elton Cr.); Encapsulated Soil (Accotink Cr); reduction of P & K in shallow groundwater Little Bogue); or natural looking stabilization (Dingmans Cr. Site 4, or Poplar River)
- 11:00 - 12:00 **LUNCH-Will be Provided**
- 12:00 - 12:30 18 Mile Creek Restoration Video, & Recently Developed Innovative Techniques for Stream and Riparian Areas, includes Locked Logs, Living Dikes, Planting on a Grid, Hydraulic Cover Stones, & Building a Pool on McKinstry.
- 12:30 - 1:15 **THE ABRUPT PLANFORM MODIFIERS** - Five 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 Slams and Grand Slams}.
- 1:15 - 2:00 **DAVE'S TOP 10, 46 WAYS TO STAY OUT OF TROUBLE !!!**
- 2:00 - 2:30 **PROJECT CONSTRUCTION**
- 2:30 - 3:30 **HOW TO CONDUCT A FIELD INVESTIGATION OF A STREAM**
- a. Fundamentals of Fluvial Geomorphology
 - b. How to Read a Stream
 - c. Field Equipment & Safety

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DAY 3

**Thursday, September 30 2010- Location Southport Fire
Department 1001 Carl Street Elmira, NY**

8:00 - 4:00 Site Analysis of Various Stream Sites

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

Sites to be Determined

Lunch will be Provided