

Proposed General Volume Outline for APPLIED GEOLOGY IN CALIFORNIA  
**Draft X.2**

December 6, 2013

**General note:** The volume is focused on California and its continental borderlands. Abstracts and lead author information and a general description of the paper should be sent to Mr. Anderson by Jan. 15, 2014 at [senseirockman1@hotmail.com](mailto:senseirockman1@hotmail.com). You can call him at (916) 212-4761.

**TITLE:**

**APPLIED GEOLOGY IN CALIFORNIA**

**EDITED BY: ROBERT ANDERSON and HORACIO FERRIZ**

**Why develop the volume in the first place?**

**Answer:** To cover some of the gaps in practice and updates since the volumes were published in 1992 and 2001. At this time a separate group is preparing a volume on hydrogeology.

The hard bound, full color volume will have an accompanying CD to hold graphics, spreadsheets, and other materials not suitable to be presented in the main text. The volume will be also available through the Star Publishing Company website.

**ACKNOWLEDGEMENTS**

**PREFACE**

**FOREWARD**

**TABLE OF CONTENTS**

**CHAPTER 1: CHANGES IN DATA ACQUISITION AND MAPPING**

Use of GPS and GIS in Mapping

Modeling in Geological and Geophysical Mapping

Use of LIDAR, INSAR, UAVSAR and Airborne Geophysical Techniques in Mapping and Problem Solving-

Ground Based Geophysical Techniques in Mapping-

Data Mining-

Use of Google Earth and Similar Programs-

Development of Tsunami Inundation Maps for Coastal California-

GIS and Imagery Applications During and/or After Natural Disasters-

Use of the Center for Active Visualization in Earth Sciences (Keck CAVE in Geological Problem Solving) –

## **CHAPTER 2: SCHOOLS, HOSPITALS AND INFRASTRUCTURE**

Residential Property Siting and Development-

Commercial Property Siting and Development-

Siting of Public Schools and Hospitals-

Siting and Development of Infrastructure-California Aqueduct-

Siting of Solar Thermal Power Stations, Wind Farms and Energy Storage Facilities-

Light and Heavy Rail-

Ports and Harbors-

## **CHAPTER 3: FAULTING AND SEISMICITY**

An Update of Fault Data Base for California-

Update on Continental Border Land Faulting South of San Pedro to the California/Mexico Border-

An Overview of Faulting and Seismicity in the Lake Tahoe Basin-

Detection of Faults Using Geophysical Methods-

Alquist-Priolo Act Update-

An Overview of Earthquake Early Warning Efforts in California-

Hydraulic Fracturing (Fracking)-

Induced Seismicity from Fluid Injection-

Injection of Water to Prevent Subsidence-

#### **CHAPTER 4: SEISMIC HAZARD and RISK-**

Tailings and Slimes Dams Static and Dynamic Stability Analysis-

Levee Assessment-

Seismic Hazard Assessment for Dams by DSOD-

Liquefaction Triggering Update-

An Introduction to the Time Independent Uniform California Earthquake Rupture Forecast -

An Introduction to Logic Trees and Issues in Quantification of Uncertainty-

Geologic Hazard Assessment in Loss Estimation and Risk Assessment-

An Introduction to Seismic Risk Assessment and Analysis-

Hazards United States- Multi-Hazards (HAZUS Multi-Hazard) Loss Modeling-

#### **CHAPTER 5: UNMANNED AERIAL VEHICLE (UAV) AND REMOTE OPERATING VEHICLE (ROV) APPLICATIONS in GEOLOGIC OR GEOPHYSICAL PROJECTS**

General Mapping and Reconnaissance Using Remotely Operating Vehicles-

Use of Unmanned Aerial Vehicle Synthetic Aerial Radar (UAVSAR)-

Use of UAVs for Reconnaissance after Fires, Storms and Earthquakes-

Shallow Low Energy Seismic Reflection and Bathymetric Applications-

Bathymetric Mapping for Rockfish Habitat Identification and Mapping-

## **Chapter 6: MISCELLANEOUS**

Detection of Tunnels and Voids Using Geophysical Methods-

Geophysical Uses by Homeland Security-

Landslides Detection and Assessment-

Mudslides Potential Assessment after Fires-

Seismic and Tsunami Hazard Issues and Agribusiness-

Drought and the Proposed Peripheral Tunnels-

Offsite Storage of Water-

Global Climate Change and Sea Level Rise Issues-

### **PAPER GUIDELINES:**

Follow AEG Publication guidelines