

Seawater Desalination Plant Engineering Services

HIGHLIGHTS

Seawater demineralization using RO was the recommended option to increase water supply capacity.

Carollo provided planning, siting, permitting, and design services for the 1.2-mgd seawater RO plant.

Siting was based on environmental issues and geotechnical reports.

Carollo has a long history working for the Cambria Community Services District (CCSD) on their Seawater Desalination Project. This history is long and is the result of the complex political and social environment of this quaint, coastal community in central California. Projects that Carollo has been involved in span back to 1989 when Carollo was retained to develop a water supply plan that first recommended seawater desalination as a water supply option and continues through today with Carollo providing services to redesign the seawater desalination project to incorporate the latest and most energy efficient technologies.

For the 2004 update to the seawater desalination plant design, Carollo's services include:

- ▶ Seawater desalination process design updates.
- ▶ Collector well intake design.
- ▶ Outfall design.
- ▶ Design of pipelines through an environmentally sensitive state park.
- ▶ Solar power generation station design.
- ▶ Grant funding support services.

The design prepared by Carollo includes a detailed design and specification set that will be used to deliver this project by a design/build delivery. The design/build phase of the project is managed by

the Army Corps of Engineers (ACE), who is administering the grant funds. The intent of the design prepared by Carollo is to establish the details of the project to a high enough degree such that, when the ACE takes over a project manager, CCSD will get the project that they have envisioned.

Unique features of Carollo's design updates include the use of the most energy efficient technology, including a pressure exchanger energy recovery device, low energy seawater RO membranes, and high efficiency pump and motor technologies. Post-treatment design will include use of either limestone filters or blending with the CCSD's San Simeon wells, depending upon well availability.



Carollo Engineers' Kurt Frank has been involved in the engineering of more than 350 mgd of desalination capacity over the last 35 years. These services have included planning, cost estimating, permitting, design, construction, and operations.