ASCE Seattle Section Geotechnical Group

G-I GEO-INSTITUTE Seattle Chapter

# 2012 Groundhog

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# 2011-2012 Officers

**Some of the officers gathered for a photo opportunity (l-r): John Bickford, Farid Sariosseiri, Lynn Salvati, Mike Lach, and Tyler Stephens**

**PRESIDENT**
Ghada Ellithy, PhD, P.E.
US Army Corps of Engineers

**PRESIDENT ELECT**
John Bickford, P.E.
DBM Contractors Inc

**SECRETARY**
Mike Lach, P.E.
CDM Smith

**TREASURER**
Farid Sariosseiri, PhD, P.E.
CDM Smith

**MEMBERSHIP CHAIR**
Bob Metcalfe, P.E., L.E.G.
GeoEngineers, Inc.

**EDUCATION CHAIR**
Lynn Salvati, PhD, P.E.
Jacobs Associates

**PUBLIC RELATIONS CHAIR**
Tyler Stephens, P.E.
Shannon & Wilson

**EDUCATION CO-CHAIR**
Fadzilah Saidin, PhD, P.E.
Lachel & Associates

**WEBMASTER**
Minjae Park, E.I.T.
AMEC Earth & Environmental

# President's Message

Welcome to the 2012 edition of the Groundhog. The Groundhog has been the official annual publication for the ASCE Seattle Section Geotechnical Group and now also the Geo Institute Seattle Chapter. This issue includes a summary of the 2011 – 2012 term activities and news from the local geotechnical community.

I would like to start by thanking the members of the board for their dedication and support to our group. Without their valuable volunteer services and time, our organization would not be able to function and serve our geotechnical community. Our officers this year are: **John Bickford** (DBM Contractors), President Elect; **Mike Lach** (CDM Smith), Secretary; **Farid Sariosseiri** (CDM Smith), Treasurer; **Lynn Salvati** (Jacobs Associates), Education Chair; **Dila Saidin** (Lachel & Associates ) Education Co-Chair; **Tyler Stephens** (Shannon & Wilson) Public Relations Chair; **Bob Metcalfe** (GeoEngineers), Membership Chair; and **Minjae Park** (AMEC Earth and Environmental), Webmaster. I also would like to thank **Bo McFadden** (GeoEngineers) who has been supporting our group in coordination with the national G-I, and **Lorne Arnold** (University of Washington Graduate Student) who has been our coordinator with the UW GIGSS students.

Our mission as an organization is to advance the geotechnical practice in the Puget Sound region by providing leadership on public issues, sharing professional experience, and promoting education through presentations and seminars.

During the last trimester of 2011, we organized one dinner meeting per month between September and December, and participated in the Seattle DPD landslide awareness meetings in October and November. Tentative events for the first trimester of 2012 include monthly dinner meetings between January and April, a Short Course in conjunction with the Spring Seminar on Friday May 11th, and the 29th. Annual Spring Seminar on Saturday May 12th, which will focus on Earthen Dams and Levees. Similar to last year, the Spring Seminar will be held at Kane Hall at the University of Washington Seattle campus. We also made some upgrades and improvements to our website, http://www.seattlegeotech.org/, and added some useful information and links.

We are still excited about the transition last year to the Geo-Institute (G-I) Seattle Chapter. The Geo-Institute was created by ASCE in 1996 as a specialty membership organization focused on the geo–industry, and is one of ASCE's eight Institutes. We are exploring avenues to make this transition work for a better exposure and reach of our group to support the progress of the geo-professional community through a collaborative and a mutually beneficial affiliation. If you are interested in learning more about what this transition means to our group and our members, feel free to email me your questions.

Our group remains financially strong. Until last year and over the previous 4 years, we have been incurring losses at our dinner meetings and subsidizing the losses from the revenues we make on the Spring Seminar, short courses, and the Groundhog ads. Last year we negotiated a new contract for our dinner meetings on the eastside to break even, and this year we secured the same deal with a venue in Seattle so we could go back to the alternate locations on either side of Lake Washington. This scenario is consistent with the results of the survey sent out last year to the members and which came in favor of continuing to alternate the meetings between the east and the west side, and finding a cheaper venue on the west side, rather than raising the $35 fee. We are continuing our tradition of identifying company sponsors for students, reducing the dinner fee to $15 for non-reimbursed public officials, and allowing free walk-ins for the presentation only.

The ASCE Seattle Section Geotechnical Group is fortunate to be able to donate to various charities associated with our profession each year. Last February we contributed $5,000 to Engineers without Borders (EWB). We plan on having a representative from EWB in one of our upcoming dinner meetings to describe the impact of our donation on EWB ongoing project(s). We also contributed $3,000 to the Structural Engineers Association last May to support their Tohoku earthquake reconnaissance team. This year, our officers voted to contribute $40,000 in donations of which $30,000 will go to the ASCE-Bob Holtz fellowship which sponsors graduate students in the geotechnical program at the University of Washington.

We are always interested in hearing about other non-profit organizations associated with geotechnical engineering profession. If you are aware of an organization, please let of our officers know about it.

Our group's membership has now exceeded 650 members. We would like to see volunteers from all the member firms supporting our group. The volunteer work within our group provides an opportunity to network and meet professionals from other organizations while serving our group. Please contact any of our officers if you are interested in being involved with the planning of our events. If you are interested in being an officer on the 2012-2013 term, please contact our President-Elect John Bickford.

I look forward to seeing you at the upcoming dinner meetings and the 2012 Spring Short Course and Seminar.

Ghada Ellithy, PhD, P.E.
President

# 2011—2012 Events Schedule

| Date | Event | Speaker | Topic | Venue |
|---|---|---|---|---|
| 15-Sep-11 | DM, joint with AEG | John Kemeny, University of Arizona | Yucca Mountain Geotechnical Studies | Best Western |
| 27-Oct-11 | DM | John Parnass, Davis Wright Tremaine | Legal Implications of GBRs and GDRs | Red Lion |
| 14-Nov-11 | DM , joint with Ports & Harbors | Catherine Petroff, LP4 Associates | Lessons Learned from the 2011 Tohoku Earthquake and Tsunami | Best Western |
| 15-Dec-11 | DM | Rowland Stow, Condon-Johnson & Associates, Inc. | U-215 I-5 Undercrossing Construction Pits | Red Lion |
| 26-Jan-12 | DM | Mark Havekost, Jacobs Associates | Lower Baker Dam | Best Western |
| 23-Feb-12 | DM, joint with ASCE General Section | Terry Scanlan, Skellenger Bender | Changes in Standard of Care for Engineers in Washington State | Red Lion |
| 22-Mar-12 | DM | Scott Ashford, Oregon State University | Design Guidelines for Lateral Spreading | Best Western |
| 19-Apr-12 | DM | Ken Faught | Chemical Grouting for Compressed Air TBM Intervention | Red Lion |
| 11-May-12 | SC | TBD | Seismic Dam Design | Best Western |
| 12-May-12 | SS | Multiple Speakers | Earthen Dams and Levees | Kane Hall, UW |

DM Dinner Meeting
FT Field Trip
SC Short Course
SS Spring Seminar

# Spring Seminar Update

Last fall, we asked our membership to tell us what Spring Seminar 'topic' ***you*** would be interested in attending. Though the response wasn't quite as overwhelming as we had hoped, we did receive approximately 60 votes and had a decisive winner. The ASCE Seattle Section Geotechnical Group is pleased to announce the 29th Annual Spring Seminar titled **Earthen Dams and Levees – Recent Developments and Case Histories**. This year's seminar will be held on Saturday, May 12th, 2012 on the University of Washington campus at Kane Hall.

This year's seminar will focus on design considerations, Washington State's Dam Safety Program, local case histories and emerging technologies. The presentations will be given by prominent speakers representing all facets of this industry including design, construction, ownership, and academia. In addition to the specific topic presentations, the Spring Seminar will include our annual Service Award Presentation, Exhibitor Displays, Hosted Lunch/Breaks, and a Hosted Social Hour. Seminar attendees will be eligible to receive 0.8 Continuing Education Units (CEU) or 8 Professional Development Hours (PDH).

