

The Official

# AEG OREGON CHAPTER NEWSLETTER

<http://www.aegoregon.org>

## Meeting Details:

Date: Tuesday,  
September 20, 2022  
7:00 pm Hybrid

[Physical RSVP](#)

[ZOOM RSVP](#)

**In-Person \$25**  
**Cash or check.**  
**Cards please use**  
**link below.**

**Old Market Pub**  
**6959 SW Multnomah**  
**Blvd**

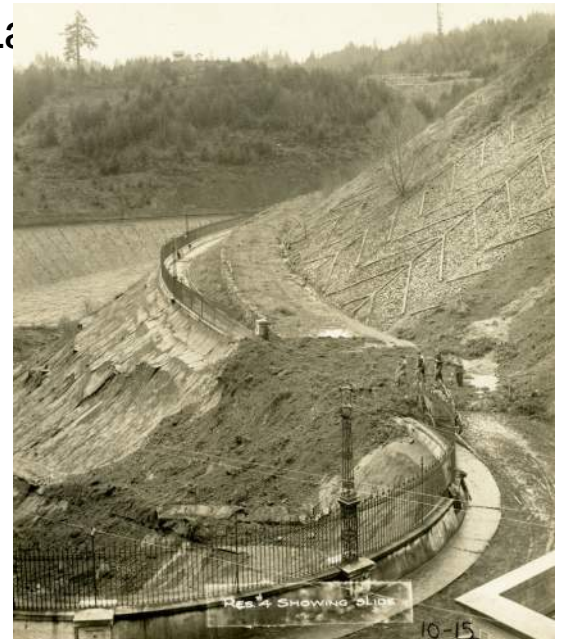
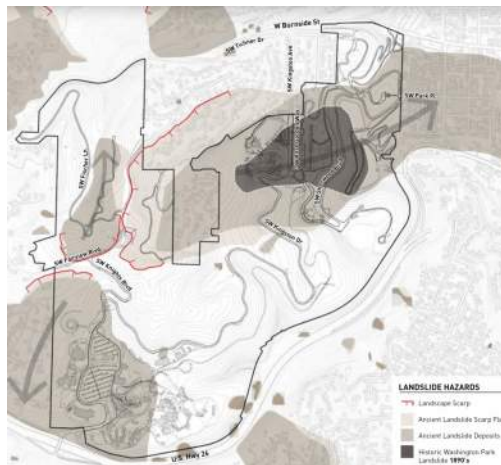
## Agenda:

5:30- 6:30 pm SOCIAL  
6:30-7:00 pm dinner  
7:00 pm Presentation

## UPCOMING MEETINGS:

October 18, 2022  
--TBD  
November 15, 2022  
--TBD  
December 13, 2022  
--TBD  
January , 2022  
-Mosquito Crk Debris Flow  
(Machan & Zimmerman  
February 21, 2022  
--TBD  
March 21, 2022  
--TBD

## Infrastructure vs. Ancient Landslides: A Case Study at Washington Park La



Located at Washington Park in the West Hills above downtown Portland, Oregon, Reservoirs No. 3 and 4 have supplied drinking water for the City of Portland since their construction in 1893 – 1894. Beginning in 2016, the Portland Water Bureau embarked on a multi-year project to improve the reliability and seismic resiliency of the City's water storage west of the Willamette River. Key elements of the project include construction of a new, buried reservoir to replace the existing Reservoir No. 3, and conversion of Reservoir No. 4 into a storm water management facility.

This presentation explores the unique history of infrastructure development in Washington Park, describes major civil works required to construct the new buried reservoir, and discusses a major design challenge – accommodating a large, ancient landslide that has impacted the facility since its original construction. The Portland Water Bureau had operated the two open drinking water reservoirs (Reservoir 3 and Reservoir 4) as part of a gravity-fed water system constructed during the 1890's. A large ancient landslide was re-activated during construction and movement rates were measured up to several inches per week. The landslide is approximately 1,700 feet long and 1,100 feet wide with an average depth of about 100 feet. Structural options to stabilize the landslide were not cost effective, as seismic displacements were difficult to tolerate with rigid solutions. Instead, the new reservoir is located just outside of the actively moving ground, adjacent to the landslide toe. The reservoir will be isolated from continued landslide movements using an innovative compressible inclusion. The performance of the landslide during construction, a key design consideration, will also be discussed.



