

ROAD: CORONADO BRIDGE
CITY: SAN DIEGO, CALIFORNIA
SOLUTION: REVERSIBLE LANE MEDIAN BARRIER

The Coronado Bridge was built in 1969, 11,179 feet long with a 4.67% grade, a 1,800-foot radius turn and a vertical clearance of 200 feet. The bridge opened in August of 1969 carrying 19,300 vehicles per day (vpd). By 1975, it reached 30,500 vpd and continued to climb, reaching 63,000 vpd in 1992. It became necessary to maintain the center lane of the 5-lane bridge as a reversible lane to accommodate the heavy peak commute traffic. This was accomplished with the use of plastic delineation devices. A high concentration of military facilities located on Coronado added to the heavy peak commute traffic of 11,000 vehicles in the morning and 15,000 in the evening. With the increased traffic, more crossover head-on accidents occurred, prompting Caltrans bridge officials to look into methods to provide positive separation of traffic while maintaining the reversible lane. Caltrans spent a number of years testing and studying this technology and monitoring a similar installation of the Quickchange® Moveable Barrier (QMB) on the Auckland Harbour Bridge in New Zealand. They subsequently contracted with Barrier Systems, Inc. to install the QMB on Coronado Bridge. Prior to the installation of the QMB, Caltrans resurfaced 1800 feet of the roadway at the center span on the bridge. Completing this, the QMB was installed over a weekend in April 1993. Dedication of the reversible lane took place on April 8, 1993. Twice a day, 5 days a week, two transfer machines, traveling at a speed of approximately 3 mph, move the concrete barrier laterally 6 feet each to reverse the center lane of the five lane bridge. The 25-ton transfer machines make the 12-foot lane change of 1.6 miles of barrier, weighing over 3.5 million pounds, in 25 minutes. Crossover head-on accidents have been totally eliminated. Use of the center lanes of the bridge has increased and peak hour traffic congestion has been reduced.