We are also planning a 1-day short course which will be held on Friday, May 11th, 2012 at the Best Western Executive Inn in Seattle (note: the short course will not be at the Red Lion Inn in Bellevue this year) that will focus on seismic design considerations for Earthen Dams and Levees. Please remember that our Short Course is intended for an audience of all levels of engineering practice. Course attendees will be eligible to receive Continuing Education Units (CEU) or Professional Development Hours (PDH).

In our group's history of conducting the Spring Seminar, this will be the first time we have dedicated our Short Course and Spring Seminar to the topic of Earthen Dams and Levees. It should be a very interesting and informational conference. Mark your calendar for both events, and visit our website www.seattlegeotech.org by mid March, 2012 for more updates and information

John Bickford, P.E.
President-Elect

# Distinguished Service Awards

The Geotechnical Group recognizes meritorious service by members whose past efforts on behalf of the Group, including outstanding leadership and volunteer efforts to the local geotechnical community, deserve recognition. The Distinguished Service Awards, established in 2007, are awarded annually at the Spring Seminar.

In 2011 the Group awarded two Distinguished Service Awards. The recipients were **Bo McFadden** (GeoEngineers) and **Stan Boyle** (Shannon & Wilson). The success of our group is attributed to the hard work of dozens of volunteers each year. However, there are individuals who return year after year and distinguish themselves as leaders among the group. Bo and Stan have shown dedication and continued service to the field of geotechnical engineering and the ASCE community. Our group owes its success to individuals like Bo and Stan.

**Bob Metcalf (left) presents the Distinguished Service Award to Stan Boyle at the November 2011 dinner meeting.**

We are currently accepting nominations for the 2012 Distinguished Service Awards. Please send your nominations to Bob Metcalfe at rmetcalfe@geoengineers.com by March 3, 2012 and include the name and contact information of the nominee and a brief description of why this person should receive a Distinguished Service Award.

Bob Metcalf, P.E., L.E.G.
Membership Chair

# Local Firm Summaries

ASCE Seattle Section Geotechnical Group would like to thank the following companies for volunteering to submit articles for the 2011 Groundhog publication. The Groundhog is published to inform group members and others of the group's achievements, recent activities, goals, changes in the group and other significant issues in the local geotechnical community.

Each local organization represented by the group's membership is invited to submit a brief article summarizing their organizations services and trends over the past year, plans for the coming year, changes in the organization and promotions.

The company articles are arranged within the Groundhog publication in alphabetical order.

AMEC Earth & Environmental
Aspect Consulting, LLC
CDM Smith
CH2MHILL
DBM Contractors, Inc.
GeoEngineers, Inc.
Golder Associates, Inc.
Hart Crowser
Holocene Drilling, Inc.
HWA Geosciences, Inc.
Jacobs Associates
Kleinfelder
Lachel & Associates, Inc.
Landau & Associates
Malcolm Drilling Company
MWH
Robinson Noble
Shannon & Wilson
SPU Materials Laboratory
SubTerra , Inc.
Swigert Engineering
Terracon
URS
UW Geo-Institute Graduate Student Society

**Contact: Stephen Siebert**
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**AMEC Earth and Environmental**

AMEC's Geotechnical Group in our Bothell office had a successful 2011. We worked on challenging local projects, including K-12 schools and transportation and infrastructure projects, as well as several international projects.

**Jim Dransfield** provided his specialized expertise to other AMEC offices around the US and globally on waterfront development and mining projects, in addition to his local projects for buildings, utilities, quarries, landfills, levees, stream restoration, and sediment cleanup.

**Reda Mikail** joined our geotechnical group in January 2012. Reda is a geotechnical engineer with a structural engineering background. He has 19 years of experience in geotechnical design and construction support for transportation, waterfront, energy, site development, wastewater, residential, and landslide projects in Washington, Kansas, New York, and California. His expertise includes project management, seismic engineering, soil-structure interaction, numerical modeling, deep foundation design, and soil behavior.

**Steve Siebert, Todd Wentworth,** and **Carlo Evangelisti** continued to work on a variety of projects for local municipalities, state agencies, and school districts. Steve continued to provide third-party geotechnical review for development projects in critical areas on Bainbridge Island, completed several geotechnical studies for campus improvement projects at Pacific Lutheran University, and continues to manage ongoing projects at Issaquah Highlands. Todd has been busy managing geotechnical monitoring for several schools this year. He is also currently managing geotechnical monitoring of landslide repairs at Wheeler Army Air Field in Hawaii. This past year Carlo continued working on the Snohomish County Aquatic Center, the next phase of design for the SKIA Connector roadway near Bremerton, and widening of Bridgeport Way in University Place.

**Henry Brenniman** has been busy working on landslide repairs for the City of Seattle, culvert replacements, and levee repairs. He also provided construction monitoring at Wheeler Army Air Field. This past year **Bill Lockard** assisted our Seattle office in remedial design for a former landfill adjacent to a Superfund site in Pierce County, and in design of remediation, reconstruction, and shoreline habitat restoration for an industrial site along the Duwamish River. **Konrad Moeller** and **Pat Reed** were involved on a number of local geotechnical exploration and construction monitoring projects.

**Minjae Park** continues to gain experience on many design and construction projects. He performed a substantial amount of analyses for a levee repair project, provided geotechnical construction monitoring for several new school projects, and continues to serve as webmaster for the ASCE Geotechnical Group website.

We look forward to another busy year in 2012!

**Contact: Nikola Litven**
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In 2011 Aspect celebrated our tenth anniversary, recognizing the milestone with a November open house. Thanking clients and teaming partners who have contributed to our success, we raised a toast of *Aspect Anniversary Ale* hand-crafted by Aspect employees **Tyson Carlson**, **Parker Wittman**, and **Greg Ferris**. Geotechnical practice leaders **John Peterson** and **Dave McCormack** have been with Aspect since inception, and have helped define the firm's reputation for geosciences expertise.

Aspect expertise was widely evident in 2011. **Dave McCormack** spent a few days in Washington DC helping USGS evaluate grant proposals to receive 2012 NEHRP research funding. At a March AEG meeting, he presented geologic insights gleaned from leading geologic analyses on the Brightwater conveyance, University Link, and other local tunnel projects. Recognized for his multidisciplinary approach to stormwater infiltration, **Scott Kindred** presented last year at APWA, ASCE, and AWRA meetings, and advised groups at King County, the City of Redmond, and Seattle Public Utilities. Scott also helped develop the infiltration standards in Ecology's new stormwater manual. **Matthew von der Ahe** continues to be heavily involved in the geotechnical community serving as secretary for the local AEG chapter and NWGS field trip coordinator. He is also co-chair of the field trip committee for the AEG 2013 national meeting, which will be held in Seattle.

2011 brought us new projects including **Bremerton Motor Sports**, a **Central Kitsap School District** elementary school, and **Rockaway Beach Road** final design (with Berger Abam) for the City of Bainbridge Island. We continued to provide geotechnical support on Kitsap County's **Strawberry Creek Culvert Replacement, Clear Creek Floodplain restoration,** and **Bucklin Hill Road**; Seattle City Light's **former Greyhound site**; and Seattle Public Utilities **Madison Valley Stormwater Project**.

We moved our Bainbridge Island location from Madrone Lane around the corner to a freshly renovated building at 350 Madison Avenue, sorting, culling, filing, and archiving ten+ years of accumulated paper in the process.

Aspect continues to play as hard as we work: a record number of Aspect staff set personal and firm records as we biked 4,600 miles in the month of May to take the golden helmet award in the A/E Challenge. A dozen Aspect golfers bested a soggy course at the fall Golf Classic at Mt. Si Golf Course. Our holiday party featured heavy competition at the foosball and air hockey tables at Pyramid Brewery.

**Contact: Joe Souther**
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What began in February 2011 with the joining of two industry forces – CDM and Wilbur Smith Associates – has culminated in a fully integrated provider of comprehensive water, environment, transportation, energy and facilities services united under the new brand CDM Smith. CDM Smith is represented in the Northwest by offices in Bellevue and Seattle, Portland, and Helena and Libby, Montana.

