2016 Groundhog
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2015-2016 Officers

Back:  Mark Rohrbach, Bob Metcalfe, and Steve Johnson
Front:  Elizabeth Lundquist, Fadzilah (Dila) Saidin, Ben Blanchette, and Lynn Salvati

PRESIDENT
Lynn Salvati, PhD, P.E.
McMillen Jacobs Associates

PRESIDENT-ELECT
Elizabeth Lundquist, P.E.
Parsons Brinckerhoff

SECRETARY
Steve Johnson
Geo Instruments

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GeoEngineers

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Ben Blanchette, P.E.
Hart Crowser

PUBLIC RELATIONS CHAIR
Hayward Baker

WEBMASTER
Todd LaVielle, P.E.
Shannon & Wilson
President’s Message

Happy Groundhog’s Day and welcome to the 2016 edition of The Groundhog! The ASCE Seattle Section Geotechnical Group and Seattle Geo-Institute Chapter (SSGG/SGIC) produces this publication annually to share group announcements, provide our member firms with a forum to share their achievements over the previous year, and discuss our group’s activities and goals.

As President of the SSGG/SGIC, I get to be the face of the group – welcoming you to meetings, sending out all of the group announcements, and writing these introductions. However, the real work of this group is done by our officers and volunteers, and I would be remiss not to recognize them here.

Elizabeth Lundquist, our group’s President-Elect, is hard at work organizing this year’s Spring Seminar, to be held April 2nd at the University of Washington. This year’s seminar will cover the topic of Deep Foundations.

Our Secretary Steve Johnson has been taking the minutes at our meetings and has worked diligently to produce this publication.

The group’s Treasurer, Dila Saidin, is the first face many of you see at the dinner meetings, making sure your payments are accounted for, so that our finances are always in order.

Education Chair Ben Blanchette organized all of our dinner meetings, and he is also organizing a short course to be held the day prior to the Spring Seminar.

Public Relations Chair Mark Rohrbach is organizing a Ground Improvement Committee and handling our outreach activities.

Membership Chair Bob Metcalfe maintains our membership list and acts as a senior-level advisor to the board. His past experiences as President of the group help guide our decisions as we move the group forward.

Todd LaVieille serves as our Webmaster. He maintains the SSGG/SGIC website and helps with our Mail Chimp and Brown Paper Tickets accounts.

We are happy to continue our relationship with the University of Washington’s Geo-Institute Graduate Student Society (GIGSS) Chapter. We’ve seen an increase in the number of students attending our meetings, several of the students are volunteering to help put on our events, and we have been able to provide financial assistance to their group to support their meetings.

Thanks largely to this great relationship, the SSGG/SGIC and the UW GIGSS have been selected as co-hosts for the Geo-Institute’s cross-country lecture for the fourth year in a row. This year’s lecture will be given by Dr. Jean-Louis Briaud. The lecture will be held March 1st.
Our group continues to support to the UW graduate program through the Robert D. Holtz Endowed Fellowship. Established in 2007 with an initial endowment of $50,000, this fund has grown to just under $300,000 through contributions from Dr. Holtz, local firms, and our group. Our group contributed $30,000 in 2015. We are on track to make another contribution this year, and hope to continue growing the endowment to provide more annual funding to the UW program and support geotechnical engineering graduate students.

Our group’s mission is “to advance geotechnical practice in the Puget Sound Region by providing leadership on public issues, sharing professional experience, and promoting education.” We plan our dinner meetings, short courses, spring seminar, and outreach activities with this mission in mind. Dinner meeting topics and selected speakers, short courses, and the spring seminar are intended to advance geotechnical practice locally, in some cases through shared professional experience.

At the Spring Seminar in May our chapter was the recipient of an honor. The Seattle Geo-Institute Chapter was awarded the 2014 Geo-Institute Chapter of the Year for outstanding commitment to advancing the Geo-Profession on the local level. As shown in the photo below, Bo McFadden (on the right), who has served as a representative on the Geo-Institute Local Involvement Committee presented the award to Tyler Stephens (on the left), our outgoing president, on behalf of the group.

Our group continues to grow and thrive, thanks to the dedication and support of each and every member. The board is always looking for volunteers to serve on committees, plan events, and get involved! I would encourage everyone reading this to consider helping us out and making your group even stronger.

Thanks for reading, and we’ll see you at the meetings!

Lynn Salvati
President 2015-2016
## 2015-2016 Events Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Speaker</th>
<th>Topic</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/17/15</td>
<td>DM, joint with AEG</td>
<td>Jared Smith</td>
<td>Nepal Earthquake Recovery</td>
<td>Best Western, Seattle</td>
</tr>
<tr>
<td>10/29/15</td>
<td>DM</td>
<td>Jeremy Butkovich</td>
<td>Dynamic Soil-Structure Interactional Analysis for Base-Isolation Design of the SR 520 West Approach—North</td>
<td>Best Western, Seattle</td>
</tr>
<tr>
<td>11/19/15</td>
<td>DM</td>
<td>Rick Smith</td>
<td>Getting to the Fun Part: Client-Focused Contract Negotiations</td>
<td>Best Western, Seattle</td>
</tr>
<tr>
<td>12/17/15</td>
<td>DM</td>
<td>Larry Applegate, Dan Mageau, and Aaron McCain</td>
<td>Innovative Uses of Ground Freezing for Civil Construction Projects</td>
<td>Red Lion, Bellevue</td>
</tr>
<tr>
<td>1/28/16</td>
<td>DM, joint with ASCE</td>
<td>Scott Miles</td>
<td>Resiliency</td>
<td>Best Western, Seattle</td>
</tr>
<tr>
<td>3/1/16</td>
<td>Hennes Lecture</td>
<td>Jean –Louis Briaud</td>
<td>Observation Method for Bridge Scour</td>
<td>UW Campus</td>
</tr>
<tr>
<td>4/1/16</td>
<td>SC</td>
<td>Jerry Dimaggio</td>
<td>Deep Foundations</td>
<td>Red Lion, Bellevue</td>
</tr>
<tr>
<td>4/2/16</td>
<td>SS</td>
<td>Multiple Speaker</td>
<td>Deep Foundation</td>
<td>UW Campus</td>
</tr>
<tr>
<td>4/21/16</td>
<td>DM</td>
<td>Donald Bruce</td>
<td>Terzaghi Lecture</td>
<td>Red Lion, Bellevue</td>
</tr>
<tr>
<td>5/26/16</td>
<td>DM</td>
<td>Ellen Rathje</td>
<td>Seismic Stability of Slopes or Liquefaction and Lateral Spreading</td>
<td>Best Western, Seattle</td>
</tr>
</tbody>
</table>

DM  Dinner Meeting  
SC  Short Course  
SS  Spring Seminar
2016 Spring Seminar and Short Course Update

The ASCE Seattle Section Geotechnical Group / Seattle Geo-Institute Chapter is proud to announce that our 33rd Annual Spring Seminar will be held on Saturday, April 2, 2016 on the University of Washington campus at Kane Hall. Based on feedback from our members, the topic of the seminar this year will be Deep Foundations.

We are pleased to announce that we will have a range of speakers including professors and regional experts who will give presentations on local projects. Presentations will include design, installation and testing.

In addition to the specific topic presentations, the Spring Seminar will include our annual Service Award Presentation, exhibitor displays, and hosted lunch and breaks. 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, April 1, 2015.

Our Steering and Planning Committees are helping to produce one of the most respected regional seminars in our industry, but we could still use your help. Volunteers for the Planning Committee are always welcome. Please contact Elizabeth Lundquist at ‘lundquist@pdworld.com’ if you are interested in helping out. It is a great way to get involved with the group!

Mark your calendars and make plans to attend the 33rd Annual Spring Seminar, and look to our website www.seattlegoetech.org by mid February for more details and to register for the Spring Seminar and the Spring Short Course!

