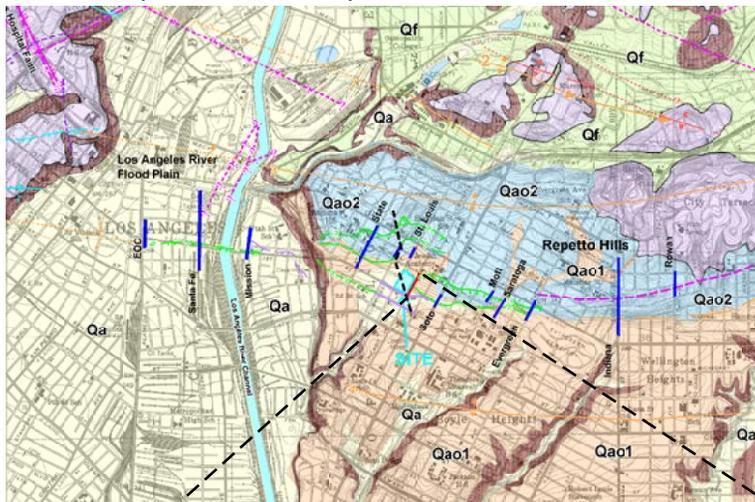




# GEOLOGIC INVESTIGATIONS OF CO-SEISMIC FOLDING DEFORMATION on the Coyote Pass And MacArthur Park Escarpments for Police and Emergency Operations Center Facilities, City of Los Angeles, California

## PROJECT DESCRIPTION

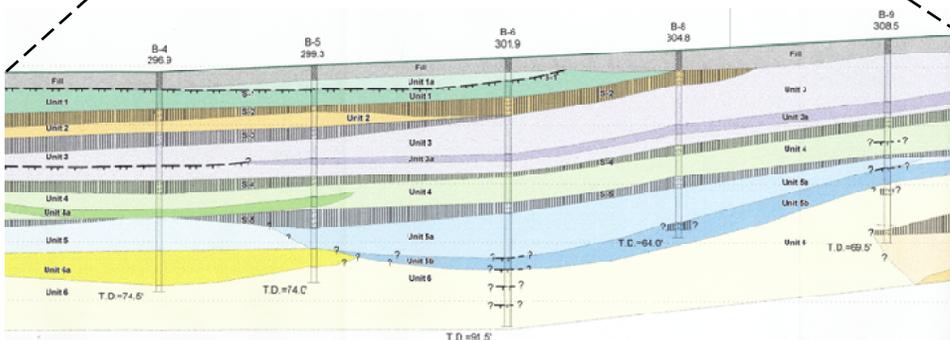
*Earth Consultants International* conducted a fault and fold deformation screening study of the MacArthur Park and Coyote Pass escarpments in downtown Los Angeles to assist the City with the development of three critical facilities, including two police stations and a new Emergency Operations Center (EOC). The escarpments are structural folds that have developed as a result of movement on a blind thrust fault that runs beneath the City. The purpose of the study was to assess whether the folds occur beneath the project sites and, if they do, to determine whether earthquake-producing deformation associated with the folding would be potentially threatening to the structural stability of the planned facilities. The MacArthur Park escarpment trends westward from the Los Angeles River floodplain, subparallel to Sixth Street, and the Coyote Pass escarpment extends eastward beneath the Los Angeles River floodplain and the Repetto Hills.



Geomorphic map of downtown Los Angeles, showing location of cross-section shown below. Note that the layers are tilted.



Drilling in the street is always tough.



## SOLUTION

*Earth Consultants International's* investigation included the excavation of three trenches and drilling 16 continuous-core borings. The borings were closely spaced to form a transect oriented perpendicular to the escarpment. Deformed sediment layers were found in the borings and the analysis indicated vertical

deformation across the Coyote Pass escarpment of about 0.08 millimeters/year. Our study suggests that this blind thrust fault will produce approximately 12 inches and 9 inches of vertical and horizontal movement, respectively, during its next earthquake. On the MacArthur Park escarpment, our trenches exposed tilted bedrock and minor, no-longer-active faulting and fracturing. However, the absence of datable materials in the trenches did not allow us to determine the age of folding, nor the rate of deformation across the MacArthur Park escarpment.