**John Newby**, P.E., leading our Geotechnical Services Division in the western U.S. out of the Bellevue office, provided his expertise to the world-renowned Marina Barrage project in Singapore. He also consulted on other major infrastructure projects. **Joe Souther**, P.E., leading the geotechnical group in Bellevue, provided geotechnical design and construction services of a large slurry wall for an

industrial client in California. He also worked on both new and reclamation projects for mines and mills in several states. **Ulf Gwildis**, L.E.G., as CDM's construction services manager for the Brightwater Conveyance project, oversaw completion of 13 miles of tunnels. Final breakthrough included construction of a tunnel connection at an abandoned TBM shield using ground freezing – 300 feet underground. **Mike Lach**, P.E., in addition to Brightwater tasks, performed geotechnical modeling of complex system behavior and loading sequences for new water treatment facilities in Washington DC, and for existing utilities and structures along the Alaskan Way Viaduct tunnel alignment. **Karen Irby-Smith**, while managing our geotechnical laboratory, also provided field and construction services for rehabilitating the Ashton Dam hydropower facility and for dismantling the Goldendale aluminum plant. **Farid Sariosseiri**, P.E., PhD, conducted in-situ load testing of lake clay deposits for the site investigation for a solar power plant at Owens Lake. He worked on restoration of four miles of Rio Salado in Phoenix, and performed R+D work on stabilization of coal fly ash impoundments. **Morris Wainwright** provided civil design services for two major reclamation projects at Lake Machado and Owens Lake.

Our Geotechnical Services Division had a successful year and several technical papers were published highlighting successful projects and innovative solutions. Resources provided by our geotechnical professionals in seventeen states cover the whole range of geotechnical engineering. In addition, we can turn to internationally acknowledged expertise of our affiliated colleagues in Germany in specialty fields like ground freezing design, geothermal energy concepts, and high-speed-rail infrastructure expansion.

We continue seeking to add geotechnical professionals to our team working on numerous technically exciting and challenging projects throughout the Western U.S. and beyond.

**Contact: Michel Bouchedid**
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Successful! That's a single-word summary of the past year for CH2M HILL's geotechnical group in Bellevue. We worked on numerous interesting projects, we spent time traveling to other offices, and we participated in a number of professional activities. Our biggest news was the addition of the Halcrow Group to our organization. Halcrow, is a U.K. based company with about 6,000 employees operating in over 98 offices around the world. The Halcrow staff includes 150 tunnel engineers and 225 geotechnical engineers located in offices in the United States, Canada, the UK, the Middle East, Australia, and Hong Kong.

Our geotechnical group in Bellevue – which has 10 geotechnical engineers, all with their PEs – was busy working on various interesting projects. We delivered the geotechnical data and analysis report for Preliminary Engineering of the Sound Transit East Link project, and we supported construction of U-Link. We worked on the Loop 49 Design-Build transportation project in Texas, and we prepared the Geology, Soils, and Seismology section of the EIS for the California High Speed Train – Fresno to Merced segment. We designed the Auburn M-Street SE Grade Separation project, involving soil nail walls beneath a highway bridge on spread footings, tie-back tangent pile-supported railroad bridges, soldier pile walls, and grade-critical trenchless pipe installations; and we supported construction and final design of two WSDOT I-5 HOV projects in Tacoma. The WSDOT projects, which include a replacement Puyallup River bridge and SR167 Interchange reconfiguration, involved stone column and deep soil mixing ground improvement, two-stage geosynthetic walls, settlement monitoring, a limited clearance soil nail wall, trenchless pipe installations in poor soil with minimal cover, use of lightweight fill materials, and large diameter drilled shafts. We went out of state to support the Alaska

DOT for work on the Seward Highway, as well helped our Oregon colleagues on the TriMet and Sellwood Bridge Projects. We supported our Water Business Group in the design and construction of projects for the City of Raymond, Jefferson County PUD, and Clallam County PUD, and we provided inspection during construction of the Brightwater Treatment Plant. We also worked on projects in Illinois, North Carolina, Poland, and Singapore for our Environmental Business Group and our Nuclear Business Group.

Away from work Michel Bouchedid served as the chair of the ASCE geotechnical group, we presented papers at the 2011 TRB conference and at the 2012 GeoCongress, and we simply enjoyed life.

**Contact: Bob Carnevale**
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Welcome 2012! DBM Contractors, Inc. would like to thank all of its project partners from last year and extend a hearty "Best Wishes" to all as we embark on the New Year. If we believe the economists and prognosticators then we will hopefully see some growth in the New Year for our respective industries. Let's keep our fingers crossed!

2011 was dominated by public works foundation projects at DBM. We were successful in winning projects for WSDOT, ODOT, Alaska DOT & PF, Montana Department of Transportation, GSA, City of Tacoma, Pierce County, Josephine County, OR, City of Kenmore, Chelan City PUD, City of Federal Way, City of Port Orchard, University of Washington, King County, and Northshore Utility, and Renton School District. DBM also secured work with NOAA and University of California at San Diego.

Some highlighted projects include Simpson River Bridge emergency repair, 2020 5$^{th}$ Ave Data Center in Seattle, Renton Memorial Stadium micropile foundation retrofit, Colman Tower in Seattle, Port of Newport Terminal Retrofit in Newport, OR, another phase of work at Pike Place Renovation, and continued work at Sound Transit D to M Street Track and Signal Project in Tacoma, WA. DBM also completed earth retention and dewatering work at Sound Transit U230 Capital Hill Station and soil freezing drilling and grouting at Brightwater Conveyance System BT3 Completion.

In the New Year you will see us at UW Stadium Renovation, University Village, Howard Hansen Dam, Lower Baker Floating Surface Collector, Seward Hwy. and a host of other foundation and earth retention projects throughout the Pacific Northwest and West.

DBM continues to be active in the advancement of the geotechnical construction industry through our participation in the ADSC, DFI and ASCE. This year, Tom Armour, P.E. will complete his last year as Immediate Past President of the ADSC-IAFD, Robert Carnevale will continue his Director term with ADSC-IAFD, Rick Walsh, P.E., G.E. will continue his term as Vice President and Director at ADSC West Coast Chapter and John Bickford, P.E. is President-Elect at ASCE Seattle Section Geotechnical Group. In addition, DBM will continue its task force participations at WSDOT, ODOT, and CalTrans to develop enhanced specifications, designs and constructability in geotechnical construction.

**Contact: Nani Paape**
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GeoEngineers enjoyed continuing profitability and growth during 2011, despite the lackluster economic recovery. *Engineering News-Record* ranked GeoEngineers 219th of the top 500 U.S. design firms, while *Puget Sound Business Journal* ranked the firm 12th in the region for engineering services.

**2011 Project Highlights:** GeoEngineers' geotechnical teams engaged in a wide range projects in the Puget Sound region and beyond. Highlights include:

- WSDOT/SR 520 Evergreen Point Floating Bridge and Landings Design-Build Project, Seattle, WA, with the Kiewit-General-Manson design-build team
- Canyon Road East Northerly Extension Project, for Pierce County, WA
- Wind Rose Development, White Center, WA, for King County Housing Authority
- Swedish Hospital Issaquah Campus, WA, for Hammes Company
- Fault Mapping Study, Marine Corps Air Ground Combat Center, Twentynine Palms, CA, for the U.S. Navy

**Award-Winning Projects:** GeoEngineers was honored by the American Council of Engineering Companies with three 2011 Engineering Excellence Awards. ACEC-Washington awarded a Silver Best in State Award for Exceeding Client/Owner Needs to the Olympic Pipeline Span Protection project in Bellingham, WA and a Bronze Award to the Cap Sante Marine Site Restoration project at the Port of Anacortes, WA. GeoEngineers took home a prized Grand Award from ACEC-Missouri for the Pipeline Crossing of Mississippi River Levee project, which featured the HDD installation of three Chevron pipelines beneath the Mississippi River and its levees near Empire, Louisiana.