Elizabeth Lundquist, P.E.
President-Elect 2015-2016
Public Relations

The goal of the Public Relations Chair is to:

“Proactively cultivate relationships with professional organizations, public agencies, academic institutions, and others to increase awareness of the role of geotechnical engineers and their benefit to society and the environment.”

This year the effort has focused primarily on strengthening relationships with public organizations. To that end a new, temporary committee within the group is currently being formed. This new committee will consider the recent research regarding the effectiveness of "discrete reinforcement based" ground improvement designs and the widely diverging ground improvement designs and design methods currently being used in the Seattle Region. Participation in the committee is open to all interested parties. Thus far sixteen professionals representing eight consulting companies of various sizes, four contractors, one material supplier and public officials have indicated a desire to participate.

If you are interested in participating in this committee, or would like to be kept appraised of committee developments, please contact Mark Rohrbach at MARohrbach@haywardbaker.com.

Public Relations Chair
UW Geo-Institute Graduate Student Society

The Geo-Institute Graduate Student Society (GIGSS) is a student-run organization at the University of Washington created to provide social and extracurricular events for graduate students. GIGSS hosts a seminar series at the UW featuring lecturers from the industry and academia, and provides opportunities for students to attend graduate seminars and present research. GIGSS is also a social organization and hosts pot-lucks with the UW faculty and organizes “GeoBeers” mixers with other graduate organizations.

UW students attended the Northwest Graduate Student Symposium in Geotechnical Engineering (NGSSGE) from April 23-25th at Oregon State University in Corvallis, Oregon. NGSSGE is an annual event hosted by different universities with geotechnical engineering programs in the Pacific Northwest to discuss ongoing research. Attending Universities included University of Washington, University of British Columbia, Washington State University, Portland State University, and Oregon State University. The conference included research presentations, a poster session, lab and campus tour, and an evening bbq on April 24th. UW graduate research presented at the symposium included a diverse range of topics:

**Earthquake-Induced Landslide Hazard Mapping in Lebanon** (Alex Grant)

**Identifying the Time of Liquefaction Triggering** (Mike Greenfield)

**Dynamic Response for Retaining Walls** (Cyndi Lopez)

**Numerical Evaluation of Forces on Piled Bridge Foundations in Laterally Spreading Soil** (Alborz Ghofrani)

**Verification of True Triaxial Apparatus** (Minyong Lee)

This year’s event was a great chance to meet our grad student colleagues and share our research, and we look forward to next year’s edition at WSU in the spring of 2016. This spring quarter GIGSS hosted the 2015 Cross-USA Lecturer Professor Ken Stokoe from the University of Texas Austin. Professor Stokoe’s presentation was on the effectiveness of inhibiting liquefaction triggering by shallow ground improvement methods and focused on his work in Christchurch, New Zealand following the 2010 and ’11 earthquakes. The objective of his work was to create a more resilient Christchurch with improvement methods focused on the top four meters of soil and tested by a mobile triaxial shaker called T-Rex. GIGSS is excited to host Professor Jean-Louis Briaud from Texas A&M University for the 2016 Hennes Lecture on March 1, 2016 in Alder Hall at the UW Campus. More details will be available at [seattlegeotech.org](http://seattlegeotech.org). Over the past year it has been our pleasure to host seminars from the local geotechnical community. If you are interested in giving a lecture in the coming months, please contact Colton McInelly at mcinecol@uw.edu.
Local Firm Summaries

ASCE Seattle Section Geotechnical Group would like to thank the following companies for volunteering to submit articles for the 2016 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.

Adapt Engineering
AECOM
Assoicated Earth Sciences
Amec Foster Wheeler
Aspect Consulting
CDM Smith
CH2M
Condon Johnson
Geo Instruments
GeoEngineers
GeoPier Northwest
Gregory Drilling
GRL Engineers

Hart Crowser
Hayward Baker
Holocene Drilling
HWA GeoSciences
Kleinfelder
Landau Associates
Malcolm Drilling
McMillan Jacobs and Associates
Pacific Pile and Marine
Robinson Noble
Seattle Public Utilities Geotechnical
Terracon
Adapt Engineering (Adapt) is a minority owned small business that has been providing Geotechnical and Environmental consulting services in the Pacific Northwest since 1997. Adapt is dedicated to providing practical high quality service and engineering solutions to our clients in the financial, development, and telecommunications industries. Adapt has offices located in Seattle, Washington and in Portland, Oregon.

Adapt personnel have been supporting the telecommunication industry with Geotechnical, Environmental and Engineering Support since the 1980’s, both with new builds and recurrent site modification programs. Adapt is known in the telecommunication industry as the “go to” consultant for expedited, expert, and cost effective support. Adapt personnel supported the original cellular system build-outs in the Pacific Northwest for most major telecommunications companies and proudly continues to service those clients.

Hotel/Café in Pioneer Square

Provided geotechnical support for the renovation of a historic building in Pioneer Square.

An annex on the western side of the building was observed to be overturning due to the soft nature of the subsurface soils in that area.

Subsurface investigations were completed in the basement of the structure in order to provide recommendations for underpinning of the existing foundation beneath the structure with micropiles and auger-cast piles.

Apartment Building in Capital Hill

Provided geotechnical engineering and construction monitoring services for a new mixed-use apartment building in Capital Hill.

Proposed structure is located near two existing apartment complexes. Surveys were done to observe the differential settlement caused by the proposed structure.

Transmission pole replacement

Provided geotechnical and structural support services for several significant transmission linecorridors for a local power provider in Bellevue.

Environmental Services for Apartment Building in Capital Hill

Provided Phase 1 and Phase 2 subsurface characterization for a new a new development. We identified a relic dry cleaner facility, characterized the solvent release, and provided possible remediation solutions.

Additionally, in 2015, for the second time in four years, Adapt was honored by the Harvard Business School Initiative for a Competitive Inner City (ICIC) as one of the 100 fastest growing inner city businesses out of 10,000 candidates in America.

We are looking forward to another great year in the Northwest!
In 2015 all AECOM geotechnical-geological personnel in WA cheered our AECOM counterparts in Hong Kong who pushed forward without interruption the 3-mile long Tean Mun – Chek Lap Kok Link subsea highway tunnel using a TBM slightly larger than our unlucky neighbor Bertha. Meanwhile we were handling our own workload locally, which included:

**Infrastructure - Transportation:**

**Aviation** projects included North Satellite Terminal expansion at SeaTac, the LA International Airport, US Coast Guard airports in Astoria OR and Port Angeles WA, King County International Airport, and at the Boeing Renton facility. **Highway** projects included the WSDOT I-405 Bellevue to Lynwood widening. Key personnel: Martin McCabe, Brian Rapalee, Markus Walbaum, Andy Carpenter, Suren Balendra and Ken Yang.

**Industrial – Mining:** Mining activity remained strong despite lower metal prices with tailings dam study, design and construction at Red Dog Mine in AK, a conveyor tunnel stabilization study at Elkview Mine in BC, safety inspections for Tundra Mine closure in NT, root cause analysis of uncontrolled tailings releases at mines in BC and ON, and design and construction reviews at two diamond mines in NT. Cecil Urlich and Todd Parkington directed the mining activities with support of Kranti Maturi, Suren Balendra, Ken Yang, Cris Castro, Arturo Ortiz, Rod Denherder, Rik Langendoen, Chuck Vita, Mark Molinari, CB Crouse, Courtney O’Neill and Brian Osgood in Seattle, plus staff from our AK, BC and OR offices.

**Industrial – Oil and Gas, Paper/Wood Products, Steel:** C.B Crouse and Mark Molinari performed seismic and geologic studies for offshore platforms in Trinidad and Australia, and a petroleum storage/shipping terminal in Vancouver WA. Our work included Shell, Tesoro, and Phillips 66 refineries in WA for rail transport, tankage and equipment expansions. Key personnel - Markus Walbaum, Pam Craig, Michaela McCoog and Bruce Cassem.

