

Inland Geological Society

September 2017

Newsletter of the Inland Geological Society

Volume 33 No. 9

Next Meeting:
Thursday
September 7th

Time:
Social: 6:00pm
Dinner: 7:00pm
Lecture: 7:45pm

Location:
LSA Associates
1500 Iowa Ave
Suite 200
Riverside, CA
92507
(Map on Pg. 6)

Coming to
Dinner?
Please RSVP
by Tuesday 9/5
(951) 232-0430
rkolenko90@gmail.com

In this issue:

- September Speaker: Aaron Bishop, P.E., Western Ground Improvement 1-2
- Announcements 2-4
- Upcoming Events/IGS Meeting Schedule 5
- Current IGS Officers and Meeting Location 6

September Speaker:

Aaron Bishop, P.E.
Project Engineer, Western Ground Improvement, Irvine, California

“Mitigating the Effects of Liquefaction with Rammed Aggregate Pier™ Elements”

Abstract:

Liquefaction occurs when soil particles rapidly contract causing the soil pore water pressure to increase sufficiently to reduce the effective stress in a soil mass to near zero. Because the soil particles no longer have contact with each other, the soil has little shear strength and subsequently behaves as a dense liquid. This behavior is typically considered to occur in saturated, loose sands and silts when subject to seismic shaking. As excess pore water pressure dissipates, the void ratio of the soils becomes lower than it was prior to the seismic shaking, resulting in liquefaction-induced settlement.

Ground displacements resulting from soil liquefaction and dynamic densification can cause severe structural damage during and after an earthquake. Geotechnical construction methods to mitigate these potential ground displacements include mass excavation and replacement with engineered fill, deep foundations, and ground improvement.

Rammed Aggregate Pier™ (RAP) is an effective ground improvement solution for mitigating seismic settlement. Results from full scale testing on RAP-treated soil suggest densification may be considered to be the primary liquefaction mitigation mechanism in soils with a soil behavior type index, I_c , < 1.8 , and that composite dynamic stiffness of the RAP-treated soil likely dominates the liquefaction resistance mechanism in soils with $I_c > 1.8$.

(continued on p. 2)

(continued from p. 1)

Biography:

Western Ground Improvement (WGI) is a design-build engineering firm based in Irvine, California, serving California, Arizona, Nevada, and New Mexico. We specialize in providing Geopier ground improvement solutions to support settlement sensitive structures. Through continual research and development, Geopier has expanded its system capabilities to meet many ground improvement challenges. The systems have become preferred alternatives to massive over-excavation and replacement or deep foundations, including driven piles, drilled shafts, or augered cast-in-place piles. Thousands of structures around the world are currently supported by Geopier technologies. This proven experience ensures high levels of performance and reliability while providing value compared to traditional systems.

Release of Preliminary Maps of Seismic Hazard Zones

August 17, 2017

Ten proposed new and revised Preliminary Seismic Hazard Zone maps have been released as of August 17, 2017. Areas covered are within Contra Costa, Riverside, and San Mateo counties and affect the cities of Antioch, Belmont, Brentwood, Burlingame, Foster City, Hillsborough, Menlo Park, Murrieta, Oakley, Redwood City, San Carlos, San Mateo, Temecula and Wildomar. Following a review period that ends November 17, 2017, these maps will be superseded by Official Revised Maps on or about February 17, 2018, at which time the zoning becomes effective. The Preliminary Seismic Hazard Zone maps and their associated Evaluation Reports can be viewed or downloaded at <http://www.conservation.ca.gov/cgs/shzp/Pages/PreliminarySHZMaps.aspx>.

**For Those Working on
Residential/Commercial Development
in Los Angeles County**

The Geotechnical and Materials Engineering Division (GMED) of the County of Los Angeles Department of Public Works is now accepting Building and Grading permit application document submittals through a web application at the following URL: <https://dpw.lacounty.gov/apps/esubmissions/gme/default.aspx>. Permit applications must be filed with Building and Safety before documents can be submitted to GMED because a plan check application number must be provided on the upload screen. First-time users are required to create a site login, which facilitates future submittals and provides contact information should it be determined that additional information is needed to process the submittal. Documents submitted through the web portal include consultant's reports, building/grading plans, permit applications, fee receipts, etc., and must be in Adobe PDF format. Submittal of hard copy (paper) documents to GMED is no longer required. The web application will not accept plan check application numbers for applications filed through Land Development Division and some Contract Cities.

For information on submitting these projects, or for any other questions, please contact GMED at GMED Submittals@dpw.lacounty.gov, or (626) 458-4923.