**Award-Winning People:** Bo McFadden, PE, LEG was honored with a Distinguished Service Award at the ASCE Seattle Section Geotechnical Group and Seattle Geo-Institute Chapter 2011 Spring Seminar. The award recognizes Bo's many outstanding contributions to the organization's growth and strength.

Gordon Denby, PE, GeoEngineers' President and a principal geotechnical engineer, was invited by the Science and Technology Policy Institute, a department of the Institute for Defense Analyses, to serve on a panel of experts planning for the future of the Network for Earthquake Engineering Simulation.

Trenchless experts Michelle Ramos, PE, LEG; Brian Ranney, RG, CEG, LG, LEG; Drew Sparks, PE and David Sauls, PE presented at the North American Society for Trenchless Technology (NASTT) No-Dig 2011 Conference and the ASCE Pipelines 2011 Conference.

In 2011 GeoEngineers promoted geotechnical engineers Matt Smith, PE (Redmond, WA) and D.J. Thompson, PE (Tacoma, WA) to Principal and Associate, respectively. "Both men have made significant contributions to GeoEngineers and the Puget Sound community, and their promotions are well-deserved," said Dan Campbell, GeoEngineers' COO.

To learn more about our award-winning people and projects, visit our new website, GeoEngineers.com.

**Contact: Carly Cyr**
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Golder Associates Inc. (Golder) enjoyed a successful 2011 with interesting projects, staff additions, and continued company growth. *Engineering News Record* continues to rank Golder as one of the top engineering and environmental firms in the nation. We look forward to 2012 and continuing to build strong relationships with our industry colleagues, provide professional opportunities for our staff, and experience company growth both globally and locally.

We are excited about the resurgence of the local development market, and we have many projects underway in the Seattle Central Business District (CBD) and greater Eastside area including several projects currently under construction. Golder is completing and pursuing significant design/build opportunities in transportation, and we continue our support of public and private infrastructure projects. Our staff is also active on hydroelectric projects in the Northwest.

Another interesting project managed and staffed out of our Redmond office is a feasibility study for a proposed gold mine in Suriname. Golder's scope of work includes hydrology, hydrogeology, materials, tailings, and pit-slope evaluations. We are also working on a dam and tailings storage facility for a phosphate mine in Idaho. The project includes liner design, hydrologic evaluation, cover design, stormwater design, and an assessment of mine tailings for paste disposal.

Our Redmond-based pipeline group is active in the Northwest and throughout the U.S. planning new routes, designing trenchless crossings, and addressing geohazards.

Golder has more than 160 offices worldwide. Due to our global footprint, Golder's Pacific Northwest staff have had opportunities to support other Golder offices on interesting projects throughout the world, including work on the oil sands infrastructure in Alberta, Canada; and large infrastructure projects in Australia.

**People:** Golder continues to expand our technical capabilities and has experienced steady personnel growth in the Pacific Northwest and worldwide. Our global staff has grown to over 7,900 employees. Golder's U.S. staff has increased to 1,372. Within the Pacific Northwest Operation, we have added 18 new staff members including **Logan Allender** and **Joe Toth**, both geotechnical engineers. **Jim Kleppe** also joined Golder as Senior Director of Client Development.

We would like to recognize **Bailey Theriault** and **Jill DeKoekkoek** for earning their Professional Geologist (PG) licenses in the State of Washington, **Jeff Schneider** for earning his Professional Engineering (PE) license, and **Derek Holom** for becoming a Licensed Hydrogeologist (LHG).

For more information on our exciting projects and Golder job openings visit www.golder.com. We look forward to another busy year in 2012!

**Contact: Doug Lindquist**
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2011 was a year of expansion for Hart Crowser with major new project work and a growing staff. Hart Crowser's diverse national and international client base presented opportunities to grow in our traditional service areas as well as expand into new markets.

We continue to work on high-profile projects in challenging environments throughout the Puget Sound region and worldwide. Select project profiles are on our website (www.hartcrowser.com). Some highlights from 2011 include:

- SR99 Bored Tunnel Design-Build (largest diameter bored tunnel in the world)
- SR520 Floating Bridge Design-Build (longest floating bridge in the world)
- Sound Transit South Link
- Husky Stadium Redevelopment
- UW Intercollegiate Athletics Track
- South Lake Union Development - Multiple Projects
- Children's Hospital
- King Street Station Renovation and Seismic Upgrade
- Colman Residential Tower, Seattle
- Federal Center South (US Army Corps of Engineers Headquarters, Seattle District)
- Holden Mine Site Cleanup (US Forest Service)
- Joint Base Lewis McChord - Multiple Projects
- Naval Base Kitsap-Bangor - Multiple Projects
- WSDOT Geotechnical On-Call
- Port of Seattle Geotechnical On-Call
- Dam Improvements for the Chinook Water District
- Golf Ridge Rockfall Mitigation, Moanalua Valley, Hawaii
- West Dock Dredging Study, Prudhoe Bay, Alaska
- Governor's Island Park and Public Space Project, New York
- King Abdullah Financial District, Riyadh, Saudi Arabia
- Lodha Wadala High-Rise, Mumbai, India

We've added nine geotechnical engineers in 2011. **Megan Higgins**, **Carlos Valdez**, **Dev Mitra**, and **Brice Exley** were all added to the Seattle Office as Senior Staff Engineers. **Rolf Hyllseth** and **Madan Karkee** joined as Associate Engineers. Hart Crowser's acquisition of Pacific Geotechnical, Inc. expanded our geotechnical presence in Southwest Washington and Oregon. **Tim Blackwood** (Principal), **Greg Landau** (Senior Associate), and **Dan Trisler** (Associate) join our geotechnical group from Pacific Geotechnical.

2012 promises to be an exciting year. In addition to a strong backlog in all of our business units, we look forward to new opportunities in design and construction support, continued growth in our targeted markets, and expansion into new areas.

Hart Crowser is a 105-person, employee-owned consulting firm headquartered in Seattle, with offices in Edmonds and Vancouver, Washington, and Portland, Oregon. The firm specializes in geotechnical and environmental engineering, natural resources, and environmental assessment and consultation.

**Contact: Andrew Berg**
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Holocene Drilling, Inc. (HDI) continued planned expansions in 2011. In November, HDI completed acquisition of a new property, relocating its corporate operations to Puyallup. HDI also participated in the 2011 **Hydrogeology Symposium and 2011 ASCE Spring Seminar and Trade Show** to showcase our services and fulfill licensing requirements associated with HDI's Water Well and Resource Protection Licenses.

HDI worked on several high profile projects including **Sound Transit's D-M Street** in Tacoma, the **SR 520 Bridge Replacement Project**, and the **SR 520 HOV and Transit projects** in Bellevue. HDI also continues to lead in offshore geotechnical drilling & sampling performing borings from a barge on the **Port of Seattle's T-117 Uplands** and **SR 520 Bridge Replacement** projects.

Both our **OSHA** and **WA L&I Ratings** improved yet again this year, making our emphasis on **Safety** evident to our clients and to their clients. This is especially true of our **Environmental** projects. HDI crews recently completed their **HAZWOPER Health & Safety Refreshers** and we upgrade our **Insurance Requirement(s)** and **Safety Program(s)** continually.

Also, HDI added new upgrades to its fleet of equipment. In 2011, we purchased a **Vacmaster Safe Dig Truck** and a **Self-Contained Decon Trailer** to support our **Environmental** projects. HDI Drill Rigs now use **Recycled Vegetable Oil** in their Hydraulic Systems in an effort to employ the use of **"Green"** technology, lessening our impact on the environment.

HDI expanded its **Construction Dewatering** business to include **Turnkey Dewatering Systems** including full-service **Well Point Pumping System Installation, Development, Operation, and Maintenance.** We also continue to offer **Well Point Jetting and Drilling Services**.

**Jay Graham, President**, oversees Holocene's Dewatering Operations and is a **Technical Advisory Group (TAG)** member for **DOE**. **Clay Griffith, Vice President**, oversees HDI's Geotechnical and Environmental Operations. **Donna Thrall, Project Coordinator**, supports Administrative Operations. Her client service and attention to detail are unmatched.