**Infrastructure – Hydropower, Water Resources and Wastewater:** Stephen Benson and Steve Goodin efforts included Minnesota Power’s Thomson Hydro Development, slope stability and seepage evaluation at Swift No. 2 Hydro Project for Cowlitz County PUD in WA, Entergy’s Lewis Creek Dam in TX for remediation measures and a Surveillance and Monitoring Plan. Sarah Kemp and Bonnie Witek evaluated instrumentation data for the Swift No. 2 Hydro Project, and Steve Benson provided geotechnical services to support the FERC license application for a pumped storage hydro project in MT. Steve Goodin provided rock mechanics assessment for the City of Ashland’s Hosler Dam in OR, and for Minnesota Power’s (MP’s) Thomson Hydro Development Arch Dam #6. Bonnie Witek is evaluating instrumentation for Seattle City Light at the Cedar Falls Dam in King County, WA.
AESI would like to wish everyone a Happy New Year!

Our diversified client base and continued economic growth in the area resulted in a very successful 2015 for us. Schools, mixed-use development, senior housing, assisted living, healthcare and infrastructure projects kept us very busy under the leadership of President Bruce Blyton.

At the Kirkland office, we welcomed Matt Zeller, Staff Geologist, Peter Linton, Staff Geologist and Brendan Young, Technician into our geotechnical group. We are proud to announce that Danika Globular, Senior Staff Engineer was successful in obtaining her PE license in October.

Notable AESI projects in 2015 include:

- Multiple high-rise towers on a site in downtown Bellevue having a deep excavation and shoring. First phase of construction to start in late 2016.
- Large redevelopment of an existing commercial/retail site in downtown Kirkland with multiple mid-rise buildings, underground parking and shoring. First phase of construction to start in early 2016.
- Several large mixed-use projects
- Multiple residential subdivisions and short plats on the Eastside
- Many new K-12 schools either in design or under construction
Staff in our Bothell, Seattle, and Tacoma offices have focused on local clients but also collaborated with other Amec Foster Wheeler offices to share resources and expertise. Jim Dransfield has been working with engineers from other offices to upgrade jetty facilities in Asia. Locally, he has been teaming with various companies to design Sound Transit Light Rail projects, levee assessments and other infrastructure improvements. Todd Wentworth has been involved with numerous slope stability assessments, roadway improvements, stormwater infiltration facilities, and new school construction projects. Bill Lockard worked on a remedial project in the Seattle area most of the year and is part of the team making repairs to the Spirit Lake Tunnel near Mt. Saint Helens. Henry Brenniman continued with conducting slope stability assessments for several cities, worked on multiple road improvement projects and indicates that retirement is just around the corner. Konrad Moeller has been monitoring construction for a remedial project in the Monroe area, and several school and commercial development projects locally. Koorus Tahghighi continues to design excavation and shoring systems for several high-profile contaminated soil remediation projects. Ryan Barnes is designing of stormwater management facilities and assisting with construction monitoring projects. New additions to our staff during the year were Frank Crossley and David Chain. Frank recently passed his P.E. exam and is assisting the senior engineers with wall, pile, liquefaction and earthquake analyses, and assisting with construction monitoring. David is an engineer in training and worked on multiple school and commercial construction monitoring projects during the year.

We look forward to new opportunities to contribute our expertise to regional and local transportation projects, ports, levees, and municipal facilities, while continuing to collaborate with other Amec Foster Wheeler offices worldwide.

**Todd D. Wentworth, P.E., L.G.**
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Bothell, Washington, USA
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O (425)368-1000
D (425)368-0938
Aspect Consulting’s infrastructure / geotechnical engineering group flourished in 2015, led by the talents of Henry Haselton, Dave McCormack, and Erik Andersen. From floodplain restoration to slope stabilization to urban development, we helmed a diverse mix of projects across the state.

New Bellingham Office: The year began with the opening of our fifth office. Headed by Erik Andersen, the Bellingham office allows us to provide more face-to-face collaboration and responsiveness to North Sound clients.

Habitat/environmental restoration: Aspect continues to be a sought-after teaming partner for levee, culvert, and floodplain mitigation. We completed the system-wide evaluation and early action alternative analyses for King County's South Fork Snoqualmie River project. Henry Haselton, teamed with HDR, completed geotechnical support for the 30 percent design on King County's Russell Road levee setback, an important flood control/restoration project along the Green River. We and TetraTech helped replace five culverts on lower Coal Creek for the City of Bellevue.

Around Seattle: In December, Aspect began work to help revitalize the Seattle waterfront with geotechnical support to rebuild Pier 62. We started work on a 42-story high-rise on 6th Avenue and a full block of development adjacent to Roosevelt High School. For the Port of Seattle, we are collaborating with Floyd|Snider on the Lora Lake parcel remediation near SeaTac Airport. We continued work for Seattle Public Utilities as part of our geotechnical on-call contract, along with the Henderson Basin 49 storage project and the 10th Avenue culvert replacement on Thornton Creek.

Slope stability: Our work on the Port Angeles Landfill project has given us the exciting opportunity to support the final design and construction of one of the tallest mechanically stabilized earth slopes on the west coast. Aspect also worked with several municipalities for slope stability analysis, including Dave McCormack’s landslide assessment for the City of Renton.

West Sound and Central/Eastern Washington: From our Bainbridge Island office, Andrew Holmson led work to replace three bridges in the Hoh rainforest for the Department of Natural Resources, plus multiple culvert replacements. In Wenatchee, Nick Szot was busy with bridge and culvert replacements, along with work on several large fruit storage buildings.

New Faces: Our team grew stronger with the addition of Annaliese Eipert and Jesse Favia, who received his Geology license in October. As Aspect grows, we are actively recruiting junior and senior-level geotechnical engineers to join us. We look forward to strong partnerships and intriguing projects in 2016.
Your Subsurface Exploration Resource.


Geotechnical
Environmental
Construction

www.holocenedrillinginc.com
CDM Smith provides lasting, integrated solutions in water, environment, transportation, energy and facilities to public and private clients worldwide. In the Northwest, CDM Smith has offices in Bellevue, Seattle, Portland, Helena, Libby, and Burnaby, B.C.

The close alignment between CDM Smith’s geotechnical and structural engineering technology groups contributed to a successful year where we provided innovative solutions for the design and construction of complex infrastructure projects in the Pacific Northwest, expanding our operations in the Vancouver, B.C. metropolitan area with the opening of a new office in Burnaby. In addition to our strong focus on underground construction projects, we worked on numerous reservoir, dam, levee, slope stabilization, and geoenvironmental projects.

**John Newby**, P.E., continues to serve as a program lead and lead geotechnical practitioner for major infrastructure projects in the Western U.S. and Canada, including the Annacis Island WWTP transient mitigation and outfall project in the Vancouver metropolitan area. **Joe Souther**, P.E., leading the geotechnical group in Bellevue, was commended by the State of Colorado and the Federal Emergency Management Agency for his contribution in the emergency response to the severe storms, tornadoes, flooding, and landslides happening there in 2015. He also worked on railroad rock and soil slope stabilization projects throughout the Western U.S. **Dr. Sri Rajah**, Ph.D., P.E. worked on seismic pipeline design for the Seattle Western Avenue water main replacement and conducted a forensic investigation into large-diameter pipeline failure at the East Coast. He is an active member on several technical committees of ASCE, AWWA, and ASTM related to pipeline design and continues to serve as a national pipeline committee chair and associate editor for ASCE. **Ulf Gwildis**, L.E.G., led a multinational team conducting the geophysical and geotechnical exploration for an onshore pumping station and an offshore 6-mile long outfall tunnel near Doha, Qatar. Now back in the Pacific Northwest, he provides his expertise in mechanized tunneling, trenchless technology, and ground freezing to several clients including SPU, Sound Transit, and Metro Vancouver. **Karen Irby-Smith**, managing our geotechnical laboratory, also worked on the environmental and geotechnical exploration for slurry wall containment design at the Hunter’s Point Naval Base in San Francisco.

