



The Official

OREGON SECTION AEG NEWSLETTER

October Meeting Details

Date: Tuesday October 20

Location: Madison Grill

1109 SE Madison St.

Portland, OR

6:00 pm Social

7:00 pm Dinner

8:00 pm Presentation

Dinner: Salad, Pasta, Chick & Veg.

\$15 Dinner (\$5 Students)

Reservations:

mwegner@cornforthconsultants.com
with "AEG Reservation" in
the subject line or 971-222-
2047 by 4pm Thurs. Oct.
15th.

**There is a \$2 surcharge for
those who do not reserve by
the deadline.**

Upcoming Meetings:



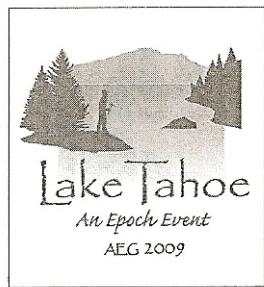
The October Meetings Guest Speaker is Jeff Conway— From Modeling to Monitoring: Streambed Scour at Bridges in Alaska

The U.S. Geological Survey and Alaska Department of Transportation and Public Facilities have been cooperatively studying streambed scour at bridges in Alaska for more than 10 years. Streambed scour was initially evaluated at 325 bridges using a multiphase approach. The first phase used existing data and regional variables to construct hydraulic models and assess scour based on federally recommended techniques. The results from the first phase were used to select 57 sites where field data and more intensive modeling was required. Field data that included channel cross sections, discharge measurements, and geomorphic data were collected for this second phase. More complex hydraulic models were developed at these locations to assess and evaluate scour. These results were used to establish a real-time streambed scour monitoring network at selected bridge sites.

Five years of stage and bed-elevation data have been collected at 20 bridge sites throughout Alaska to assess streambed-scour in near real-time and to identify shortcomings of existing methods used to estimate scour at bridges. These sites range from small, steep creeks to large glacial rivers. Bridges have been instrumented with sonars at the pier nose for measuring distance to the streambed and transducers on the pier or bridge deck to measure stage. The data are then transmitted via satellite every 6 hours and uploaded to a website that provides graphical presentation of bed and water-surface elevations at the pier (http://ak.water.usgs.gov/usgs_scour). Data collected at these sites illustrates short-term scour and fill as well as longer duration channel degradation and aggradation cycles. Several sites showed little change in bed elevation, despite being subjected to 100-year recurrence interval flooding. Lack of streambed scour at these sites is valuable information because they were classified as scour-critical bridges using data generated by hydraulic models and predictive scour equations.

Observed changes in bed elevation are attributed to (1) short-term scour and fill during high flows, (2) seasonal aggradation and degradation, or (3) channel migration. Data from the glacier-fed Knik River near Palmer, Alaska, for example, show an annual cycle of channel aggradation and degradation punctuated by shorter periods of scour and fill. The annual vertical bed-elevation change exceeds 6 meters and is an interplay of sediment supply, discharge, and instream hydraulic structures. Pier footings and subfootings were exposed three separate times from 2002-2006 and infilling occurred afterwards. These cycles would have been missed by traditional bridge surveys. Our multi-phased assessment of bridge scour identified locations where scour is a concern and the scour-monitoring data provide state engineers with valuable data that is used to ensure the safety of the structure during high flows. The data sets from these dynamic rivers indicate that scour can result from a reaction to changes in hydraulic variables, timing and duration of streamflow, and the source of the high flow. These factors are not typically included in the engineering assessment of streambed scour and result in disparities between estimated and observed scour.

Bio: Jeff Conway is U.S Geological Survey Hydrologist, Alaska Science Center, has ten years of experience evaluating and monitoring streambed scour at bridges. He has completed over 50 scour investigations using 1, 2, and 3 dimensional hydraulic models and operates the largest scour monitoring program in the U.S. He also specializes in collecting hydroacoustic data for visualization of complex 3-dimensional velocity flow fields at hydraulic structures and for verification of hydraulic models. He is a graduate of the University of Alaska Fairbanks and Portland State University.