Finally, we offer our sincere thanks for your confidence and trust in our abilities. We are committed to remaining **Local** and **Price Competitive** in this market. We wish you a very successful 2012 and look forward to offering you the same integral **Safety, Innovation, Excellence, and Value** associated with HDI.

Holocene Drilling, Inc. was established in 1996. We offer drilling, soil sampling, and monitoring well installation services in Geotechnical, Environmental, and Construction Dewatering. Holocene operates 8 Drill Rigs throughout Washington and Oregon specializing in **Hollow-Stem Auger, Mud Rotary, Air Rotary, and Rock Coring**. Please visit us at www.holocenedrillinginc.com.

## HWA GeoSciences Inc.

**Contact: Alexandra Garner**
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2011 was a productive year for HWA GeoSciences Inc. We made **Norm Nielsen** a permanent Senior Hydrogeologist employee in April and hired **Vasiliy Babko** to replace **Joan Kinney** who retired as comptroller in May. **Tom Kinney** and **Lorne Balanko** are easing into retirement. We love our new office in Bothell, however not everyone has updated their address books to reflect our new location.

Development of the Everett Riverfront is continuing. This summer **Lorne Balanko** and **Donald Huling** oversaw the installation of a 1400-foot long groundwater cut off wall as well as construction of a long awaited bridge extending 41st Street to a large plot of land slated for residential development.

HWA's geotechnical, environmental, lab and inspection groups have all been involved with the City of Bothell's projects to improve traffic and redevelop a new downtown. Project Manager **Arnie Sugar** led the effort, with assistance from **Erik Andersen, JoLyn Gillie, Vance Atkins**, and **Norm Nielsen**.

The pavement group including **George Minassian** and **Bryan Hawkins** has been busy with the FWD, pavement design, and construction inspection throughout the year and on both sides of the mountain. **Tony Martin** led a team of late night inspectors on perhaps the most visible project, Highway 99 through Shoreline (Phase I and II) which, after several years, is now complete.

Among many landslide projects in the past year, **Eric Andersen** and **Teddy Taddese** are working for the City of Everett on the well-publicized Valley View landslide.

Sometimes the more things change the more they stay the same. **Sa Hong** is evaluating the possibility of treating the sewage from a small development at Crystal Mountain and spraying the effluent out over the landscape. The hope of some is that this will be the way of the future for remote sites.

HWA's embassy work under the direction of **Ralph Boirum** has continued, in Kabul, Afghanistan this time. Construction will begin early 2012, with Ralph or **Bryan Hawkin**s spending at least 6 months there.

One of our most interesting projects, was construction of the floating collector system in the Swift Reservoir to enhance salmon runs in upper Lewis River. Twenty four and 36 inch diameter piles were installed through up to 150 feet of water and 70 feet of alluvium into bedrock where anchors were installed up to an additional 250 feet. **Erik Andersen** managed **Brad Thurber**, **Vance Atkins** and **Teddy Taddese** through continuous inspection for seven months.

## JACOBS ASSOCIATES

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2011 was a year of milestones for Jacobs Associates where several international tunnel projects we participated on were kicked off or completed, including two major highway tunnels, and several water/wastewater conveyance tunnels and railroad projects delivering on time. Due to the increasing popularity of and reliance on underground solutions, our firm continues to grow and work on challenging projects.

In Seattle, the University Link tunneling effort reached the halfway mark, where following three years

of final design efforts, our geotechnical engineers are now providing design services during construction. We are currently leading final design of the North Link extension which will bring Sound Transit's light rail service to the Northgate neighborhood in 2021.

King County's Brightwater tunnels made a dramatically accurate connection to join the final tunnel segment to earlier mined portions. Brightwater received a "Highly Commended" designation in the Tunnelling Project of the Year category (for projects between $100M and $1BN) at the International Tunnelling Awards, and Jacobs Associates is proud to have provided final design as part of a joint venture on that project.

Seattle will make history with the Alaskan Way Viaduct Replacement Tunnel for SR99 as the largest diameter soft-ground TBM driven tunnel in the world. Jacobs Associates is partnering with WSDOT to provide specialty construction management for that project.

Our Seattle and Portland offices continued to provide design services on Seattle City Light's Gorge 2nd Tunnel and Puget Sound Energy's Lower Baker Powerhouse Project. These highly successful projects took advantage of our geotechnical investigation planning and hydropower structure design capabilities in the region.

Jacobs Associates' local Principal **Dan Adams, PE, CPEng** was named President of the firm to guide a company now 188 people strong into its next chapter. Our Seattle office welcomed 16 new faces in 2011, including Senior Associate **William C.B. Gates, PhD, PE, PG, PEng** who augments our rock engineering capabilities. **Sam Swartz, PE** was promoted to Lead Associate, and has just finished work on preliminary engineering for underground portions of the new Ottawa Light Rail system. **Dean Brox, PEng**, joined the firm as a Lead Associate, and is managing our new Canadian office in Vancouver, BC. Jacobs Associates now has twelve branch offices internationally.

We continue to provide geotechnical engineering, design, construction management, and construction claims and dispute resolution services, and look forward to assisting local clients in 2012 with dedicated service and specialized expertise.

KLEINFELDER
Bright People. Right Solutions.

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Kleinfelder's Redmond office enjoyed a busy 2011 with a diverse range of projects in the Northwest and across the US, Canada, and Asia. Nationally, Kleinfelder continued to diversify through organic growth and acquisition, including new offices in Australia and Alberta, Canada.

**David Cotton** continued his legacy of supporting Costco Wholesale in Asia with three new warehouses in South Korea. **Hyungsuk Shin's** fluency in English and Korean proved invaluable for corresponding with the local engineers and he enjoyed extensive FLAC modeling work on US projects.

**Phillip Rust** became a licensed hydrogeologist and supported the Los Alamos National Laboratories Groundwater Monitoring Program. He honed his skills while overseeing installation and testing of monitoring wells up to 1,400 feet deep.

**Steven Flowers** supported a wide variety of development and infrastructure projects in British Columbia, Alberta, and Ontario, as well as the Puget Sound.

**Jason Washburn** spent most of the year enjoying a long-term field assignment providing contractor quality control management for drainage improvements at Howard Hansen Dam.

While enjoying part-time retirement, **Bob Plum** continues to support large transportation projects and mentor staff on projects involving his favorite subject: soft ground.

**Kami Deputy** ventured to Kansas City to provide expert field training on packer testing and continued her service to AEG by moderating a rock mechanics session at the national meeting in Anchorage, Alaska.

**Chad Lukkarila** was selected as Kleinfelder's Technical Practice Leader for Rock Engineering and continues to work on projects across the US. His most recent adventures included rappelling off cliffs near Lake Mead and evaluating rockfall hazards above San Diego beaches.

**Richard Luark** designed guy anchors for 300 miles of transmission line in Texas and led design efforts for over 200,000 square feet of soil nail walls on the I-405 Sepulveda Pass project in Los Angeles.

**Marcus Byers** completed several projects for Costco Wholesale and enjoyed working on a variety of challenging sites in western Canada, the Midwest, and the Northwest.

**Dan Berta** is currently Kleinfelder's quality assurance manager for the Snoqualmie Falls Hydroelectric Redevelopment Project and easily wins the award for "best view from the office".

**Steve Lewis** recently completed soil and rock anchor testing at Snoqualmie Falls and continues to support numerous shoring and commercial development projects in Bellevue and Seattle.

Our materials, soil, and rock laboratory experienced considerable growth and added the Brazilian Splitting Tensile Strength Test of Rock.

Lachel & Associates
A SCHNABEL ENGINEERING COMPANY

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**Lachel & Associates** (Lachel) specializes in design and construction engineering services for tunneling and other heavy civil construction projects in the areas of water and wastewater infrastructure, hydroelectric power, and urban transportation systems (vehicular, rail and mass transit). Our goal is to meet the needs of clients by providing fully integrated management and technical services that are objective, thorough, and effective. Lachel has offices in Washington, Nevada, Colorado, Texas, Georgia, Pennsylvania, Virginia, and New Jersey. As a subsidiary of Schnabel Engineering, Lachel is able to access all of the technical expertise within the Schnabel organization including their broad geotechnical engineering, geostructural design and dam design capabilities. Lachel has worked seamlessly with and utilized the bench strength offered by Schnabel on many of the projects listed below.