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**ANNOUNCEMENT OF PRELIMINARY REVIEW MAPS OF PROPOSED NEW
AND REVISED EARTHQUAKE FAULT ZONES
JULY 13, 2017**

Preliminary Review Maps of proposed new and revised Alquist-Priolo Earthquake Fault Zones were released to the Cities of Beverly Hills, Culver City, Los Angeles, Napa, Santa Monica, Vallejo, West Hollywood, and the Counties of Los Angeles and Napa by the California Geological Survey (CGS) on July 13, 2017. These maps are released under the authority of the Alquist-Priolo Earthquake Fault Zoning (AP) Act that was passed following the 1971 San Fernando earthquake. The AP Act is a state law designed to reduce the hazard from surface fault rupture during an earthquake.

Earthquake Fault Zones are regulatory zones that encompass surface traces of active faults that have a potential for future surface fault rupture. The index maps below (Figure 1) shows the general location of maps delineating the proposed Earthquake Fault Zones within the affected counties.

Review Comment Period

The July 13, 2017 release date begins a 90-day public comment period designed to provide the opportunity for the State Mining and Geology Board to receive technical review comments that may have a bearing on the proposed Earthquake Fault Zone maps. Comments should be sent to the State Mining and Geology Board before October 11, 2017. Comments should be addressed to:

Jeffrey Schmidt, Executive Officer
State Mining and Geology Board
801 K Street, MS 20-15
Sacramento, CA 95814
(916) 322-1082
smgb@conservation.ca.gov

The State Mining and Geology Board will hold a public hearing near the end of the 90-day review period. For more information on the date and location of the public hearing, contact the State Mining and Geology Board.

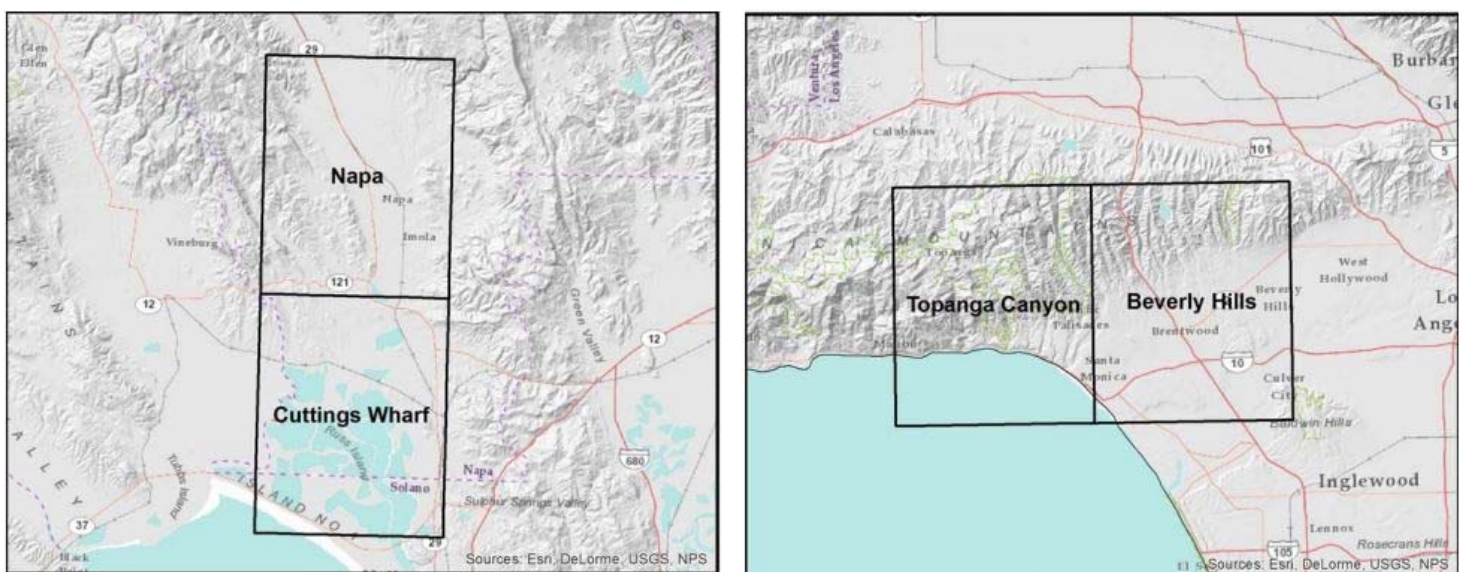


Figure 1. Index of Preliminary Review Maps of proposed new (Napa and Topanga Canyon) and revised (Cuttings Wharf and Beverly Hills) Earthquake Fault Zones issued July 13, 2017.

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The California Geological Survey (CGS) is pleased to announce the release of earthquake regulatory zone maps as a web services product that can be incorporated into geographic information systems (GIS). Access to these maps via the internet provides an alternative to downloading individual 7.5-minute quadrangle maps and an automated way to maintain the most up-to-date versions on individual systems. The web-based earthquake hazard zone maps are now available at this URL: https://spatialservices.conservation.ca.gov/arcgis/rest/services/CGS_Earthquake_Hazard_Zones and include:

- Alquist-Priolo Earthquake Fault Zones
- Alquist-Priolo Earthquake Fault Zone Fault Traces
- Seismic Hazard Zones for Earthquake-triggered Landslides
- Seismic Hazard Zones for Liquefaction
- Seismic Hazard Zones for Overlapping Areas of Landslide and Liquefaction
- Areas not evaluated for Landslide and Liquefaction Hazards.

