

# ORANGE COUNTY SANITATION DISTRICT, CALIFORNIA

## Ocean Outfall, Diffuser System, and 600-mgd Booster Pump Station

### HIGHLIGHTS

Since 1953, Carollo has provided engineering services for OCSD's entire 600-mgd outfall system.

600-mgd outfall booster pump station is the largest on the Pacific Ocean.

Repair and maintenance services.

ASCE Outstanding Engineering Award.

Carollo has been involved in the design and construction of the entire ocean disposal system at the Orange County Sanitation District since its initial construction in 1953. As a testimony to our quality service and talented staff, we have continued to provide engineering services for the maintenance, repair and upgrades to this disposal system.

The outfall system designed by Carollo consists of:

- ▶ Outfall No. 1 at 78-inch diameter, 1,900-foot land section, extending 7,000-feet offshore, discharging at a depth of 65-feet below mean sea level with a 1,000-foot diffuser section. This outfall is currently used for emergencies, after its replacement by Outfall No. 2.
- ▶ Outfall No. 2 at 120-inch diameter, extending 21,400-feet seaward from Huntington Beach, extending further 19,000-feet offshore, with a 6,000-foot diffuser section. The capacity of Outfall No. 2 is 420-mgd. During peak flow, in excess of 450 mgd, both Ocean Outfall No. 1 and No. 2 are used.
- ▶ 600-mgd Ocean Outfall Booster Pump Station, the largest of its kind on the Pacific Coast. The pumps are driven by 2,300-hp high efficiency variable speed drives.

Carollo's services during the life of these systems has included emergency repair of Outfall No. 1 in 1995 to repair the 25 year old diffuser system; and investigation, inspection, modeling, and repair

of Outfalls No. 1 and No. 2 in 1996. Carollo coordinated team efforts, which included District staff, a special two-man submarine team, divers, and a corrosion specialist.



*Carollo coordinated and led team efforts during the 1995 and 1996 repairs to both Outfalls No. 1 and No. 2.*



*Carollo provided design, construction, and continuing engineering services for the OCSD's entire Ocean Outfall System since initial construction in 1953.*