**Seattle Staff : M Lee Renegar** as the Western Area Manager, is overseeing operations for the Washington, Nevada and Colorado offices and continues to directly support field operations by providing Value Engineering analyses, investigating project opportunities and preparing proposals, estimating construction costs and schedules. Most recently, Mr. Renegar provided conceptual cost estimates for the East End Kentucky Approach in Louisville, Kentucky.

**Mark Rohrbach** a Senior Engineer with Lachel, was recently elected as the President of the Tacoma-Olympia section of ASCE.

**Tim Kovacs** routinely uses geotechnical finite element code PLAXIS for modeling deformation and stability of soil structures and excavation support systems. His most recent project was the Silver Reef Casino 5th Expansion in Ferndale, Washington.

**Fadzilah (Dila) Saidin** is currently the Co-Chair Education Committee for the Seattle Section Geotechnical Group and a Project Engineer at Lachel. In addition, both she and **Matt Koziol** have expanded their capabilities in cost estimating for CSL testing and PDA testing for driven piles.

**Project Highlights**

- Condit Dam Removal, Skamania County, Washington: Lachel's personnel monitored vibrations and air overpressure levels at the project site and provided the client a summary of the data collected during blasting operations.
- Waller Creek Tunnel Project, Austin, Texas: Lachel performed a separate bid check estimate for the successful bidder. Following contract award, Lachel performed a comprehensive review of the Geotechnical Baseline Report and other contract documents and prepared a report to aid the contractor in planning the construction means and methods for the project. During construction, Lachel is designing and preparing contractor's submittals for all initial ground support elements for the shafts, main tunnel, connecting tunnels and intersecting chambers, and will be the Engineer of Record for these items.

LANDAU ASSOCIATES

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**Landau Associates** completed another successful year and celebrated a significant milestone with the 20th Anniversary of our Tacoma office. We were awarded another on-call geotechnical services WSDOT contract, continuing our role as geotechnical consultant for various transportation and infrastructure projects. We are providing geotechnical engineering for the Snohomish County PUD Tidal Turbine Power Generation Pilot Project.

**Dennis Stettler, P.E.,** continues his role as Director of Engineering with a mix of project, business development, and corporate activities. He has been involved with projects at Washington State Ferry terminals, landslide projects for Seattle Public Utilities, and design-build project pursuits for major transportation and infrastructure projects.

**Steve Wright, P.E.** continued working on infrastructure improvement projects for numerous local municipalities and counties, including the Aurora Corridor Improvement and King County's Ballard Siphon Replacement project.

**Dave Pischer, P.E.,** has been working on a variety of site redevelopment and environmental remediation projects for ports, municipalities, and industrial clients.

**Chad McMullen, P.E.** worked on several design-build proposals for SR520, and field exploration and geotechnical design of a new 13-mile power transmission alignment. Chad has also expanded our geotechnical laboratory testing capabilities, which now includes 1-D consolidation/swell testing, triaxial strength and flexible-wall permeability determinations, and CBR testing.

**Kent Wiken, P.E.** joined the Edmonds office as an environmental and geotechnical engineer. His 25 years of experience, includes geotechnical and geologic services for power transmission line corridor studies, foundation design for power transmission towers, and landfill engineering.

**Dana Olcott, P.E.** was promoted to Senior Project Engineer and has worked on numerous geotechnical investigations, foundation/earthwork design, and construction monitoring projects.

**M. Birkan Bayrak, Ph.D.** was promoted to Project Engineer, working on several waterfront projects for WSDOT.

**Ed Heavey, P.E.,** a Principal in our Tacoma office, continued working on a variety of public sector projects for various clients including the Cities of Seattle and Tacoma, Snohomish County PUD and Pierce County.

**Brian Bennetts, P.E.,** also in our Tacoma office**,** has been working on a variety of infrastructure improvement projects for local municipalities, counties, utility districts and ports.

**Josh Elliot, P.E.** recently joined the Tacoma office as a Senior Staff Geotechnical Engineer.

**Contact: John Starcevich**
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Malcolm Drilling has for decades been an innovator and leader in the deep foundation industry. Our list of core services as it relates to geotechnical construction include drilled shafts, micropiles, excavation support systems, cutoff and secant pile walls, chemical grouting, jet grouting, deep soil mixing, Cutter Soil Mixing, underpinning, and dewatering. These combined services have been applied on numerous complex and technically challenging projects throughout North America for various applications. Similarly, Malcolm's ever-growing Dewatering and Ground Improvement Divisions have been instrumental in keeping Malcolm as the most sought after full service geotechnical contractor.

Based in San Francisco, California, with offices throughout the western United States and Panama, Malcolm has expanded to the eastern seaboard with an office in Florida, and is actively pursuing work throughout the US and Canada. Malcolm's fleet of equipment has also grown from a single truck-mounted drill rig, to the most extensive fleet of state-of-the-art drilling equipment in the United States, valued at over one hundred million dollars. Our fleet includes low overhead and limited access equipment capable of passing through interior doorways, to equipment capable of excavating shafts up to 18 feet in diameter and up to 300 feet deep. Recent equipment acquisitions include the world's largest oscillator (3.8m OD), and two Bauer BG50 top-drive drills (the world's largest top-drive crawler drill).

Some of our notable recent projects completed or acquired include:

- **Alaskan Way Viaduct Replacement (SR-99 Tunnel),** Seattle, WA, - Drilled Shafts, Secant Piles, Earth Retention, Jet Grouting, CSM, Dewatering.
- **Howard Hanson Dam Drainage Tunnel Improvements,** Ravensdale, WA – Vertical and Horizontal Drains, Dewatering Wells, Piezometers, Chemical Grouting.
- **Willamette River Bridge,** Portland, OR – Drilled Shafts.
- **I-90 Widening - Hyak to Keechelus Dam Phases 1B & 1C –** Snoqualmie Pass, WA – Drilled Shafts, Earth Retention.
- **I-94 Mitchell Interchange,** Milwaukee, WI - Secant Pile Shoring System.

- **Port of Miami Tunnel,** Miami, FL - Cutter Soil Mixing, Shoring & Earth Retention.

Malcolm continues to advance geotechnical construction through active participation in ADSC, DFI, Geo Institute and ASCE. For assistance with costing, budgeting or conceptual design, please contact **Al Rasband** (arasband@malcolmdrilling.com), for Ground Improvement contact **Rick Hanke** (rhanke@malcolmdrilling.com), and for Construction Dewatering contact **John Starcevich** (jstarcevich@malcolmdrilling.com). For a complete list of our services and contact details please visit our newly updated website (www.malcolmdrilling.com).

MWH
BUILDING A BETTER WORLD

**Contact: Joe Clare**
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MWH Americas, Inc. has been busy in 2011 and are looking forward to 2012, the Year of the Dragon. Our Bellevue, Portland, and Anchorage offices have been busy on hydropower upgrades, dams, tunnels, and water/wastewater facilities here and around the world. Some key projects are:

As part of international consortium Grupo Unidos Por el Canal (GUPC), MWH is the lead designer of the new Post-Panamax navigation locks for the Third Set of Locks project of the Panama Canal Expansion. The $3.12 billion Third Set of Locks project will be completed in 2014 – coinciding with the 100-year anniversary of the opening of the original Canal. Locally, **Mike Bruen** and **Paul Richards** are working on the project.

The MWH-Jacobs Associates, A Joint Venture continued to provide support during the construction phase of the Brightwater Conveyance project. We'd like to congratulate the project team for a successful tunnel boring machine (TBM) 'hole-thru' of Jay-Dee/Coluccio's TBM into the larger and disassembled VPFK TBM. **Joe Clare** is the PM for the JV with **John Giaudrone,** Jacobs Associates the segment lead. Other project milestones included completion of pipe installation on the Central Contract with **Jay Cooke** as the lead.