We continue seeking to add geotechnical professionals to our nation-wide team working on numerous technically exciting and challenging projects throughout the U.S. and beyond.
CH2M’s Bellevue geotechnical group continues to support our company’s work as a world-wide leader in the design and construction of transportation, water, environmental, energy, and facility projects. We employ over 100 geotechnical engineers and tunneling specialists throughout the U.S. and about 500 world-wide to support CH2M’s total staff of approximately 27,000.

A sampling of interesting projects this year includes:

- Design of a combined sewer overflow treatment station, large diameter conveyance pipelines, and a new outfall to the Duwamish River for King County in the Georgetown area of Seattle. The project included explorations to depths in excess of 200 feet, cyclic strength testing, and site-specific seismic response analysis.
- Continued work on design for the Anchorage Port Modernization Project (APMP). Recent work involved 35% design of pile-supported wharves and backland facilities, and coordination of an indicator pile test program on 200 foot, 48-inch diameter pipe piles.
- Continued work on the preliminary design for the Sound Transit’s Tacoma Link Extension Project. This project includes a 2.4-mile, double-track alignment that would continue north from the existing Theater District Station along Stadium Way to Martin Luther King Jr. Way and South 19th Street via Division Avenue.
- Assistance to WSDOT with construction of our geotechnical designs for ground improvement and settlement monitoring as part of the I-5, Portland Ave to Port of Tacoma Road, NB HOV project.
- Design and interpretation of results for an instrumented static load test program for American Piledriving Equipment’s high strength helical piles which were installed through up to 65 feet of degrading permafrost, founded in glacial till, and tested to loads in excess of 800 kips in northern Manitoba.

This year we added two new staff in Bellevue. Travis Kraupa was able to extend his previous experience with drilled shaft inspection on Snoqualmie Pass to oversee construction of 5- and 8-foot diameter drilled shafts for the Sullivan Road Bridge over the Spokane River for the City of Spokane Valley. Menzer Pehlivan adds previous consulting experience and PhD work focused on geotechnical earthquake engineering. Menzer was a member of a GEER reconnaissance to Nepal, is an active EERI committee member, chairs ASCE’s new Diversity and Inclusion committee, and was recently named as one of ASCE’s 10 New Faces of Civil Engineering.

Other professional activities of the group have included Karen Dawson’s involvement on the DFI committee that is preparing design guidelines for helical piles, and Don Anderson’s work on a TRB AFF50 seismic bridge design committee.
Condon - Johnson & Associates, Inc.

Condon-Johnson & Associates Inc. (CJA) is a diversified heavy civil engineering construction company whose core competencies include drilled shafts, micropiles, displacement piles, anchored earth retention, dewatering, grouting, and ground improvement.

In 2015, CJA opened up an office in Portland to better serve the Oregon market. Please feel free to contact Spark Johnston (SJohnston@condon-johnson.com) on your next project.

In 2015, the Northwest District added the following key personnel:

**Ed Chappelle** rejoined CJA as a Field Superintendent. Ed has over three decades of experience in geotechnical construction.

**Elly Bulega** graduated with his MS in Geotechnical Engineering from WSU. Elly interned with CJA last summer and has now joined us fulltime as a Field Engineer.

**Peter Mercer** is an Oregon State graduate who joined CJA in June of last year as a Field Engineer and is working on a Port of Juneau project.

**Hayden Sahnow** is an Oregon State graduate who joined CJA in June of last year as a Field Engineer and is working on the I-5 116th St. NE Interchange.

2015 Project Highlights:

**I-5 116th St. NE Interchange.** CJA starts the year by continuing to install 7-ft and 8-ft diameter drilled shafts for Tulalip Casino Interchange. The temporary casings for these shafts were installed using a 3.05m oscillator. Stone column ground improvement is also key to this project.

**Hoa Mai Gardens.** Groundwater drainage tunnels were constructed in the 1920’s in an attempt to stabilize the hillside along South Main Street. Since then the tunnels have collapsed and CJA was hired to fill the voids and compaction grout the area. CJA also installed a Tecco Mesh slope stabilization mesh with soil nails for slope stabilization.

**Cowlitz Falls North Shore Collector.** CJA was contracted to install 2.5-ft and 4-ft drilled shafts socketed into bedrock and a permanent shoring wall to stabilize the construction of a new fish collector structure at the Cowlitz Falls Dam.

CJA is committed to serving its clients and the engineering community. During the design phase of your next project, please feel free to contact Doug Watt (DWatt@condon-johnson.com) for assistance with conceptual design, feasibility studies, and budget pricing.

If you have specific questions, you can also contact Dominic Parmantier (DParmantier@condon-johnson.com) for grouting/ground improvement or Spark Johnston (SJohnston@condon-johnson.com) for micropile/barrel vaulting.
Geo Instruments provides custom monitoring systems and geotechnical instrumentation. We specialize in automated telemetry and system integration, so our clients can access the data they need anywhere. Each system is custom and unique, can be designed to measure vibration, noise, load, strain, pressure, displacement and more. We perform work all over the United States with offices in Seattle, Rhode Island, New York, and Washington D.C. We are certified service providers for Instantel, Trolex, Amberg Rail, and Sisgeo.

Geo Instruments maintains a large inventory of rental equipment, including vibration monitors, automated motorized total stations, solar panels, automated telemetry, dataloggers and more.

2015 Geo Instruments Project Work:

- **Elliott Bay Seawall Replacement Project, Seattle, WA:** Geo Instruments installed long term monitoring solutions involving inclinometers and tiltmeters, and monitored construction activities with multiple instrumentation arrays and automated telemetry.

- **I-90 Snoqualmie Pass East - Hyak to Keecheles Dam (Phase 1), Snoqualmie Pass, WA:** Geo Instruments installed long term monitoring solutions on rock dowels and monitored construction activity with automated motorized total stations (AMTS) and automated telemetry.

- **U240 Capitol Hill Station, Seattle, WA:** Geo Instruments installed multiple borehole instrumentation arrays and automated vibration monitoring systems continuously monitoring construction activity.

- **Kennedy Center Expansion Project, Washington, DC:** Geo Instruments installed instrumentation monitoring construction activity at the Kennedy Center For Performing Arts. Multiple instrumentation arrays are monitoring many structures and utilities with automated telemetry.

- **MD 97 Georgia Ave at Randolph Road, Silver Spring, MD:** Geo Instruments installed instrumentation with automated telemetry in Washington Metro Area Transit Authority’s (WMATA) transit tunnels ensuring adjacent construction activity doesn’t impact existing structures.

- **Transbay Transit Center, San Francisco, CA:** Geo Instruments provided continuous monitoring of construction activity with six automated motorized total stations (AMTS) and a large network of over 250 target prisms.

- **Salesforce Tower, San Francisco, CA:** Salesforce tower will be the tallest building in San Francisco and the centerpiece of the Transbay Redevelopment project. To monitor the support system Geo Instruments deployed an automated motorized total station (AMTS) network involving four total stations and over one hundred target prisms.

Please visit www.geo-instruments.com for more information of our products and services.
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Drilled Foundations ♦ Dewatering ♦ Shoring ♦ Ground Improvement
Engineering News Record (ENR) ranked GeoEngineers 195 in its annual list of the top 500 design firms in the country by revenue in 2015, marking the second consecutive year that we have moved upwards in the rankings.

