



Association of Environmental & Engineering Geologists San Francisco Section

ANNOUNCING THE AEG SAN FRANCISCO SECTION
JANUARY 2012 MEETING

CALDECOTT FOURTH BORE PROJECT: BUILDING UPON 80 YEARS OF TUNNEL ENGINEERING Chris Ridsen, Caltrans

MEETING DETAILS

Restaurant

Sinbad's
Pier 2 Embarcadero Street
San Francisco, CA

[Map](#)

Date and Time

Tuesday, January 10th, 2012
6:00 pm—Social Hour and Sign-in
7:00 pm—Dinner
8:00 pm—Presentation

Cost: \$40 Members; \$50 Non-Members, \$20 for Students

Menu

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|---------------------|--------------------|
| 🍷 Salmon Florentine | 🍷 Chicken Picatta |
| 🍷 Snapper | 🍷 Shrimp Louis |
| 🍷 London Broil | 🍷 Vegetarian Pasta |

Reservations*: To RSVP, please fill out the online form at <http://goo.gl/dJY83> (**NEW!!**) by **12 PM, Friday, January 6th**

Driving Directions: From the Bay Bridge, take the Fremont Street Exit and the Folsom Street Ramp. Go left (east) on Folsom Street, then left (north) onto the Embarcadero (Herb Caen Way). The driveway for Sinbad's is on the right, south of the historic Ferry Building. Please watch out for the pedestrians and cyclists when turning into the driveway. Thank you.

BART Directions: Exit the Embarcadero Station; walk up Market Street toward the Ferry Building (less than ½ a mile toward the Bay and to the east). Cross Embarcadero and Sinbad's is located next to the Alameda ferry pier on the south side the historic Ferry Building.

Parking: \$4 valet parking is available or there are meters located on nearby side streets.

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

See next page for abstract and speaker biography.

**Caldecott Fourth Bore Project:
Building Upon 80 Years of Tunnel Engineering
Chris Riden, Caltrans**

Speaker Biography

Chris Riden has been an Engineering Geologist at Caltrans for over 11 years. He received a BS in Geology from California State University East Bay (Hayward). His experience includes numerous landslide repairs, structure foundation investigations and designs, geologic hazard assessments, and the geologic mapping of the only two highway tunnel projects to be constructed in the Bay Area for the last 50 years: Devil's Slide Tunnels and the Caldecott Fourth Bore. These two rare opportunities to participate in the design and construction of highway tunnels have allowed him to gain insight into the application of the New Austrian Tunneling Method.

Abstract

Much may have changed over the last 80 years in design and construction, but there remains one constant: geology. The Caldecott Fourth Bore, a 3,400-foot long, two-lane tunnel along a heavily traveled section of State Route 24 between Alameda and Contra Costa Counties, is currently under construction. This fourth tunnel is being built to the north of the original twin bores, constructed in 1937, and the third bore, constructed in 1964, to provide a total of eight lanes - four in each direction. The primary benefit of the project is to relieve traffic congestion in the non-peak direction, and to eliminate the need for Caltrans maintenance crews to switch the direction of the second bore.

The construction of the Fourth Bore highlights the advances made in geotechnical investigations, geotechnical and tunnel design, and tunnel construction. As all four bores are roughly perpendicular to the strike of the encompassing rock units, similar geological conditions have been encountered in all four bores, with some minor along-strike variation.

The Fourth Bore is being excavated using the New Austrian Tunneling Method (NATM). It has been designed and constructed to take advantage of the surrounding rock mass, as opposed to resisting it.

Caltrans Engineering Geologist Chris Riden will cover the fascinating geology of the East Bay Hills, and also touch upon paleontological aspects of the tunneling project.

Thank you for the RSVP! See you on **Tuesday, January 10th, 2012**