



## Association of Environmental & Engineering Geologists San Francisco Section

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ANNOUNCING THE AEG SAN FRANCISCO SECTION  
AND SAN FRANCISCO GEO-INSTITUTE  
NOVEMBER 2012 JOINT MEETING

### THE PRESIDIO PARKWAY, PHASE 1 – DOYLE DRIVE REPLACEMENT AND DEMOLITION

Presenter: **Anna Sojourner, MS, CEG**, of Caltrans District 4



#### MEETING DETAILS

##### Restaurant

Scott's Seafood  
Jack London Square  
2 Broadway, Oakland

[Map](#)

##### Date and Time

Thursday, November 8<sup>th</sup>, 2012  
6:00 pm—Social Hour and Sign-in  
7:00 pm—Dinner  
8:00 pm—Presentation

**Cost:** \$45 Members & Members' spouses; \$50 Non-Members, \$20 for Students

**Reservations\*:** To RSVP, please fill out the online form at <http://goo.gl/dJY83> by **12 PM, Tuesday, Nov 6, 2012**

**From San Francisco:** Take the Bay Bridge headed toward Oakland, merge onto I-880 South toward Alameda/San Jose, exit Broadway/Alameda, right on 5<sup>th</sup> Street, right on Broadway, then four blocks to Jack London Square.

**From the South:** Take I-880 North toward Oakland, exit at Broadway, turn left on Broadway, then four blocks to Jack London Square.

**From the East:** Take Highway 24 to 980 (downtown Oakland), exit 11th/12th Street, go straight on Brush Street, left on 5th Street, right on Broadway, then four blocks to Jack London Square.

**Parking:** Jack London Market Garage (Harrison & 2<sup>nd</sup>), Broadway Parking, Washington Street Garage (101 Washington Street) details & rates: <http://www.jacklondonsquare.com/parking.html>

\*Please RSVP in advance. Walk-ins are welcome, but not guaranteed. No shows will be charged.

**See next pages for abstract and speaker biography.**

## Abstract

The Presidio Parkway, also known as Doyle Drive, is located in the 200 year-old Presidio, a National Park and a National Historic Landmark District, in San Francisco. Winding 1.5 miles along the northern edge of San Francisco, the project area extends from the Golden Gate Bridge Toll Plaza on the west to Broderick Street on the east. The roadway is the primary highway and transit linkage through San Francisco between counties to the south and the north, and provides access to historic and cultural landmarks, including Crissy Field in the Golden Gate National Recreation Area, the Presidio, the Golden Gate Bridge, and the Palace of Fine Arts.

Originally constructed in 1936, Doyle Drive needed design, seismic and traffic safety improvements. The project faced several significant challenges: highly variable and poor geologic conditions in an active seismic setting, preserving the natural and historical Presidio resources, providing extensive public outreach and inter-agency coordination for a large group of stakeholders (i.e. citizens' groups and other public agencies) and removing and replacing the existing facility while maintaining traffic during construction.

This talk will discuss design and construction challenges for Phase 1 of the project, the components of which will eventually form the southbound Presidio Parkway. Traffic was switched on to the completed Phase 1 roadway in late April 2012 and Phase 2, the northbound Presidio Parkway, commenced. Phase 2 will be constructed by a Public-Private Partnership.

The main project components of Phase 1 are the

- Cement Deep Soil Mixing (CDSM)/Cast-in-Drilled-Hole (CIDH) Test Project,
- Temporary detour road,
- Retaining Wall No. 8,
- Southbound Battery Tunnel,
- Southbound Presidio Viaduct,
- Weekend shut down for demolition and traffic switch.

The CDSM/CIDH Test Project was conducted in the detour road area before the temporary detour road was constructed. The detour road serves traffic through the eastern portion of the Phase 1 roadway until the proposed permanent roadways and structures are constructed under the Phase 2 contract. Retaining Wall No. 8 is located between the proposed southbound Main Post Tunnel and the southbound Battery Tunnel. This tangent pile wall extends about 1,200 feet in length and varies in height from about 5 feet to more than 45 feet. The Southbound Battery Tunnel is a 1,036 foot-long, 66 foot-wide cut-and-cover tunnel, which required excavations up to 48 feet deep in loosely consolidated, saturated sand. The Southbound Presidio Viaduct is 1,400 feet long and 80 feet high and connects the Golden Gate Bridge toll plaza with the Southbound Battery Tunnel. The traffic switch in late April 2012, to date the largest demolition job in the United States, was completed within 57 hours.

The many innovative ideas utilized in this project include: an integrated team of Caltrans drilling crews and local drilling subcontractors used for the subsurface exploration, a foundation contractor feedback meeting held for the Southbound Presidio Viaduct Bridge, a Cement Deep Soil Mixing and Cast in Drilled Hole Test Project, using separate excavation pay items for the different ground conditions, a soldier pile tangent beam retaining wall with steeply inclined heavy duty tiebacks used to avoid instability to the adjacent National Cemetery, and a lightweight fill combined with a retaining wall used for a temporary detour over soft soils in order to maintain traffic during the 3 to 4 year construction period of Phase 2.

## **Speaker Biography**

Anna Sojourner, MS, CEG, has worked as an Engineering Geologist in the Caltrans District 4 (Bay Area) Office of Geotechnical Design for 11 years. She was the site geologist for the Phase 1 construction of the Presidio Parkway in 2010 and 2011. Additionally, she was a site geologist for the Devil's Slide tunnels and the Caldecott Tunnel Fourth Bore. She has performed preliminary site assessments and geologic hazard evaluations and provided consultant oversight and construction oversight for a variety of large highway infrastructure projects, including the 80/680/12 Interchange and Highway 12 Jameson Canyon (Solano County), the Bay Bridge West Approach (San Francisco), Highway 116 Stage Gulch Road (Sonoma County) and Highway 1 at Pescadero (San Mateo County). Her work also involves landslide and rockfall characterization and remediation, and work in coastal armoring and erosion. Formerly employed at Woodward-Clyde Federal Services and William Lettis and Associates, she obtained her BS from San Francisco State University in 1996, and attended field camp with Idaho State University in the Challis National Forest, near Mackay, Idaho. Her Master's thesis, completed at San José State University in 2000, was paleoseismic trenching and fluvial terrace mapping on the San Gregorio fault near Pescadero.

**Thank you for the RSVP! See you on Thursday, November 8<sup>th</sup>, 2012**