# VENTURA KEYS AND ARUNDELL BARRANCA WATERSHED PROJECT

VENTURA KEYS
SAN BUENAVENTURA, CALIFORNIA

## PROJECT DESCRIPTION

Ventura Keys is a residential development located north of Ventura Harbor in San Buenaventura, California. The Keys consists of approximately 300 waterfront lots, two privately owned beaches, three main channels and a connecting channel to the harbor. The Arundell Barranca is an intermittent stream that drains approximately 7,165 acres. The mouth of the Arundell Barranca discharges into the Keys channels. Over the past 30 years, Keys homeowners claim that the Keys have been adversely impacted by excessive sedimentation from the Arundell Barranca and poor water quality. These negative impacts include shoaling in the channels and high levels of bacteria that exceed human water contact standards. The purpose of the Ventura Keys Arundell Barranca Watershed Project was to provide long-term solutions to the water quality and sedimentation problems in the Keys waterways.

## PROBLEM CHARACTERIZATION AND DEVELOPMENT OF ALTERNATIVES

Cotton, Shires and Associates, Inc. (CSA) were part of multidisciplinary team formed on behalf of the City of San Buenaventura to identify and evaluate the technical issues forming the basis of the claims of the Keys homeowners. CSA was responsible for characterizing the watershed and stream channel, investigating diversion routes and wetlands sites, performing detailed cost estimates, and writing the Project Alternatives Report. In characterizing the physical workings of the watershed and stream channel, CSA examined historic precipitation and runoff records, performed detailed aerial photograph analyses, measured stream flow and sediment transport, and conducted computer-assisted streamflow modeling. Investigation of diversion routes and potential wetlands sites required detailed topographic surveying, geomorphic mapping, and extensive streamflow modeling. Following the investigations and analyses, a set of nearly 50 Project Components were identified to mitigate specific aspects of the water quality and sedimentation problems. The components were combined into various Project Alternatives that were considered project solutions to the problems in the Keys waterways. CSA developed detailed cost estimates for each Project Component and the various Project Alternatives, and was also the lead author of the final technical report. The final technical report describes the physical and biological setting, technical studies, and the components and alternatives. This report serves as the technical foundation for the various environmental documents required as part of the permitting process. Five Project Alternatives were formally developed and presented by the team to the various political bodies, regulatory agencies, and stakeholder groups. These Project Alternatives range in cost from $10 million to $40 million, and are currently under consideration by the City and environmental consultants.

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