AEG Oregon Section Attends an Epoch Event !

PSU students Serin Duplantis and Kate Mickelson win AEGs national Stout Scholarships pictured here with AEG President Mark Molinari.



Professor Scott Burns, Rachel Pirot, Serin Duplantis, Tom Kuper, and Kate Mickelson enjoy an evening of wine tasting at this years special event held at the Edgewood Tahoe Resort.



Message From The Chair

Another month and another note from the chair. If you have been as busy as I have been year, this has been a year without a summer - only traveling and reviewing locks and dam throughout the Mississippi valley. AEG's Annual Meeting was held at Lake Tahoe this year. I was off and traveling

and was unable to attend. However, thanks to Matt Brunengo, who stepped in, Oregon Section was represented at the business meeting. Now it is October so it is the time to think about GSA 2009 Annual Meeting being held in Portland. I hope to be able to attend a few of the sessions and may see

some of you there. Next Section meeting is Tuesday during the week GSA is meeting in Portland. I plan to attend.

Oregon Section AEG Chair
Dave Schofield



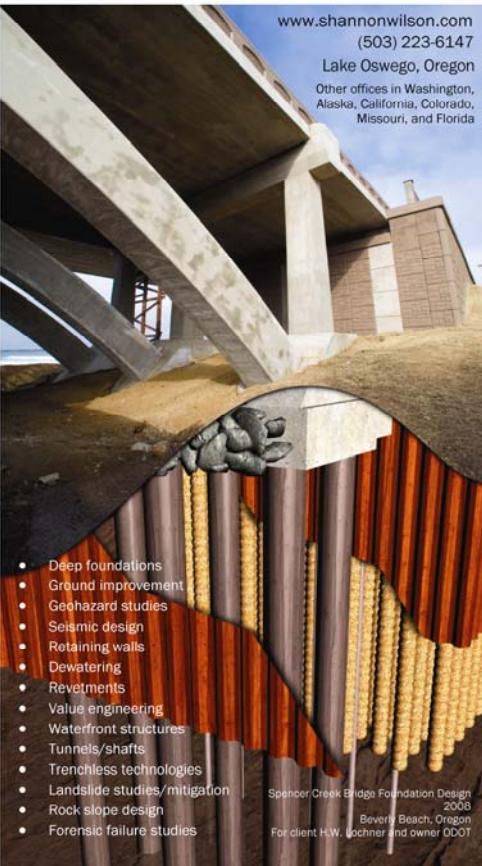
"Keen observation is at least as necessary as penetrating analysis"

Karl Terzaghi



SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

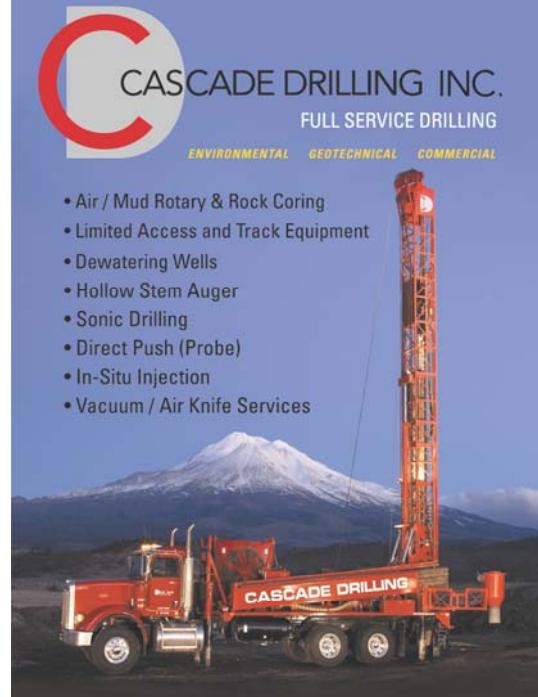
www.shannonwilson.com
(503) 223-6147
Lake Oswego, Oregon
Other offices in Washington, Alaska, California, Colorado, Missouri, and Florida