[It] is the little causes,  
long continued, which  
are considered as  
bringing about the  
greatest changes of  
the earth.

James Hutton



## Tom Westover, P.E., MBA



Tom Westover is a Senior Associate Engineer with Cornforth Consultants in Portland, Oregon. His geotechnical engineering experience in the Pacific Northwest and beyond includes high-capacity ground anchors, soil-structure interactions, landslide and rockfall analysis, transportation projects, and dam safety evaluation and modifications. His main interest involves using 3D modeling, data visualization, custom numerical models, and creativity to develop novel, efficient, risk-based solutions for complex geotechnical problems.



## Message from the Chapter Chair

Hello Oregon Chapter!

As the dog days of August come to a close, we're looking ahead to a new year of Chapter activities that will (hopefully) all be in-person this year! Thank you again to Mike and Nancy for helping to shepherd the Chapter through COVID, keeping membership steady and flipping back and forth between in-person and virtual meetings as the situation required. I certainly have some big shoes to fill as the new Chair. Luckily Nancy will continue to provide expert guidance as Past-Chair. Ryan Cole will be our Chair-Elect, and Nikos Tzetos will be the chapter Treasurer. Our newest board member, Nick Farny, is joining us as Secretary. Nick is an engineering geologist with Western Federal Lands. He has lived in Vancouver for the last 5 years and is excited to be getting more involved with AEG and the local chapter. Nick will be out in the field in September geologizing, but please plan to give him a warm welcome in October.

In more good news, Old Market Pub has finished repairing their kitchen after April's fire, and we're looking forward to revisiting our old stomping grounds on September 20. Our planned speaker, Pat Pringle, had a conflict come up and unfortunately will not be able to present. He hopes to be able to present at another meeting later this year. Please give a warm chapter welcome to Tom Westover, who stepped up to give a presentation on the Washington Park reservoir replacement project, with a particular focus on the complex site geology.

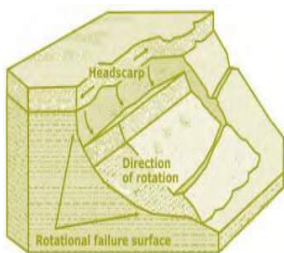
We are looking forward to having in-person meetings this fall, but we will continue offering a hybrid virtual option for people who aren't yet comfortable attending an in-person meeting. We are going to start charging a small fee for virtual attendees to cover the cost of the chapter Zoom membership and the additional hardware components. Please let me or any of the other board members know if you have any questions or feedback on that.

The AEG Annual Meeting will also be taking place in Las Vegas September 12-17. If anyone planning to attend is looking to have an even better time, the 2023 Meeting Booth is still accepting volunteers! If meeting new people is for you, please contact Mark Swank ([mswank@aspectconsulting.com](mailto:mswank@aspectconsulting.com)).

Nancy reminded me that this first Chair letter needs to include a brief introduction, so here goes: I moved to Portland a little over a decade ago, and have grown to love the Pacific Northwest. As an Associate Engineer at Cornforth Consultants, I've been lucky to spend my time working on a variety of knotty geotechnical problems. My husband and I have two kids in early elementary school. I suspect I'm successfully indoctrinating them in the wonders of geology because my daughter collects at least one pebble on every hike and stashes it in her sock drawer and my son has a thing for maps.

We're looking forward to seeing everyone again soon over some pizza and beer, and getting the latest environmental and engineering geology news from Las Vegas. In the meantime, be sure to check your membership status at [aegweb.org](http://aegweb.org) and let me know if you need help with renewal or new membership. Enjoy these first couple weeks of fall!