Nearing completion of construction in early 2012 is the MWH designed Madison Valley NW Diversion and Washington Park Stormwater Storage project for Seattle Public Utilities. **Mark Graham** is the PM with support from **Joe Clare**, **Ali Leeds**, **Tom Finnegan**, **Andy Frisk**, and **Dusit Roongsang**.

MWH is also very busy with the geotechnical investigations, seismic hazard analysis and dam alternatives for the design of the Susitna-Watana Hydroelectric Project in Alaska. A proposed 700 foot high dam would provide 600 MW to Alaska Energy Authority. A number of staff are involved including **Howard Lee**, **Brian Sadden**, **Alad Hughes**, **Mike Bruen**, **Kirby Gilbert**, and **Rey Hokenson**.

For King County, MWH is designing the replacement to the existing sewer siphon tunnel/pipelines in Fremont and also designing the upgrades to the Sunset-Heathfield pump stations along with a new forcemain. **Joe Clare** is the PM for Fremont Siphon and **Jeff Schmidt** is the PM for Sunset-Heathfield.

In British Columbia, MWH is performing the investigations and seismic retrofit for the Ruskin Hydropower Facility for B.C. Hydro. **Mike Morgan**, **Dave Thompson**, **Greg Rollins**, and **Stan Hayes** are involved.

MWH wishes everyone in the geotechnical community a Happy New Year and prosperous 2012. For career opportunities see www.mwhglobal.com and contact our local office for teaming opportunities.

**Contact: Angie McKeag**
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This year, **Robinson Noble** welcomed two new members to our team. We are pleased to announce **Allan Chartrand** has joined our Environmental division. Allan is an Associate Environmental Scientist with over 25 years of professional experience in environmental sciences, including more than 23 years in environmental consulting. Allan will support both our environmental and geotechnical divisions with his expertise in sediment transport and toxicology. For our Geotechnical division, we welcome **Matt O'Hare.** Matt is a recent geology graduate of the University of Washington, and is currently pursuing his CECSL registration.

Congratulations to **Jeff Wale** for successfully completing his PE exam at the beginning of 2011 and becoming a licensed Professional Engineer. We are happy to see his progression as a professional and are excited to offer his expertise to our clients.

We also updated and expanded our company website this year. Read more about our service lines at: www.robinson-noble.com.

**Contact: Cindy Waddington**
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Shannon & Wilson had a successful 2011 filled with challenging projects; new hires, and steady growth.

Our staff has continued work on the region's most urgent projects: WSDOT's **Alaskan Way Viaduct** and **SR 520 Bridge Replacement and HOV** program. Other key projects included Anacortes Water Treatment Plant; Sound Transit's D to M Street and North Link Projects; Port of Seattle's Rental Car Facility; Auburn High School Modernization and Reconstruction; and numerous infrastructure and expansion projects at Joint Base Lewis McChord.

Shannon & Wilson completed several key projects this year, including WSDOT's **SR 532 Design-Build Corridor Improvements** from Camano Island to I-5, and **Phase 1 & 2 of Amtrak's Design-Build Project - New Cascades Maintenance Facility and Administration Building** in Seattle.

Shannon & Wilson's staff are one of the main reasons for our success. This past year we welcomed the following new talent: **Environmental Group Leader:** Mike Warfel; **National Well Services Director:** Jim Bailey; **Environmental Engineer/Hydrogeologists:** Josh Lee, Laura Jean Wilcox; **Geologist:** Chris Allen; and **Hydraulic Engineer:** Alex Hallenius.

Shannon & Wilson won the Gold Award for the ACEC Washington Engineering Excellence competition for the Elwha River Bridge West Approach Build Back - Clallam County.

Working in the public and the private sector, Shannon & Wilson provides geotechnical, environmental, and natural resources services for the design and construction of transportation, waterfront, and military facilities; buildings and structures; industrial plants, infrastructure components, and en-

ergy generators. Shannon & Wilson's Northwest presence includes our Seattle headquarters plus offices in Richland and Portland.

City of Seattle
Seattle Public Utilities

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Seattle Public Utilities Geotechnical Engineering has been involved with many city infrastructure projects in 2011. The group is led by Claire Gibson, P.E and our staff includes Juan Carlos Ramirez, P.E., Senior Geotechnical Engineer, Sean Caraway, P.E., Senior Geotechnical Engineer, Cody Nelson, L.G., Assistant Engineering Geologist, Aaron Clark, Assistant Engineering Geologist and Taryn Sass, L.G., EIT, Associate Engineering Geologist. Grant Davenport, a Masters student at the University of Washington, Department of Civil Engineering, has been working with us as an intern since the summer of 2011.

Our group assists SPU with geotechnical engineering on our capital improvement projects and help with review of interagency projects, such as the SR 99 Deep Bore Tunnel and Sound Transit. Our largest capital improvement projects this year include several drainage improvements associated with Combined Sewer Overflows (CSO), Madison Valley Drainage, and Green Stormwater Infrastructure (GSI). We continue to monitor slope stability on the Tolt Pipeline and had the opportunity to present a paper on this project during the 2011 ASCE Pipelines conference.

In addition to SPU projects, our group also worked on a variety of projects for Seattle Department of Transportation (SDOT), Seattle City Light (SCL), and Seattle Parks and Recreation Department. These projects include road improvements along 15th Ave NE, a new telecommunications line at the SCL Skagit facility, and several skateparks around the city.

On a personal note Claire Gibson, Cody Nelson, and Aaron Clark each welcomed a new baby to their families this year.

## SubTerra, Inc.

**Contact: Chris Breeds**
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SubTerra entered its 21st year in business continuing its core businesses of tunnel engineering, surface and underground blast engineering, excavation engineering, permitting, abandoned coal mine evaluations, and geotechnical and structural instrumentation throughout 2011. Our Instantel Blast and Construction Vibrations monitoring group added twenty new remote monitoring stations which are now deployed from Alaska to Texas monitoring projects ranging from power plant demolition to pile driving/drilling and roller compacting. Furthermore, SubTerra, Inc.'s "mydataview" internet based data reporting system has been expanded to automatically report both vibration and geotechnical instrumentation data. We would like to thank all our vibration monitoring and geotechnical instrumentation clients that have included small to large engineering companies, project owners, and contractors. In 2012, we look forward to expanding our monitoring and instrumentation services.

During 2011, we provided blast consulting services for the underground expansion at Snoqualmie Falls and the Elwha and Glines Canyon Dam removal project as well as dam projects in Oregon, California, Colorado and elsewhere in Washington. We specialize in close-in blast design and blast monitoring with underground blasting work at Snoqualmie Falls occurring just 70-ft beneath the Salish

Lodge and within 40-ft of the 100-year old turbines in the underground powerhouse.

Microtunnel, Horizontal Directional Drilling (HDD), Sequential Excavation Mining (SEM), Conventional and TBM tunnel engineering services were provided in Texas, Montana, Canada, and California as well as in the Seattle area. We completed a pre-feasibility design and submitted a Feasibility Study (FS) proposal for a project in Israel that will convey seawater from the Mediterranean Sea to the Dead Sea where it will be used to re-fill the latter and generate large amounts of hydropower. The FS will also cover rehabilitation of the Lower Jordan River and desalinating seawater for consumption in Israel, the West Bank, and Jordan. A decision whether to proceed is expected in early 2012 and this project, if it proceeds, will significantly affect our 2012 workload and our personnel needs.

Thanks again to all our partners and clients who have contributed to our success over the past 20 years.

**Swigart Engineering, PLLC**
Waterfront Design and Construction Consulting

**Contact: Bill Swigart**
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**Swigart Engineering** was founded in Seattle, Washington, in early 2011 by Bill Swigart, PE, Waterfront Civil Engineer. Bill has over 30 years of experience in the structural design, construction, and project management for waterfront facilities, primarily on the Pacific West Coast including Alaska. This has included experience with piers, wharves, floating docks, ports, small boat harbors, mooring and fender systems, bridges, earth-filled retaining structures, pile foundations, forms and falsework, shoring systems, heavy lifting, pile driving, special construction devices, and cost estimating. The goal of Swigart Engineering is to provide excellent quality design services and project management for waterfront related projects. We hope to serve consultants, contractors, public and private owners, and industry.

