4 CUMULATIVE IMPACTS

By definition and according to the California Environmental Quality Act (CEQA), cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. That is, the cumulative impact of several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and/or reasonably foreseeable projects. Cumulative impacts can result from individually minor, but collectively cumulative projects taking place over a period of time.

4.1 CUMULATIVE PROJECT LIST

The following projects were identified and considered in the cumulative impacts analysis.

4.1.1 Encinitas and Solana Beach Shoreline Feasibility Study

The U.S. Army Corps of Engineers (Corps) is currently conducting a comprehensive evaluation of beach and bluff erosion along Encinitas and Solana Beach. The study also evaluates restoration of San Elijo Lagoon and the potential to use lagoon sediment for beach nourishment. The study, which is expected to be available for review in 2005, evaluates four alternatives to eliminate or reduce coastal storm damage and shoreline erosion. These alternatives are:

- Beach Nourishment—This alternative includes the use of dredges to remove sand from offshore borrow sites and place it on the beach in select locations on Encinitas and Solana Beach.

- Beach Nourishment with Toe Protection—This alternative includes beach nourishment from sand from offshore borrow sites and also incorporates sea cave and bluff notch filling with erodible concrete.

- Bluff protection walls—This alternative includes the construction of bluff protection walls at select locations on Encinitas and Solana Beach.

- Bluff protection walls and Revetment—This alternative includes the use of revetments at the toe of the bluff to retard bluff erosion at select locations in Encinitas.

4.1.2 City of Encinitas Moonlight Beach Nourishment Project

The City of Encinitas (City) imports sand annually to Moonlight Beach to augment the naturally occurring sand at the beach. This program imports approximately 13 tons of sand in the spring from inland sand-borrow areas for placement on the upland portion of the beach. Sand is trucked in, placed in an area above the mean high tide line, and spread across the back beach.

4.1.3 Bluff Protection Wall and Bluff Retention Projects in City of Encinitas

A number of projects that include new bluff protection walls, existing bluff protection wall rehabilitation, and upper and lower bluff stabilization actions are proposed along the Encinitas coastline. Table 4-1 provides a list of these pending projects before the City.

4.2 CUMULATIVE ENVIRONMENTAL IMPACTS

This section discusses the cumulative impacts that may occur as a result of the proposed project when combined with the past, present, and reasonably foreseeable projects identified in Section 4.1.

4.2.1 Geology and Soils

Bluff protection wall projects located along the Encinitas coastline would result in beach erosion impacts similar to those described for the proposed project, including passive erosion and erosion of the tidal terrace. The incremental effects of the proposed project in combination with the other projects evaluated in the study area, is cumulatively considerable. Although the sand replenishment program that would be implemented by the project would mitigate the direct effects at the project site, there are no project-specific mitigation measures that would fully mitigate the cumulative effects in the local region. Therefore, the project would result in significant and unmitigated cumulative impacts related to geology/soils.

4.2.2 Visual Quality/Aesthetics

With respect to visual quality/aesthetics, the other bluff protection wall projects located along the Encinitas coastline have a significant cumulative impact. This impact is related to their adverse contrast with the natural bluff topography, form, and character and the resulting increase in the manufactured appearance of the local coastline. The incremental effect of the proposed project, in conjunction with the other cumulative projects, is cumulatively considerable. Project-specific mitigation measures would mitigate the direct visual quality impacts of the project. However, there are no measures that would reduce the cumulative impact to below a level of significance.

4.2.3 Water Quality

The proposed project's incremental contribution to water quality impacts would be reduced to less than significant levels through the use of erosion controls and best management practices that are included in the design of the project. The proposed project's contribution to water quality impacts is not considered cumulatively considerable.

Table 4.2-1: Bluff Protection Wall and Bluff Retention Projects in the City of Encinitas

Project Case#/Project Address	Project Description	Status
Case #90-028 620 Neptune Avenue	Major Use Permit for existing bluff protection wall	On hold; applicant to submit revised plans to the City of Encinitas for review
Case #01-160 828 Neptune Avenue	Major Use Permit and Coastal Development Permit for authorization of a lower bluff protection wall and upper-bluff wall	Project partially complete
Case #02-252 808 and 816 Neptune Avenue	Bluff control measures for two adjacent properties	Project partially complete
Case #02-071 1244/1252 Neptune Avenue	Major Use Permit for construction of a lower bluff protection wall at the base of the coastal bluff	Under review with City and California Coastal Commission
Case #97-074 788-790 Neptune Avenue	Existing lower bluff protection wall and upper-bluff retention system	Under review with City
Case #00-024 630 Neptune Avenue	Bluff protection wall and upper- and lower-bluff stabilization	Under review with City
Case #00-062 858-860 Neptune Avenue	Bluff protection wall and upper- and lower-bluff stabilization	Under review with City
Case#00-278 270-272 Neptune Avenue	Bluff protection wall	Under review with City
Case #02-169 1070, 1066, and 1064 Neptune Avenue	Lower coastal bluff protection wall with backfill and upper-bluff retention system (rear-yard, below grade)	Under review with City
Case #03-035 1500 and 1520 Neptune Avenue	Rehabilitation of previously approved bluff protection wall to be replaced with tied-back walls and shotcrete/chemical stain to match the natural bluff formation	Under review with City

Table 4.2-1 (Concluded)

Project Case#/Project Address	Project Description	Status
Case #01-304 633 Circle Drive, Solana Beach	Major Use Permit and Coastal Development Permit for bluff protection wall and other shoreline stabilization measures	Approved by the City; Under review by the California Coastal Commission
Case # 05-219 680 Neptune	Major Use Permit and Coastal Development Permit for lower and upper bluff protection walls	Under review with City
Case # 05-059 554 Neptune	Major Use Permit and Coastal Development Permit for upper bluff retention system	Under review with City

4.2.4 Recreation

As noted in Section 4.2.1, bluff protection wall projects located along the Encinitas coastline would cause impacts to beach erosion similar to those described for the proposed project, including passive erosion and erosion of the tidal terrace. The project's incremental effect on the recreational resource value of the beach areas in the local region is cumulatively considerable. Although the sand replenishment program that would be implemented by the project would mitigate the direct recreational effects at the project site, there are no project-specific mitigation measures that would fully mitigate the cumulative effects in the local region. Therefore, the project would result in significant and unmitigated cumulative impacts on recreation.

4.2.5 Paleontological Resources

Cumulative paleontological impacts could occur if projects included in this cumulative impact analysis result in the excavation of fossil-bearing geologic formations. However, the proposed project's contribution to this impact is not cumulatively considerable because mitigation measures presented in Chapter 2—Environmental Impact Analysis— would reduce the impact to less than significant levels. In addition, each project is evaluated for the potential to cause paleontological impacts and any necessary mitigation measures are imposed through the City's CEQA review process. Therefore, significant cumulative paleontological impacts are not anticipated.