See you all soon,  
Aine Mines  
AEG Oregon Chapter Chair 2022-2023





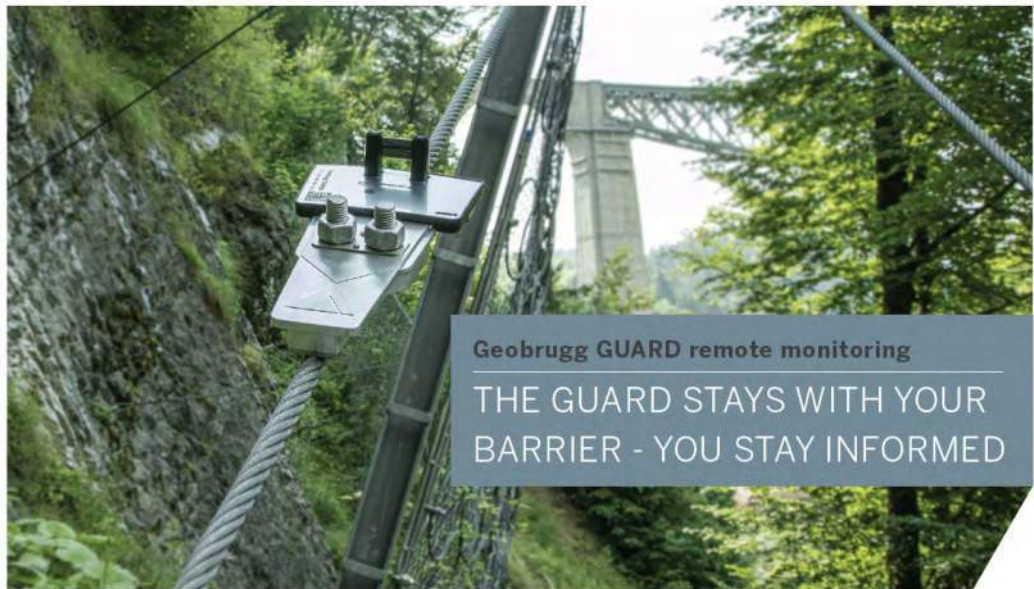
*"The earth is large and  
old enough to teach us  
modesty."*

*Hans Cloos*



[www.geobrugg.com/guard](http://www.geobrugg.com/guard)

**GEOBRUGG®**  
BRUGG  
Safety is our nature



Geobrugg GUARD remote monitoring

THE GUARD STAYS WITH YOUR  
BARRIER - YOU STAY INFORMED

Geobrugg North America, LLC | 22 Centro Algodones | Algodones, NM 87001 | USA  
T +1 505 771 4080 | [www.geobrugg.com](http://www.geobrugg.com)



**PACIFIC**  
**GEOPHYSICS**  
Applied Geophysics

**GEOPHYSICAL SURVEYING**  
for environmental  
and geotechnical  
applications

503.501.7846  
[nikos@pacificgeophysics.com](mailto:nikos@pacificgeophysics.com)  
[www.pacificgeophysics.com](http://www.pacificgeophysics.com)





## Your Environmental, Geotechnical, Clean Water Drilling Professionals

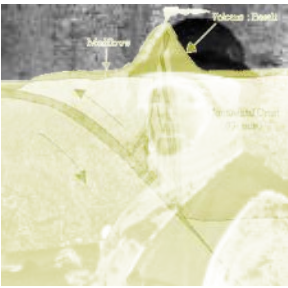
Work with experienced drillers who run your project with a friendly can-do attitude using state of the art drilling equipment, backed by an experienced management team with the authority to solve problems quickly.



# Call: (253) 693-3760

*Our Drilling Professionals are Ready to Help*





## We engineer success stories.

PBS is a trusted source of practical, sustainable solutions to the region's environmental and engineering challenges—enabling projects to succeed and communities to thrive.