2015 Project Highlights

- The Block 14 Amazon Inc. tower, the first of three 37-story towers for Amazon’s Seattle expansion.
- The 1.2 million-square-foot expansion of the Washington State Convention Center.
- Expansion of the First Hill Swedish Medical Center.
- South Sound schools including Stadium High School, Stewart Middle School and McCarver Elementary.
- The new Emerald Queen Casino Parking Garage in Tacoma.
- SR-167 HOT Lanes design-build project, in Auburn.
- Sound Transit’s North Corridor Transit Project.
- The 224th Street Bridge over SR-167, in Kent.
- Levee projects including Horseshoe Bend, Hawley Road, and the Briscoe-Desimone Levee.
- Developed Seismic Hazard Response Protocols for Phillips 66 petroleum pipeline systems
- Puget Sound Energy’s Energize Eastside facilities.

We are proud to have played a geotechnical role in several projects honored with awards in 2015 including four of the eleven American Public Works Association Washington (APWA-WA) Projects of the Year:

The American Council of Engineering Companies (ACEC) recognized the reconstruction of Washington State Route (SR) 530 following the Oso Landslide with two awards: the National Honor Award and the ACEC-Washington Transportation Gold Award. The project also won Project of the Year from APWA-WA.

A roundabout connecting Pioneer Highway and Fir Island Road received awards from two state agencies: Project of the Year from APWA-WA, and a Silver Award from ACEC Washington.

The recently completed University of Washington Tacoma YMCA received a merit award from the American Institute of Architects Southwest Washington chapter.

Port of Tacoma’s Pier 3 Upgrade and the Primary Sedimentation Basins at the Budd Inlet Treatment Plant both received APWA-WA Project of the Year Awards.

The busy year meant several new hires and promotions in GeoEngineers’ Seattle, Redmond, Salem and Tacoma offices:

Robert Metcalfe (Redmond) and Julio Vela (Salem) stepped into roles as principals and Debra Overbay (Redmond) was promoted to associate.

Joining GeoEngineers in 2015 were Stuart Thielmann (Tacoma); Christopher Kokesh and Yanbei Zhang (Redmond); and Ben Upsall, Michelle Deng and Carl Longton (Seattle).
2015 was a year of continued growth and expansion for Geopier Northwest, Inc. We were fortunate to be included on many design-build where we could offer value added ground improvement solutions for issues ranging from organic soils to undocumented and contaminated fills to liquefiable soils. Our continued growth is a direct result of geotechnical engineers thinking outside of “the box” in order to come up with innovative and cost effective solutions for their clients. A special thank you goes out to the following geotechnical firms that included us on their projects: AMEC Earth & Environmental, Associated Earth Sciences, Carlson Geotechnical, Columbia West Engineering, Earth Solutions NW, GRI, GeoDesign, GN Northern, GeoEngineers, GeoTest Services, Golder Associates, Hart Crowser, Kleinfelder, PSI, Robinson Noble, Ins., Shannon & Wilson, Strata, Terra Associates, Terracon, and URS.

Our growth has been driven by continued increasing awareness of seismic performance of structures and liquefaction hazard by owners. Many of our projects in 2015 included some form of liquefaction mitigation. The patented Geopier-Impact™ displacement system is perfectly suited to mitigate liquefaction hazards and provide foundation support by installing stiff Geopier® elements to depths of up to 50 ft. beneath the water table while creating no spoils and not utilizing air or water jetting during installation!

We have also seen our market offerings expand with more grouted Geopier-Impact and GeoConcrete Column rigid inclusions. These two systems offer the same benefits of rigid inclusions with the additional benefits of the displacement process and compacted lifts which help improve the surrounding soil. Many of our projects involving these rigid elements involve penetrating very soft/loose fill soils or organic soils beneath the groundwater.

We are looking forward to teaming with old and new professionals in 2016. Cheers to 2015 and we are excited about continued growth and exciting opportunities for ground improvement in 2016! If you would like to discuss potential projects or schedule a Geopier seminar please contact David Van Thiel, P.E., G.E., at dvanthiel@geopiernorthwest.com or (425)646-2995.
Limited Access Drilling in 2015

CME 55LCX

In 2015, we made great use of our one-of-a-kind CME 55LCX (low clearance) rubber-track drilling rig—it has the torque and power of a CME75HT or CME 850 with a working height of just over 12 feet. It is the only rig in existence of its size with this much power. Capable of both mud rotary and hollow stem auger drilling, the 55LCX features a 140 pound auto-hammer for extremely consistent and accurate Standard Penetration Test results. It meets all ASTM-D-1586 requirements and is perfect for geotechnical and environmental projects.

This low clearance, compact, track-mounted rig will drill where truck-mounted rigs can't including:

- Under low bridges & canopies, including gas station canopies
- Below low-hanging power lines
- On bluffs and other rough terrain

The small footprint of 7' 5" W x 9' H x 15' L makes it easy to transport, and since it weighs only 17,000 pounds it can be hoisted by a crane. Its ability to turn in place, plus the 12-foot working height make it ideal for tight spots. Not only that, the CME 55LCX is rubber track mounted for damage-free driving on concrete. This rig can climb a 50% grade and tackle even the roughest terrain—it can go just about anywhere you need data.

COMPACT DRILL RIG

Our Compact Drill Rig is equally useful in tight spaces. This drill rig gives access to building interiors, hallways, slopes and residential back yards. With a travel height of 37 inches wide x 80 inches access is no problem for this compact, rubber-track rig. It can be hoisted into position using a boom truck or crane. It has a working height of 12' 9" and can handle 3-1/4 up to 6-1/4 ID augers for both geotechnical and environmental projects.

Features:

- Clearance to fit through a 37-inch wide opening
- Easily lifted by crane or boom truck (7,000 lbs.)
- 140 pound auto-hammer for accurate SPT sampling to ASTM standards
- 5,000 pounds of torque provides plenty of power for most shallow site characterizations
- Rubber tracks won't harm pavement or flooring
GRL engineers marks first year in the Seattle area

2015 marked the first full year of the new GRL office in Washington State - serving the American Northwest, Alaska, and Western Canada.

The Washington State office of GRL offers the whole gamut of deep foundation testing and analysis services for which GRL is known. These include pile driving monitoring and high strain dynamic load testing (with the PDA and CAPWAP® software) of not only driven piles but also helical piles, augercast piles, and drilled shafts. Other services include Crosshole Sonic Logging, Thermal Integrity Profiling, Pile Integrity Testing, SPT rig calibration, and GRLWEAP analysis.

Marty Bixler, P.E. is manager of the office. Some highlights from 2015 include:

• Ocosta Elementary School, Westport, WA: Thermal Integrity Profiling and Pulse-Echo Pile Integrity Testing of augercast piles. This is North America’s first Vertical Tsunami Evacuation Site.
• Port Angeles, WA, Port Terminal 1 Redevelopment: high-strain dynamic testing of steel pipe piles.
• Port of Vancouver, WA: Low-strain Integrity Testing of Existing Timber Piles to determine unknown pile lengths.
• 230 kV Power Transmission Structures, Portland, OR: Crosshole Sonic Logging and Pulse-Echo Pile Integrity Testing of drilled shafts.
• Furie KLU #3 Platform, Cook Inlet, AK: Preliminary Drivability Analysis (GRLWEAP) and high-strain dynamic testing of steel pipe piles including underwater testing.
• MRJN 460/469 and ZULF 510/519 Platforms, Saudi Arabia: high-strain dynamic testing of steel pipe piles.

We look forward to working with more ASCE Seattle Section Geotechnical Group members in 2016.
Quality Assessment of Deep Foundations

by the Foundation Testing Experts

- Dynamic Load Testing (APPLE for drilled shafts)
- Cross Hole Sonic Logging
- Thermal Integrity Profiling
- Low Strain Integrity Testing (PIT)
- Pile Driving Monitoring (PDA, SiteLink® and iCAP®)
- GRLWEAP Analysis (Wave Equation)
- SPT Energy Measurements

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Hart Crowser upgraded our corporate headquarters by moving into the 3131 Elliott building on the downtown waterfront. The new office has amazing views of the Olympic Sculpture Park, Seattle skyline, Space Needle, and Elliott Bay. It provides us room to grow and has impressed our clients and staff.

