

The Oregon Chapter of the Association of Environmental & Engineering Geologists (AEG) is offering a two-day course taught by Ken Neal with support from Ryan Cole, Douglas A. Anderson, and Nicholas Farny:

THE FIELD-DEVELOPED CROSS SECTION: A SYSTEMATIC METHOD OF PORTRAYING DIMENSIONAL SUBSURFACE INFORMATION AND MODELING FOR GEOTECHNICAL INTERPRETATION AND ANALYSIS

Location and Dates

- June 12 (lecture) – FHWA Federal Lands office, 610 East Fifth Street, Vancouver, WA 98661 (location link: [Western Federal Lands Highway Division Office](#)) – **Real ID, State Issued Enhanced Driver’s License, or Passport required for building entry**
- June 13 (field) – Fallen Leaf Lake Park, Camas, WA (location link: [Park Location](#))

Cost

- **AEG Student Members** **\$50**
- **AEG Members** **\$225**
- **Non-AEG Members** **\$275**

Note: Preference will be given to AEG Members and AEG Student Members. Non-AEG members will be assigned on first come first served basis.

Class Description and Schedule

This two-day short course will cover the field-developed cross-section method, originally developed by the late Doug Williamson to provide a systematic approach and reproducible method of collecting field data for interpretation and portrayal of subsurface information. The field-developed cross-section provides a visual tool for evaluation and analysis of conditions pertinent to foundations, earthwork, slopes and slope stability, use of materials, and subsurface drainage.

The course includes a full-day of classroom instruction to cover field soil and rock classification in the lab and an introduction on the field-developed cross-section methodology. This is followed by a full day of field application at Fallen Leaf Lake Park in Camas, Washington. This course is recommended for geologists and geology students, engineering geologists, hydrogeologists, geotechnical and geological engineers, and others who deal with site-specific characterization of soil, rock, and ground water at scales appropriate for use in analysis and design. Each class participant will receive a handbook describing the system.

This is an updated version of the short courses that were presented at Western Washington University in 1994, the AEG annual meetings in Seattle and San Jose (1998 and 2000, respectively), at Central Washington University in 2011 and 2014, for the AEG Nisqually Chapter in 2019, and for FHWA Western Federal Lands in 2023.

Day 1 - FHWA Federal Lands office

Morning (9 AM-12 Noon): FHWA Western Federal Lands office: Introduction to the Unified Soil Classification System (USCS), developed by Arthur Casagrande in the late 1940s, including a lecture outlining the laboratory procedure, and a lecture and hands-on training using the USCS Visual-Manual field procedure (ASTM D2488). This will be followed by a brief introduction to the Unified Rock Classification System developed by Doug Williamson as an example of one of the rock classification systems used.

Lunch will be on your own. You can bring your own or purchase a meal off-site.

Afternoon (1-4 PM): Introduction to the Field-Developed Cross-Section mapping methodology and applications, developed by Doug Williamson.

Day 2 - Fallen Leaf Lake Park in Camas, WA (Meet at the Park Picnic Shelter – see location link above for directions):

9 AM to 3 PM (bring your own lunch): Field application of the system on a slope at the Park.

3-5 PM: Wrap-up, including creation of a base map using cross-section data, and discussion of potential site-specific applications using data gathered.

Maximum Number of Participants: 24

Registration via Events.com.

Instructor: Kenneth G. Neal, LG, LEG (retired)

Mr. Neal has over 40 years of engineering geology experience, in both the government and private sectors, and has been in responsible charge of hundreds of geological and geotechnical projects in both Oregon and Washington. He has conducted and directed engineering geologic and geotechnical studies related to slope stability and erosion, routing and design of utilities and roadways, bridges, timber management, building sites, foundations, drainage, and developments. He has prepared technical practices handbook sections on rock classification and core drilling, and provided field methods training to geologists and engineers. He served two terms on the Washington State Geologist Licensing Board.

He will be assisted by Ryan Cole, GeoEngineers, Inc., Douglas A. Anderson, retired from FHWA-WFL in 2025, and Nicholas Farny, FHWA-WFL.

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If you have access to these items please bring them:

- Hand clinometer (Suunto or equivalent)
- Compass that can accurately deal with magnetic declination and can be read accurately
- Cloth tape measure (in 10th of feet, not inches, preferably in 100 feet)
- Calculator that can do either polar to rectangle coordinates (preferable) or trig functions
- Favorite pencils, eraser and sharpie marker
- Clipboard
- Lunch and water
- Boots, pants, long sleeve shirt, gloves. You may be on a steep brushy slope.

If you work for a consulting firm that has extras clinometers and tapes, please label them and bring them with you and let the class know on the first day how many extra we have as a group.