**PBSUSA.COM**

Quality People  
Quality Results

37 years  
in the  
Northwest



ENVIRONMENTAL SERVICES • HEALTH & SAFETY  
SURVEY • GEOTECHNICAL ENGINEERING  
STRUCTURAL ENGINEERING • CIVIL ENGINEERING



### ***EARTH DYNAMICS LLC***

2284 NW. Thurman St.  
Portland, OR 97210  
(503) 227-7659  
[info@earthdyn.com](mailto:info@earthdyn.com)

[www.earthdyn.com](http://www.earthdyn.com)

Providing Quality  
Geophysical Services  
since 1984

#### **Engineering Geophysics:**

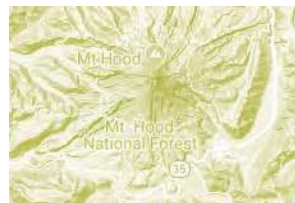
- Seismic Refraction/Reflection
- Shearwave Velocity Studies
- Electrical Resistivity Profiling
- Ground Penetrating Radar
- Magnetics/Electromagnetics
- Gravity
- Marine Geophysics

#### **Vibration & Noise Analysis:**

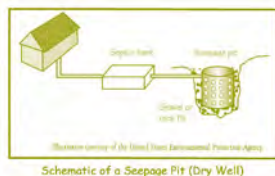
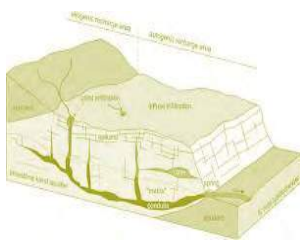
- Remote Vibration Monitoring
- Real-time Frequency Analysis
- Construction Monitoring
- Demolition Monitoring
- Blast Design and Monitoring
- Pre-construction Surveys
- Sensitive Equipment Certification

#### **Rock Mechanics:**

- Uniaxial Compressive Strength
- Direct and Traixial Shear Strength
- Direct and Indirect Tensile Strength
- Dynamic & Static Elastic Moduli
- Thermal Properties
- Density & Porosity
- Moisture Content







Schematic of a Seepage Pit (Dry Well)

**EARTH**

Geotechnical Engineering  
Environmental Remediation  
Water Resources  
Stormwater  
Data + Mapping

Bainbridge Island  
Bellingham  
Bend  
Portland  
Seattle  
Wenatchee  
Yakima

**Aspect**  
CONSULTING  
[www.aspectconsulting.com](http://www.aspectconsulting.com)  
971.865.5890

**WATER**



HI-TECH Rockfall is a General Contractor that specializes in Rockfall Mitigation and has been the industry leader for over 18 years. Our Highly Trained & Skilled Employees provide us the Highest Safety Record in the Industry.



Products and Services include:

<b>Highwall Stabilization</b>	<b>Wire Mesh Drapery</b>
<b>Rock Scaling</b>	<b>Rock Bolts</b>
<b>Rock Dowels</b>	<b>Shotcrete</b>
<b>Rockfall Barriers</b>	<b>Avalanche Nets</b>
<b>Instrumentation Installation</b>	<b>Rope Access Work</b>

HI-TECH Rockfall Construction, Inc.  
P.O. Box 674, Forest Grove, OR 97116

Office: (503) 357-6508  
[www.hitechrockfall.com](http://www.hitechrockfall.com)

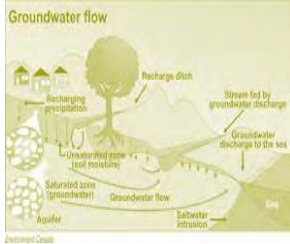


We Service Multiple Industries which include:

<b>Government &amp; Military</b>	<b>Highways</b>
<b>Mines &amp; Quarries</b>	<b>Railroads</b>
<b>Commercial &amp; Residential</b>	<b>Utilities</b>







**SOIL and FOUNDATION  
STABILIZATION SOLUTIONS  
GEOTECHNICAL EXPLORATIONS**  
in OREGON and WASHINGTON  
503.649.8111 [info@plisystems.com](mailto:info@plisystems.com)