Notable projects in 2015 include:

**Transportation**
- Sea-Tac airport projects
- Northgate Pedestrian Bridge over I-5
- Mukilteo ferry terminal
- Sound Transit Operations & Maintenance Satellite Facility

**Development**
- The Mark tower construction (660-feet-tall, tallest high-rise in Seattle since 1990)
- Rainier Square Tower design (850-feet-tall)
- Crescent Heights’ 4/C tower design (>1,000-feet-tall, which would be the tallest tower in Seattle)
- Lincoln Square Expansion (state record 13,690 cy concrete mat foundation)
- Expedia Campus at Piers 88 and 89
- Costco projects in Japan and Taiwan

**Government**
- Port of Tacoma Pier 4 Reconfiguration
- Port of Seattle Terminal 5 Deepening and Crane Rail Upgrade
- US Navy projects
- King County levee and riverbank stabilization projects

Projects recognized by the industry for their value, sustainability, and engineering excellence include:

**SR 520 Floating Bridge Replacement.** ASCE Local Outstanding Civil Engineering Achievement Award (the top award)

**King Street Station Restoration.** ACEC 2015 National Finalist Gold Engineering Excellence Award

**Seattle Children's Hospital Building Hope.** ACEC 2015 Gold Engineering Excellence Award

**Custom Plywood Mill Site** (Anacortes). ACEC 2015 Gold Engineering Excellence Awards

**Jeff Bruce, Alex Ciccone, and Jordan Thomas** were added to our geotechnical group in Seattle. **Doug Lindquist** (Past-President of this organization) was promoted to Principal.

Hart Crowser is an award-winning firm that provides geotechnical, seismic, hydrogeology, environmental, natural resource, storm water, and disaster resilience services. We work worldwide from offices in Washington, Oregon, Alaska, and Hawaii. Our staff specializes in development of sites with complex geological and environmental issues. While we support projects of all sizes, our work has included some of the highest profile projects in the world. We designed the largest mechanically stabilized earth wall in the western hemisphere, the longest floating bridge in the world, and elements supporting the largest diameter bored tunnel in the world. To learn more about our people and projects visit [www.hartcrowser.com](http://www.hartcrowser.com).
Hayward Baker Incorporated

Hayward Baker Inc. (HBI) is pleased to have continued its tradition again last year in earning ENR’s #1 ranking in the 2014 ENR Top 600 Specialty Contractors list - Foundation category.

Other noteworthy industry awards last year include, Keystone Award from the Associated General Contractors of St. Louis (AGC) in the “Specialty Contractor/Subcontractor Project Under $1 Million” category for performing micropile and compaction grouting work on the St. Louis Central Library, a 100-year-old historic structure located in downtown St. Louis, MO. Longtime Hayward Baker team member and Senior Risk Manager George K. Burke Won the ASCE Geo-Institute’s Wallace Hayward Baker Award.

Closer to home here in the Seattle Metro region, our jet grouting work at the Elliott Bay Seawall Project kept us busy throughout 2015 will continue well into 2016. As HBI continues to grow our group in the Pacific Northwest, we will continue to expand our offerings throughout the western United States and western Canada. The wide range of specialty geotechnical design-build solutions, in particular our core ground improvement technologies of various grouting techniques (cement, jet, compaction, compensation, chemical), vibro ground improvement, wick and earthquake drains, dynamic compaction, and soil mixing have been expanded to include micropiles, rigid inclusions and various temporary shoring systems. For a complete look at all that HBI offers and current HBI news from around the country, please visit our website www.haywardbaker.com.

In HBI Seattle branch office the following Management/Engineering personnel can be contacted for any question/needs that arise: Adam Gerondale, Andrew Malinak, Claude Berard, Mark Koelling, Mark Rohrbach and Mike Blanding.
Holocene Drilling, Inc. offers drilling, sampling, and well installation solutions for Geotechnical, Environmental, and Construction Applications. We operate in the Pacific Northwest providing Sonic, Direct Push, Hollow-Stem Auger, Mud Rotary, Air Rotary, Rock Coring, and Construction Dewatering. Our major area projects include various Port Projects, Sound Transit Projects, the SR99 Bored Tunnel, and Boeing’s 737 Flight Line Upgrades.

Jay Graham, President, manages HDI’s Dewatering Operations. Clay Griffith, Vice President, is HDI’s Managing Partner and manages HDI’s Geotechnical, Environmental and Safety Operations. Jon Root manages HDI’s Rig Scheduling and Direct Push Operations, and Donna Thrall and Roxanne Smith manage HDI’s Administrative Operations. Each HDI Project Manager is committed to superior client service.

In July, Platinum Sponsors, HDI, Landau Associates, GeoEngineers, Tupper-Mack-Wells, LLC, and Cascade Drilling hosted the Take a Swing against Hunger Golf Tournament benefiting Northwest Harvest. As a group, we collected over $22,790 which is enough for 102,000 meals. HDI tests its drilling rig auto-hammers regularly. During this test, sampling rods are attached to strain gauges. Impact and force measurements are taken during sampling to record hammer energy being transferred by each blow. Auto-hammers are then calibrated and certified by a Professional Engineer. Our clients use this data to formulate accurate N-values.

HDI continues work on our drilling contract in support of Boeing’s New Construction and Remediation Activities in Washington and Oregon. Boeing has granted our employees a Permanent ID badge. This allows us to streamline the administration badging process for engineering firms working directly for Boeing.

Our Construction Dewatering services include Vacuum Wellpoint Pump Installation, Deep Well Installation, Development, Operation, and Maintenance. We work closely with area Hydrogeologists which allows us to support General Contractors and their clients with effective dewatering solutions.

We thank you for your continued patronage and trust in our abilities. We are committed to offering you superior drilling solutions. Our goal, as always is to offer you Safety, Innovation, Excellence, and Value on each drilling project we perform.
2015 turned out to be a busier year than we anticipated for HWA, a great problem to have! We hired many new folks to accommodate all the exciting new projects we are working on in 2016. Nicole Kapise and Austin York in our environmental group, Stephen Hadley in our geotech group, and Alexandra Lidnin in our materials testing lab group.

With Bothell’s revitalization still going strong, HWA’s environmental group continues to work side by side with the City on many projects including a Remedial Investigation/Feasibility Study a former dry cleaner site. The City of Bothell (future owner) will use the property for public use and improved infrastructure as part of its downtown revitalization plan.

HWA’s construction inspection services team has been out in the field working hard for our clients. Our construction inspection services has grown just within the last year and we are gearing up for another increase in 2016.

Leading our pavement group, Bryan Hawkins continues to demonstrate the cost and time savings in using the Falling Weight Deflectometer (FWD).

Some of the more recent projects our pavement group has been working on include Madison Street BRT, Snoqualmie Parkway Improvements, East Lake Sammamish, and downtown Bothell.

2015 saw HWA continue our work supporting design and construction of United States Embassies in Mauritania and Turkmenistan and start new projects at the embassy in Kabul, Afghanistan.

The Geotech group led by Donald Huling is steadily growing with the addition of Chris Jackson, Ali Sirjani, and Stephen Hadley. The group continues work on bridge projects including the West Sammamish River Bridge, Bothell Landing Bridge, and the historic Post Alley and Cowen Bridges in downtown Seattle as well as many on call, water and roadway projects.

Our fully accredited in-house soils laboratory continues to stay extremely busy testing soils, asphalt and concrete from both HWA projects as well as for outside clients. We performed testing on soil samples from outside the US in addition to numerous areas around the state of Washington and have many on-call contracts.
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• 140 lb. auto-hammer.