- Deep foundations
- Ground improvement
- Geohazard studies
- Seismic design
- Retaining walls
- Dewatering
- Revetments
- Value engineering
- Waterfront structures
- Tunnels/shafts
- Trenchless technologies
- Landslide studies/mitigation
- Rock slope design
- Forensic failure studies

Spencer Creek Bridge Foundation Design
2008
Beverly Beach, Oregon
For client H.W. Lochner and owner ODOT

CASCADE DRILLING INC.
FULL SERVICE DRILLING
ENVIRONMENTAL GEOTECHNICAL COMMERCIAL



- Air / Mud Rotary & Rock Coring
- Limited Access and Track Equipment
- Dewatering Wells
- Hollow Stem Auger
- Sonic Drilling
- Direct Push (Probe)
- In-Situ Injection
- Vacuum / Air Knife Services

CASCADE DRILLING, INC - PORTLAND
13600 SE AMBLER RD
CLACKAMAS, OR 97015
Office: (503) 775-4118
Fax: (503) 775-4099
www.cascadedrilling.com

SEATTLE (425)485-8908 **PORTLAND** (503)775-4118 **SACRAMENTO** (916) 638-1169 **LOS ANGELES** (562) 929-8176



NGA Northwest Geophysical Associates

Geotechnical
Environmental
Groundwater

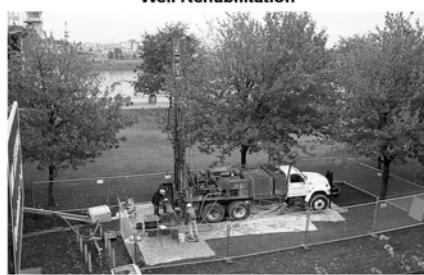
**Get more information
about the subsurface**

(541) 757-7231 www.nga.com

Geo-Tech Explorations
A Division of Boart Longyear Company

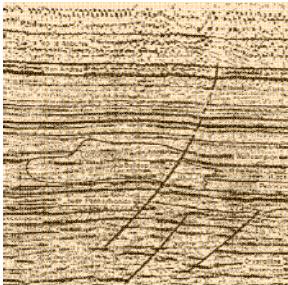
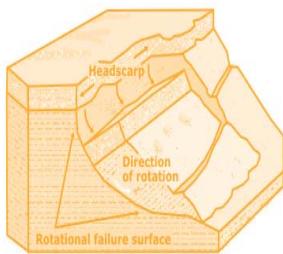
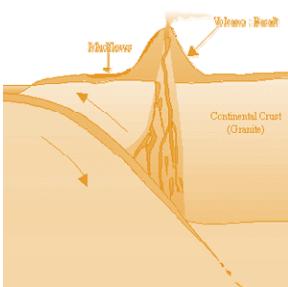
Providing Professional Drilling Services Since 1981

Hollow Stem Auger / Mud Rotary / Air Rotary
Geoprobe / CPT / Bucket Auger / Cable Tool
Reverse Circulation / Pump Services
Well Rehabilitation



Construction Dewatering Wells
Environmental Investigations
Large Diameter Water Wells
Geotechnical Investigations
Construction Borings
Aquifer Tests

Phone: 800-275-3885 or 503-692-6400
Fax: 503-692-4759



Western States Soil Conservation, Inc.

There is no limit to the depths we will go



Geotechnical and Environmental Drilling Services
PO BOX 428 ■ 3100 Schmidt Lane ■ Hubbard, Oregon 97032
(503) 982-1777 Office ■ (503) 982-8220 Fax
westernstates@centurytel.net ■ www.westernstatessoil.com

Thanks For Supporting AEG !

Amec Earth and Environmental, Inc.