Terracon

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The Washington offices of Terracon had an exciting year on both local and out-of-area projects. We also added staff and consolidated operations into two office locations. 2011 revenue and workload grew 20% over 2010. 2011 highlights for some of our ASCE members included:

- Our WABO Special Inspection department and AASHTO/AMRL certified laboratory operation moved from Redmond into our main Mountlake Terrace office in early 2011. **Eric Kunz** transferred here from Terracon's Rockford, Illinois office to manage the Mountlake Terrace office;
- **Jim Brisbine** and **Steve Needles** are located in Tacoma with **Paul Davis,** our Tacoma office manager; Jim was involved in several landslide stabilization projects, shoring design for Cascadia Center, and the SR520 East project. Steve spent several months in Edmonton on a highway project, and has been involved in projects on JBLM and retail sites.
- **Dave Baska** participated on reconnaissance teams (SEAW and ASCE-TCLEE) to Chile and New Zealand following the 2010 Maule and 2011 Christchurch earthquakes. Dave continues to share his observations and learning through presentations to professional organizations,

public agencies, and A&E firms throughout the U.S. The ASCE-TCLEE monograph for the New Zealand earthquake sequence will be published in January 2012. Soil liquefaction and ground deformation were significant contributors to the building and infrastructure damage from both earthquakes. The lessons learned have a direct impact on design in the U.S. given the modern seismic design practices in those countries;

- **John Zipper** transitioned to a new position of Senior Program Manager. This will involve technical review and management of projects, as well as hands on engineering;
- **Kris Hauck** and **Eric Lim** continue to thrive in our Portland office;
- **Tom Jones** managed retail and pavement rehabilitation projects throughout the US;
- **Rob Ross** and **Rob Sargent** spent the second half of the year on the SR520 east project; Rob Ross also spent the early part of the year on a highway project in Edmonton.
- **Ryan Scheffler** provided field engineering on pile foundation projects, and field exploration on communication towers across the state.
- **Andrew Stetzler** joined the Mountlake Terrace office as a field engineer.
- **Al Zeman** continues to work part time from his base in Cave Creek, Arizona.

**Terracon** senior engineers from other parts of the country provided support for Washington projects throughout the year. In 2011 we imported the equivalent of three person-years of engineering support to local projects.

## URS Corporation

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URS geotechnical engineering and related geological sciences staff were active on projects in all market sectors this past year.

**Transportation**: Air transportation design projects included further improvements at Paine Field in Everett, Vancouver Regional Airport in British Columbia, Kahalui Airport in Hawaii and miscellaneous Boeing facilities , while construction work was ongoing on Taxiway A at Boeing Field. Personnel included **Brian Rapalee**, **Abhijit Bathe**, **Jason Piazza**, **Joshua Alcantara** and **Andy Carpenter**. Highway projects included additional field exploration and completion of design support for the WSDOT I-90 Snoqualmie Pass - East Hyak to Keechelus Dam road widening project, including soil nail wall and bridge components. The geotechnical work was managed by **Cecil Urlich** with **John Zeman**, **Chuck Vita**, **Kranti Maturi**, and **Ken Yang** playing key roles.

**Ports and Harbors**: URS finished a large onshore and offshore exploration project at the Port of Vancouver Washington and provided recommendations for a new materials storage and distribution facility. Continuing design assistance involved extensive finite element modeling of the effects of liquefaction and lateral spread. **Martin McCabe** and **Dave Walker** managed the work with a large assisting staff including **Herb Klug**, **Suren Balendra**, **Pam Craig** and personnel from other offices on the west coast.

**Mining**: URS projects included a new tailings dam in Arizona, a dam raise and expansion in Alaska, and mine closure activities in central and northeast Washington state. **Todd Parkington** coordinated work on many of these assignments.

**Oil and Gas**: Barrier walls were in demand at refineries in western Canada and Oregon, tended to by barrier specialist **Dan Hawk**. Upgrading of refinery facilities occurred elsewhere in Washington, with **Markus Walbaum** providing coordination. **CB Crouse** and **Mark Molinari** worked on a variety of

onshore and offshore pipeline projects, LNG terminals and production platforms in western North America, southeast Asia, Australia and Papua New Guinea. Their work focused on seismic hazards.

**Water Resources and Flood Protection**: Work on a variety of levee projects in King, Pierce and Snohomish Counties was coordinated by **Rod Denherder** with assistance from **David Johnson**. Work on the ASCE award-winning Elwha River Restoration project was wrapped up, and dam removal activities further up the Elwha were initiated. **Chris Sneider** joined the Seattle office staff, but is working out of the Spokane office.

**Contact: Lorne Arnold**
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GIGSS (Geo-Institute Graduate Student Society) is the student-run geotechnical group at the University of Washington. The purpose of GIGSS is to complement the education of geotechnical graduate students at the UW by hosting lectures from professors, scholars and practicing engineers. GIGSS also seeks to encourage a sense of community and camaraderie among its members and the geotechnical faculty. We organize monthly social events including barbeques, holiday parties and the ever-popular "GeoBeers'". These events are often hosted and attended by the geotechnical faculty members (Professors **Pedro Arduino**, **Bob Holtz**, **Steve Kramer** and **Joseph Wartman**).

GIGSS members are always encouraged to attend the local G-I / ASCE SSGG dinner meetings and become involved with the professional community. Several of our members attend these meetings and volunteer to help with the ASCE SSGG Spring Seminar and Short Course.

During the past year, GIGSS hosted the following guest speakers: **Dr. Rinqiu Huang** from Chengdu University of Technology in China, **Mike Harney**, **Oliver Hoopes** and **Stan Boyle** from Shannon and Wilson, **Mark Koelling** from Hayward Baker, **Doug Lindquist** and **Jeff Wagner** from Hart Crowser, **David Shong** from Insulfoam, **Dr. Pelin Ozener** from Yıldız Technical University in Turkey and **Dr. John Kemeny** from the University of Arizona Department of Mining and Geological Engineering.

All of our speakers donate time to share their knowledge and experience with us and we greatly appreciate their contribution to our education. From these lectures in the past year, we learned about career development, several case histories, methods of ground improvement, geotechnical earthquake engineering and areas of current research including porewater pressure generation in layered sands and geotechnical applications of ground-based LIDAR. We also had the opportunity to take two field trips to see landslides in a residential area in Everett, WA and to see pressuremeter tests being performed by In Situ Engineering.

Although GIGSS' events are targeted toward geotechnical graduate students, undergraduate and graduate students from other areas are invited to attend and gain a better understanding of our field. Local professionals are also invited to attend. During the next academic year, GIGSS plans to continue hosting informative lectures and planning field trips and social events.

The GIGSS officers from 2011 are: **Lorne Arnold** (President), **Brett Larabee** (Vice-President), **Mike Beatty** (Secretary), and **Alexandra Cwalina** (Webmaster).

The incoming GIGSS officers for 2012 are: **Tristan Anderson** (President), **Zach Lootens** (Vice-President), **Tori Hesdahl** (Secretary) and **Samuel Probert** (Webmaster).

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The Groundhog is the official newsletter of the ASCE Seattle Section Geotechnical Group and Seattle Geo-Institute Chapter. It is published in on or around February 2nd each year. Submissions for this document were solicited from members of the Seattle Section Geotechnical Group. ASCE, the Geo-Institute, and the Seattle Section Geotechnical Group are not responsible for statements made or opinions expressed in this document. This issue of the Groundhog was prepared and edited by Mike Lach, Secretary of the ASCE Seattle Section Geotechnical Group and Seattle Geo-Institute Chapter.

If you are interested in submitting an article or advertisement in future publications, please contact the Mike Lach at lachma@cdmsmith.com or the 2012 - 2013 Secretary .