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• Clearance to fit through 37" wide x 80" high openings.
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Kleinfelders Redmond office enjoyed working on a variety of local projects, as well as projects across the US and Canada. Brett Campbell, a recent a graduate from the University of Washington, joined the team in June and hit the ground running. He recently completed explorations for a planned high-rise in Seattle, and has been involved in several infrastructure projects involving retaining wall and deep foundation design. Jason Washburn spent much of the year enjoying a long-term field assignment leading quality control services during reconstruction of the second runway at SeaTac Airport; ask him about watching 747s takeoff from the adjacent runway.

David Cotton continued his legacy of high-rise projects including work on three that will significantly alter the Seattle skyline. Steven Flowers continued working with David on a number of shoring projects and has grown to become a key contributor to Kleinfelders national geo-design practice. He is having a great time designing shoring systems and retaining walls for projects in Seattle and across the US.

Chad Lukkarila continues in his role as a national resource for Kleinfelders and has been working on several large projects including the I-35 Rockslide Assessment and Mitigation in Oklahoma, Ferguson Landslide Rock Shed Design in California, and various transmission line projects in Colorado, Kansas, and Texas. Additionally, Chad completed his term as Chair of the Washington Section of the Association of Environmental and Engineering Geologists (AEG) in August 2015 and is serving on the Student and Young Professionals Committee for AEG.

Marcus Byers continued to support Costco in the US and Canada, and particularly enjoyed working on several projects in Calgary, Alberta, which is conveniently located near Banff. Marcus also enjoyed supporting Kleinfelders energy group on solar and transmission projects in Ontario. While enjoying part-time retirement, Bob Plum continues to provide technical support on a number of projects and mentor the younger staff.

We wish our fellow geoprofessionals a safe, rewarding, and prosperous 2016!
Landau Associates’ geotechnical group was busy in 2015 with public works and private development projects; 2016 is shaping up to be another busy year. Recent promotions include Craig Jordan, PE to Senior Project Engineer and Ben Ford, EIT to Senior Staff EIT. Annabel Warnell joined the Olympia office as a Geotechnical Intern.

In Olympia, Calvin McCaughan, PE worked on a number of transportation improvement projects for Thurston and Mason Counties, Cities of Olympia and Puyallup, a new transfer station for Waste Connections, new office building for Grays Harbor PUD, several new private development projects in downtown Olympia, and municipal water and wastewater improvement projects for Cities of Lacey, Olympia, and Tacoma, Kitsap County, and several small utility districts. Craig Jordan, PE worked extensively with the City of Edgewood during design review and construction on several large development projects. Craig is also working on several transportation and school improvement projects. Lance Levine, PE managed services for several Pierce County projects, the Washington Department of Natural Resources Marine Station, several residential developments, and construction monitoring of several K-12 projects including Evergreen and Grapeview Elementary. Ben Ford, EIT worked on the design and construction of several landslide remediation projects in Aberdeen, and managed the field exploration program for three replacement bridge projects in Grays Harbor County. Annabel Warnell assisted in the geotechnical laboratory and oversaw field exploration programs.

In Edmonds, Steve Wright, PE worked on a number of transportation improvement projects, including Snohomish County’s North Creek Trail and the City of Bellevue’s Mountains to Sound Greenway Trail. Steve is also working on the Port of Everett’s Waterfront Place Central redevelopment project. Senior Engineer Chad McMullen, PE continues to manage construction monitoring services for an aerospace manufacturer’s wing fabrication facility, and spent some time in Kotzebue, Alaska working on a bulkhead repair project. Carlo Evangelisti, PE provided geotechnical services for transportation improvement projects, including three projects for the City of Federal Way. Carlo is also working on data center projects in Quincy, Washington and provides peer review services for the Cities of Edmonds and Poulsbo. Dave Pischer, PE and Kent Wiken, PE continue to provide geotechnical and environmental services to the Ports of Everett and Bellingham related to the cleanup and redevelopment of the Everett Shipyard site and the closure of the Cornwall Avenue Landfill in Bellingham, as well as to the City of Bellevue for development of the Bellevue Airfield Park at the site of the former Eastgate Landfill. Sean Gertz, EIT spent a good portion of 2015 providing construction monitoring services for a wing fabrication facility. Brian Christianson, LEG and Devan Brandt provided field exploration, construction monitoring, and laboratory testing services for a variety of projects, including several aerospace manufacturing facilities and numerous roadway and utility improvement projects.
Malcolm Drilling has been a leader and innovator in the deep foundation industry for more than 50 years. We provide geotechnical construction services including: drilled shafts, excavation support systems, micropiles, cutoff and secant pile walls, chemical grouting, jet grouting, deep soil mixing, Cutter Soil Mixing, underpinning, and dewatering. These services have been applied on complex and technically challenging projects throughout North America. Malcolm Drilling’s ever-growing Dewatering and Ground Improvement Divisions have been instrumental in keeping Malcolm the most sought-after, full service geotechnical contractor.

Based in San Francisco, California, with offices throughout the western United States, Malcolm has expanded to the eastern seaboard with an office in Miami, 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 two of the world’s largest casing oscillator (3.8m OD), a 3.3m OD casing oscillator, and two Bauer BG-50 top-drive drills (the world’s largest top-drive crawler drill).

Some of our notable recent projects completed or acquired include:

- **SR-520 Bridge Replacement**, Seattle, WA - 8’ to 12’ ID Drilled Shafts.
- **Lincoln Square II**, Bellevue, WA – 113,000 SF Soil Nail Shoring, Wellpoint Dewatering.
- **I-90: Hyak to Snowshed** – 178 ea. 3’ to 8’ ID Drilled Shafts, Soil Nails.
- **Ikea - Renton Store Relocation**, Renton, WA – 330,000SF Design/Build Stone Columns.
- **Troy Block** - Seattle, WA - 82,000 SF shoring, 105’ piles, Preserve Historic Facade.
- **Center 425** – Bellevue, WA – 60,000 SF shoring, 3’ ID Drilled Shaft/Building Columns to support office tower constructed using top-down construction technique.

Malcolm continues to advance geotechnical construction through active participation in ADSC, DFI, Geo Institute and ASCE. For assistance with conceptual design and budgeting, please contact John Kvinsland ([jkvinsland@malcolmdrilling.com](mailto:jkvinsland@malcolmdrilling.com)), for Ground Improvement contact Rick Hanke ([rhanke@malcolmdrilling.com](mailto:rhanke@malcolmdrilling.com)), for Construction Dewatering contact Matt Kennedy ([mkennedy@malcolmdrilling.com](mailto:mkennedy@malcolmdrilling.com)). For a complete list of our services and contact details please visit our website ([www.malcolmdrilling.com](http://www.malcolmdrilling.com)).
2015 was a year of significant growth for McMillen Jacobs Associates, particularly in the Pacific Northwest, where we won as prime on several large projects, including Seattle Public Utilities’ (SPU) Ship Canal Water Quality Project - Tunnel Storage Final Design and Broodstock Collection Facility Replacement Options Analysis and Design, Metro Vancouver’s Second Narrows Water Tunnel and BC Hydro’s Salmon River Canal Refurbishment & Fish Passage Improvement Engineering Design Services projects. We are also providing services on SPU’s Water System Seismic Vulnerability Study and Translink’s Broadway SkyTrain Extension as a key subconsultant.

Ongoing work in Seattle continues to move successfully forward. Sound Transit’s University Link Light Rail is now in final testing and is anticipated to open for service in the Spring of 2016. The tunnel boring machines on Sound Transit’s Northgate Link Extension are on either side of the U District Station and are anticipated to finish their final reach from the U District Station to the University of Washington Station later in the year. In addition, the three stations on the alignment: U-District Station, Roosevelt Station, and Northgate Station, are continuing to move forward in the GCCM delivery process. Contracts for construction will be finalized later this year and into 2017.