Kuper Consulting

Columbia Geotechnical

Oregon Department of Forestry

Cornforth Consultants

Oregon Department of Geology and Mineral Industries

Delta Environmental

Parametrix

Geocon NW

Portland State University

This image is the second page of a brochure for GeoPotential. It features a stylized logo of a topographic contour map in the top left. The top right contains the company's contact information. The main title 'SUBSURFACE MAPPING SURVEYS' is centered in large, bold, underlined letters. Below the title, five survey service categories are listed with corresponding icons: 'GROUND PENETRATING RADAR SURVEYS' (radar truck), 'MAGNETOMETER & ELECTROMAGNETIC SURVEYS' (magnetometer), 'GRAVITY SURVEYS' (gravimeter), and 'RESISTIVITY SURVEYS' (resistivity meter). A central photograph shows a white mobile laboratory van parked in a field. To the right, a list of project types and survey applications is provided, each with a corresponding underlined section. At the bottom right is a geophysical resistivity section plot with a color scale and electrode spacing information.

Section Officers & Committee Chairs



Chair:
Dave Scofield
ACOE
scofield@onemain.com



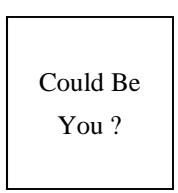
Program Co-Chair:
Michael Marshall
Parametrix
mmarshall@parametrix.com



Legislature Chair:
Dorian Kuper
Kuper Consulting
dorian@kupercon.com



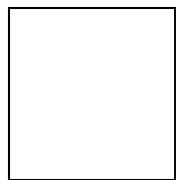
Chair Elect:
Lisa Glonek
Delta Environmental
lglonek@deltaenv.com



Program Co-Chair:
Vacant



Continuing Education Liaison:
Andrew Harvey
drehw1031@earthlink.net



Treasurer:
Kevin Schleh
Geocon NW
Kevin@GeoConNW.com



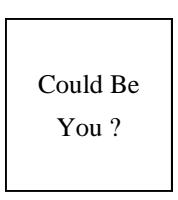
Membership Chair:
Ruth Wilmot
Columbia Geotechnical, Inc.
ruthwilmot@comcast.net



Newsletter Editor:
Bill Burns
DOGAMI
bill.burns@dogami.state.or.us



Secretary:
Robin Johnston
Amec Earth & Environmental
Robin.johnston@amec.com



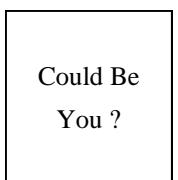
Field-Trip Chair:
Vacant



Webpage Editor:
Darren Beckstrand
Cornforth Consultants
dbeckstrand@cornforthconsultants.com
PSU Student Chapter President: Kate Mickelson
kmickels@pdx.edu



Past Chair:
Jason Hinkle
ODF
jhinkle@odf.state.or.us



History Chair:
Vacant



The Oregon Section Newsletter

OREGON SECTION AEG NEWSLETTER is published monthly from September through May. Subscriptions are for members of AEG affiliated with the Oregon Section or other Sections, and other interested people who have requested and paid a local subscription fee of \$10.00. E-mail subscriptions are free. News items are invited and should be sent to: Bill Burns, OR Section AEG Newsletter Editor, Oregon Department of Geology, 800 NE Oregon Street, Portland, OR 97232, e-mail: <bill.burns@dogami.state.or.us>, phone (971) 673-1555. Electronic media is preferred. Deadline for submittal is Friday three weeks before each meeting. Advertising: business card \$100/yr; 1/4 page \$200/yr; 1/2 page \$350/yr. Please notify Bill if you have a change to your email or mailing address.

The Association of Engineering Geologists (AEG) contributes to its members' professional success and the public welfare by providing leadership, advocacy, and applied research in environmental and engineering geology. AEG's values are based on the belief that its members have a responsibility to assume stewardship over their fields of expertise. AEG is the acknowledged international leader in environmental and engineering geology, and is greatly respected for its stewardship of the profession.