- Drilled and Grouted Tie-Back Anchors
- Light Weight Fills: Foam & Cellular Concrete
- Geotechnical Drilling Explorations
- Shoring (temporary & permanent)
- Drainage, Including Horizontal
- Helical Anchors & Piles
- Drilled Shafts (caissons)
- Limited Access Drilling
- Landslide Stabilization

- Elevator Jack Shafts
- Displacement Piles
- Wall Construction
- Sheet Pile Walls
- Injection Boring
- Underpinning
- Rock Anchors
- Rock Coring
- Dewatering
- Pile Driving
- Micropiles
- Shotcrete
- Soil Nails
- Grouting
- Pin Piles
- SPT

*"A soil adapted to the growth of plants, is necessarily prepared and carefully preserved; and, in the necessary waste of land which is inhabited, the foundation is laid for future continents, in order to support the system of the living world.."*

*James Hutton*





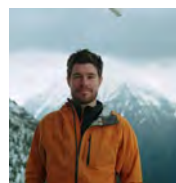
## Chapter Officers & Committee Chairs



Chair:  
Aine Mines,  
Cornforth Consultants, Inc.  
[amines@cornforthconsultants.com](mailto:amines@cornforthconsultants.com)

Please  
Help.

Program Chair:  
  
**Volunteer  
Needed**



Legislature Chair:  
Sebastian Dirringer  
Cornforth Consultants  
[SDirringer@CornforthConsultants.com](mailto:SDirringer@CornforthConsultants.com)



Chair –Elect:  
Ryan Cole  
FHWA Western Federal Lands  
[ryan.cole@dot.gov](mailto:ryan.cole@dot.gov)

This could be  
you!

Field-Trip Chair:  
Volunteer Needed  
Please Help

This could be  
you!

Newsletter Editor:  
Volunteer Needed  
This could be you!



Treasurer:  
Nikos Tzetos  
Pacific Geophysics  
[nikos@pacificgeophysics.com](mailto:nikos@pacificgeophysics.com)

This could be  
you!

Membership Chair:  
Volunteer Needed  
Please Help



Webpage Editor: Rud Moe  
PSU Graduate Student  
[rudlambmoe@gmail.com](mailto:rudlambmoe@gmail.com)



Secretary:  
Nick Farny  
FHWA Western Federal Lands  
[nicholas.farny@dot.gov](mailto:nicholas.farny@dot.gov)

**The Oregon Chapter is also on  
the web at**

<http://www.aegoregon.org>

**National AEG webpage:**

<http://aegweb.org>

Subscribe to the newsletter by sending any e-mail to  
[aegoregon-subscribe@groups.electricembers.net](mailto:aegoregon-subscribe@groups.electricembers.net)

PSU Student Chapter President:  
Rud Moe  
Portland State University



Past-Chair:  
Nancy Calhoun  
DOGAMI  
[nancy.calhoun@oregon.gov](mailto:nancy.calhoun@oregon.gov)



Mike Marshall  
GRI  
[mmarshall@gri.com](mailto:mmarshall@gri.com)

## Thanks For Supporting AEG

Members, Volunteers, Aspect Consulting, Cornforth Consultants Inc., DOGAMI, Earth Dynamics LLC., Federal Highways (FHWA), Geobrugg, GRI, Hi-Tech Rockfall, Holt Drilling, NACSE, ODOT, Oregon State University, Pacific Geophysics, PBS Engineering & Environmental, PLI Systems, Portland State University, Western Oregon University

## The AEG Oregon Chapter Newsletter

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.

AEG OREGON CHAPTER NEWSLETTER is published monthly from September through May. Subscriptions are for members of AEG affiliated with the Oregon Chapter or other Chapters, 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: Aine Mines, AEG Oregon Chapter Chair-Elect, Cornforth Consultants, Inc., 10250 SW Greenburg Road, Suite 111, Portland, OR 97223, e-mail: [amines@ccilt.com](mailto:amines@ccilt.com), phone (503) 452-1100. Electronic media is preferred. Deadline for submittal is the 25th of the month. Advertising: business card size \$100/yr; ¼ page \$200/yr; ½ page \$350/yr; 1 page \$450/yr.