The Railroad Services Group worked on numerous railroad siding extensions for capacity improvements for BNSF and UPRR as well as providing design services on the Washington State Parks and Recreation’s Tunnels 46 & 47 Repairs project. Our Construction Management (CM) Division kicked off Sound Transit’s East Link Bellevue Segment Construction Management Consultant Services work, as well as continuing to provide CM services to the Alaskan Way Viaduct Replacement Program.

The 30% design of Seattle Public Utilities 3rd Avenue West Tunnel Water Main Replacement will take place in February, and the firm is delivering services under several work order authorizations for Seattle City Light’s Multidisciplinary Engineering Services for Power Generation projects.

Key hires in the Seattle office in 2015 include Henry Spieker, Principal – Claims; Kandace Zimmerman, Senior Project Consultant – Claims; Michael Lach, Senior Project Engineer; Jim Moore, Senior Staff CAD; James Grissom, Senior Project Consultant; Lisa Dunham, Staff Engineer; Dale Moore, Project Geologist; Robert Long, Staff Engineer; and Sharon Nagel, Senior Marketing Coordinator. The Vancouver office has grown as well with Doug Grimes, Associate, now leading the office, and the additions of Michelle van der Pouw Kraan, Senior Staff Engineer; Jonathon King, Senior Staff Engineer, and Frederic Marquis, Staff Engineer.
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Geopier’s goal is to bring you advanced, innovative ground improvement technology in a way that is easy to use every day. Geopier Rammed Aggregate Pier® and rigid inclusion products enable you to:

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- Replace deep foundations
- Control settlement
- Increase soil bearing capacities
Pacific Pile & Marine

Pacific Pile & Marine, LP is a heavy civil and marine contractor specializing in over-water construction and foundations systems. Our construction portfolio includes various driven and drilled pile foundations including drilled sockets, rock anchors, augercast piles, sheet pile, access trestles, and shoring along with specialty services such as emergency response; heavy lift; and environmental remediation.

Our team offers design-build capabilities with a host of proven experience and a safety record that is one of the best in the industry. Our team excels at logistically demanding projects and are always looking for ways to bring innovative and cost effective solutions to our Clients.

Pacific Pile & Marine operates throughout the Pacific Northwest including WA, ID, OR, MT, CA, and BC. This past year, our team worked on some of the most recognizable transportation and infrastructure improvement projects in the Puget Sound Region including the SR 520 Montlake to Evergreen Pt. Bridge West Approach Bridge North, the Mukilteo Ferry Terminal Phase 1 Tank Farm Demolition and Dredging, the Elliott Bay Seawall Replacement Project, and Ivar's Pier 54 Reconstruction, among many others. Based out of WA, we are excited to be so involved in the revitalization of this region's waterfront.

PPM is an industry leader in foundation, most notably driven pile and drilled socket installation, having pioneered the longest known rock socket in a marine environment and has been providing design and construction services for the public and private sectors in transportation, infrastructure, waterfront, wastewater, energy, and military facilities for nearly a decade.

Our crews are highly trained and our safety programs consistently exceed industry standards. We are proud to say our crews have maintained an EMR safety rating of 0.60 for the past 5 years. We're grateful for the past opportunities we've been given to demonstrate our abilities and look forward to advancing our services on future projects to share the Pacific Pile & Marine difference.

We invite you to visit our website: www.pacificpile.com or contact us at 206.331.3873 for more information.
For the second year running, Robinson Noble was **awarded a Premier Award for Client Satisfaction**, presented by PSMJ Resources, Inc. We were one of only 19 firms nationwide recognized with this award given to top environmental/engineering companies based on client surveys. In those surveys, more than 85% of public-sector clients rated Robinson Noble as exceeding expectations (or better) in quality, accuracy, helpfulness, responsiveness, and scope/fees. When asked how likely they would recommend Robinson Noble to a peer, on a scale of 0 to 10, our public-sector clients answered with an average of 9.5.

Robinson Noble continues to offer geotechnical, environmental, and hydrogeologic services, providing balanced geosciences resources to our clients. 2015 brought the opportunity for us to further integrate these disciplines, with an increasing number of projects utilizing support from two or more divisions.

Robinson Noble’s own, Mike Krautkramer, was featured in the July 2015 edition of National Driller magazine. In an article titled *Designing a Dialogue, Water Well Construction Starts with Customer Communication*, author Valerie King interviewed Mike about how to properly design and construct a water well for a client.

This year’s extraordinary drought conditions resulted in a number of interesting problems to solve. Among them, we assisted the City of Forks with a plan to expand their groundwater sources, something that wasn’t considered likely in a place that receives over 100 inches of precipitation in an average year. We also worked with the Water Supply Forum (comprised of major cities and purveyors in the King/Pierce/Snohomish County area) to assess how vulnerable the regional groundwater supplies are to extended drought conditions or to the expected effects of climate change (answer: not very).

We welcomed three new employees this year. Natasha Garland-Clark and Rikki Bogue work out of our Tacoma office. Natasha is a staff geologist and is a welcome addition across all of our company’s disciplines. Rikki is our new administrative assistant and warmly greets all who come through our Tacoma office door. John Anderson is our Woodinville office’s newest staff engineer, whose construction background has already been a benefit to several geotechnical field projects.

Robinson Noble would like to wish everyone a Happy New Year and a prosperous 2016.
SPU Geotechnical Engineering continues doing work at a busy pace for various departments within the City of Seattle. The group is led by Geotechnical Engineering Supervisor, Juan Carlos Ramírez, P.E. Our staff includes Senior Geotechnical Engineers Megan Higgins, P.E. and Sean Caraway, P.E., Senior Geologist Aaron Clark, L.G., and Associate Geotechnical Engineer Hilja Welsh. We are excited to have been joined in early 2015 by Keishi Hashimoto, who was hired from a very competitive field to fill a vacant Associate Geologist position.

The SPU Geotechnical Engineering Group has continued involvement in high profile SPU projects and programs, such as the North and South Transfer Stations, a large slope stabilization study at the Tolt Watershed and the Combined Sewer Overflow (CSO) Reduction Program. During 2015, we also worked on various phases of a range of facility improvement projects for Seattle City Light, Seattle Parks and Recreation and Seattle Department of Transportation. We will continue to provide geotechnical support on many of these City projects, as well as take on new ones during the coming year.
Like the other geotechnical consulting firms in the Puget Sound Region, 2015 was a very good year for Terracon. We celebrated 50 years as a provider of geotechnical, environmental, and materials testing services. Our geotechnical staff now numbers 14 with the addition of Tori Hesedahl. Tristan Anderson and Sam Probert earned their PE licenses in 2015, bringing the total number of licensed engineers and geologists in the Mountlake Terrace Geotechnical Department to ten.

Richard Luark’s shoring design group attracted nearly 20 projects in 2015. Tower 12 at Second and Virginia, a 33-story hi-rise with a 45-foot deep excavation, is scheduled for occupancy later this year.

Dennis Stettler was immersed in local transportation and infrastructure projects last year. King County’s Kent-Auburn Conveyance system should begin construction in 2016.

Dave Baska continued to provide geotechnical earthquake engineering services locally, nationally, and oversees. Dave was also promoted to Affiliate Associate Professor at the University of Washington.

Jim Schmidt traveled extensively last year in his role as Terracon’s Director of Transportation and Infrastructure. Locally, he helped us to be short-listed for WSDOT’s I-405 – SR 167 Interchange Direct Connector Project. Award of this design-build project is scheduled for 2016.

Rob Sargent completed his role as Terracon’s lead engineer on the Boulder City Bypass project in Las Vegas. Rob will now turn his attention to the USA Parkway design-build project in Reno.

Ryan Scheffler completed his third year of managing our on-call work for the Cities of Snoqualmie and North Bend. His MSE wall design practice continues to grow and included a 10,000 square foot wall in Kirkland.

Brett O’Brien, Sergey Lukin, Curt Thompson, and Scott Dobner provided the all-important role of field engineer/geologist on our local design and construction projects.
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