Attributes included with these data provide links to reports on how the maps were prepared and to the PDF cartographic versions. Metadata pages are available at:

- https://maps.conservation.ca.gov/cgs/metadata/SHP_Fault_Zones.html
- https://maps.conservation.ca.gov/cgs/metadata/SHP_Fault_Traces.html
- https://maps.conservation.ca.gov/cgs/metadata/SHP_Landslide_Zones.html
- https://maps.conservation.ca.gov/cgs/metadata/SHP_Liquefaction_Zones.html
- https://maps.conservation.ca.gov/cgs/metadata/SHP_LQLS_Overlap_Zone.html
- https://maps.conservation.ca.gov/cgs/metadata/SHP_Unevaluated.html

Access to the 7.5-minute quadrangle tile data is still available through the CGS Information Warehouse (<http://maps.conservation.ca.gov/cgs/informationwarehouse/>). These data include GIS Shapefiles and metadata, GeoPDF cartographic maps, as well as associated reports.

Also to be released in the next few weeks is a GeoApp that will include these zone maps and incorporates statewide parcel data, which will allow users to determine very quickly whether any particular property is included within these regulatory zones.

If you have any questions or comments on these new web services, please contact Tim McCrink, CGS Seismic Hazards Program Manager, at (916) 324-2549 or Tim.McCrink@Conservation.ca.gov.

Invitation to Submit Photos

Do you have an interesting photo to share?

IGS would like to begin publishing photographs submitted by members of **geologic localities or items of interest**. Subjects may include field site geology, field trip localities, mineral specimens, water issues, etc. Be creative! Photos must be your own work product. Submit your exemplary photo with your name, the approximate date and location, and a short (paragraph) description of the photo to any IGS board member for consideration for publication in an upcoming newsletter.

Links to Publications

Each month, Greg Johnson brings published articles to the IGS meeting which may be of interest to members. Selected articles can be accessed in electronic form at <ftp://dpwftp.co.la.ca.us/pub/GMED/geology/Geologic%20Articles/>.

Thanks, Greg, for making these articles available!

Upcoming Meetings/Events

Inland Geological Society

The Inland Geological Society typically meets the first Wednesday or Thursday of each month. Our October meeting will be held on Wednesday, October 4th. For more information, visit our website at www.inlandgeo.org.

South Coast Geological Society

 Monthly dinner meetings are typically the 1st Monday of the month at The Hilton DoubleTree Hotel, 7 Hutton Centre Drive, Santa Ana. The September meeting will be held on Monday, September 11th, due to the Labor Day holiday. Thomas L. Davis, PG, will present his talk titled *"Fault displacement hazards at Aliso Canyon and Honor Rancho natural gas storage fields, southern California."* For more information, visit the association website at www.southcoastgeo.org.

AEG—Southern California Section



The next meeting of the AEG—Southern California Section has not been announced yet. For more information, visit the association website at www.aegsc.org.

AEG—Inland Empire Chapter



Monthly dinner meetings are typically the third Wednesday of the month at Pinnacle Peak Steakhouse, 2533 S. La Cadena Drive, Colton. The AEG—Inland Empire Chapter is on summer sabbatical through September. For more information, visit the association website at www.aegsc.org/chapters/inlandempire.

San Diego Association of Geologists



The next SDAG meeting will be held on Wednesday, September 20th. The speaker and topic have not been announced yet. For more information, visit the association website at www.sandiegogeologists.org.

Los Angeles Basin Geological Society



Monthly lunch meetings are typically the 4th Thursday of the month from 11:30 am to 1:00 pm at the Willow Street Conference Center, 4101 E. Willow Street, Long Beach. The next meeting of the Los Angeles Basin Geology Society has not been announced yet. For more information, visit the association website at www.labgs.org.

AEG—60th Annual Meeting



The AEG 60th Annual Meeting is scheduled for September 10-16, 2017, at the Antlers Hotel, Colorado Springs, Colorado. For more information and updates, go to www.AEGAnnualMeeting.org.

Geological Society of America (GSA) Annual Meeting

The GSA Annual Meeting, scheduled for October 22-25, 2017, at the Washington State Convention Center, Seattle, Washington. For more information and updates, go to www.geosociety.org/AnnualMeeting.

Rock & Gem Shows—various locations

Various rock and mineral shows will be held throughout southern California. To find one near you, visit www.rockngem.com, then select the Show Dates tab.

IGS MEETING LOCATION:

**LSA Associates, Inc.
1500 Iowa Ave, Suite 200
Riverside, CA 92507**

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