



West Cliff Drive Sinkhole Santa Cruz, California

Civil and Structural Engineering



“This is a different approach, a more long-term fix for this specific location, so that it doesn’t continue under the road, and weaken the road.”

-Mark Dettle, Director of Public Works

Mesiti-Miller Engineering was selected by the City of Santa Cruz to provide engineering services for the emergency repair of a sea cave sinkhole which opened up near West Cliff Drive in Santa Cruz. The sinkhole measured approximately 15 feet in diameter and was approximately 28 feet deep. It was positioned near the top of an underlying 88ft-long sea cave and bisected by a fault line. This sea cave sinkhole had a history of reopening and had been temporarily repaired with rip rap and engineered fill several times. The City wanted a more permanent solution to ensure the long-term safety of West Cliff Drive.

MME entered and surveyed the sinkhole with a team of engineering geologists and mapped out the best location for the repair. A concrete curved-wall plug near the back of the sea cave was designed which would dissipate wave energy. The innovative design allowed construction crews to complete work between tide cycles. The sinkhole had grown during the weeks between the initial survey and the beginning of construction. As a result of the changes, new measurements and updated construction documents were quickly drawn up so the repair could be modified and the construction could continue.

A temporary dam was designed and constructed to allow the work to be quickly done. The face of the plug was textured and colored to blend in with the cave surroundings.

MME’s expertise in coastal repairs and ability to respond quickly provided an innovative and rapid repair model approach the City can utilize on coastal erosion in the future.

Client Reference:

Steve Wolfman

City of Santa Cruz, Department of Public Works

809 Center Street, Rm 201

Santa Cruz, CA 95060

(831) 420-5428

Budget: \$250,000