

# Countermeasure Design for Bridge Scour and Stream Instability

## DESCRIPTION:

This course provides an overview of countermeasures to highway related failures from the effects of stream instability, scour, erosion and stream aggradation and degradation problems. Material for the 3-day course comes primarily from Hydraulic Engineering Circular (HEC), "Bridge Scour and Stream Instability Countermeasure – Experience, Selection, and Design Guidance" (HEC-23). A half-day workshop on countermeasure design is included.

## OBJECTIVES:

Upon completion of the course, participants will be able to:

- Develop a plan of action for a scour critical bridge.
- Propose countermeasures for stream instability and scour problems.
- Identify countermeasures for bridge scour and stream instability using the HEC-23 countermeasures matrix.
- Design selected countermeasures with HEC-23 design guidelines.

## TARGET AUDIENCE:

Federal, State, and local highway hydraulic, and geotechnical engineers and bridge inspectors responsible for maintaining the integrity of highway bridges against possible hydraulic related problems. Consultants who do bridge engineering work are encouraged to attend.

## INSTRUCTORS:

**Dr. Peter Lagasse** is a senior vice president with Ayres Associates in Fort Collins, Colorado. Since 1989, Dr. Lagasse has been principal instructor for FHWA projects to develop and present training courses on stream stability and scour at highway bridges. As part of these projects, he is senior author of HEC-20, "Stream Stability at Highway Structures" and HEC-23, "Bridge Scour and Stream Instability Countermeasures." He is also a technical contributor to HEC-18, "Scour at Bridges." He prepared the Instructor Guide and Participant Workbook that support the National Highway Institute Training Course on Stream Stability and Scour at Bridges. In cooperation with FHWA reviewers, he recently completed extensive revisions of this course and developed NHI's new countermeasure design course.

**Dr. Larry Arneson** is a Senior Hydraulics Engineer with the Federal Highway Administration's Western Resource Center. His areas of expertise include bridge scour, stream stability, sediment transport, and computer modeling. He has contributed to the development of HEC-18, "Scour at Bridges," HEC-20, "Stream Stability at Highway Structures," and HEC-23, "Bridge Scour and Stream Instability Countermeasures." Dr. Arneson has contributed extensively to the planning and development of the National Highway Institute's courses and training materials that teach the content of the above referenced publications. He has been involved in numerous presentations of the course materials. Dr. Arneson is one of FHWA's senior policy experts on the national bridges scour assessment program.

### Registration Procedure

- 1) Please contact Juli Kobayashi at 956-9006, 956-8851 (FAX) or [juli@eng.hawaii.edu](mailto:juli@eng.hawaii.edu) by Monday, **September 23, 2002**.
- 2) Attendance is limited, and preference is given to local government employees.
- 3) Private company participation is on a space available basis at a fee of \$395.00. Make check payable to "Research Corporation of the University of Hawaii" c/o Hawaii LTAP. We will fax you a letter indicating whether a seat has been reserved for you by September 26, 2002.

### Cancellations

Please contact us if you must cancel your registration or if someone will be substituting for you. Refunds will be made if notice of cancellations is received at least 3 workdays prior to the workshop date.

### Parking

Parking for the East West Center is \$4/day. If you would like a parking pass please contact us by Monday, September 23, 2002. Make checks payable to "Research Corporation of the University of Hawaii" c/o Hawaii LTAP and mail to:

Hawaii LTAP  
University of Hawaii  
Dept of Civil Engineering  
2540 Dole St, Holmes 383  
Honolulu, HI 96822  
Attn: Gail Ikeda

# Countermeasure Design for Bridge Scour and Stream Instability

**October 8 - 10, 2002**

University of Hawaii,  
East West Center, Jefferson Hall,  
Asia Room

Oct. 8                    8:30 am – 5:00 pm  
Oct. 9 & 10            8:00am – 4:30pm

Workshop sponsored by the  
**Hawaii Local Technical Assistance  
Program**

in cooperation with the  
*Hawaii State Department of Transportation,  
University of Hawaii's Department of Civil  
Engineering and the Federal Highway  
Administration*

### Hawaii Local Technical Assistance Program

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