8. Beaches and Coastal Sand Dunes

8.1 BACKGROUND AND CONTEXT

Beaches function as natural buffers between erosive wave action and uplands, provide recreational value for residents and tourists, and serve as critical habitat for plant and animal species.

Sand beaches are dynamic geologic features, which are formed by wave deposition of material from eroded coastal uplands or bluffs and dunes; riverine transport of material to the coastline; and littoral drift, which is the movement of entrained sand grains in the direction parallel to the coast as the result of waves breaking at an angle to the shoreline (i.e., a longshore or littoral current). The size of the eroded sediment generally controls the slope of the beach, with pebble beaches being steeper than sand beaches.

A section of shoreline where the flow of sand begins at a major sediment source and terminates at a major sediment sink, such as a submarine canyon, is known as a *littoral cell*. Ventura County is part of the Santa Barbara Cell, as well as the Santa Monica Cell, in which waves moving in the direction of prevailing westerly to northwesterly winds generally meet the beaches at a slight angle because of the shoreline's orientation from northwest to southeast. The resultant effect is a net movement of sand over time from northwest to southeast along the beaches. The Santa Barbara cell ultimately deposits sand in the Mugu and Hueneme submarine canyons. The Santa Monica Cell primarily deposits sand from the Santa Monica Mountains into the submarine canyon near Point Dume and Santa Monica Bay.

Coastal sand dunes are extremely fragile as they are the natural accumulation of wind-blown sand. Like sandy beaches, coastal dune formations are dynamic in nature, migrating and reforming, depending on wind strength and direction, wave patterns, and coastal topography. Dunes also act as protective geologic features that help inhibit beach and upland erosion. Dunes form a protective buffer from both wind and wave action for beach and upland areas and resources, both natural and man-made, immediately inland. They also protect coastal salt marshes and wetlands and provide critical habitat for several coastal plant and animal species.

In Ventura County, major *coastal sand dunes* are mostly located within the cities of Oxnard and Ventura. They are found in the McGrath-Mandalay area, at Ormond Beach, in the vicinity of Naval Base Ventura County Point Mugu, and near the mouths of the Santa Clara and Ventura Rivers. Additionally, a large *coastal sand dune* formed as a result of aeolian transport is located on the inland side of Pacific Coast Highway, near the south end of Thornhill Broome Beach.

8.2 THRESHOLDS OF SIGNIFICANCE

The determination of significance shall be made on a case-by-case basis and evaluated using the following threshold of significance as specified below.

BEA-1 A project may have a significant impact if it would cause a substantial adverse change to a beach or *coastal sand dune*.

8.3 IMPACT ANALYSIS

Guidance on addressing the questions from the Initial Study Checklist is provided below. In order to determine whether project impacts exceed or meet the criteria of the threshold of significance in Section 8.2, the level of impact shall be evaluated based on the appropriate assessment methodologies as outlined below.

(a) Would the project have the potential to cause a substantial adverse change to a beach or coastal sand dune?

An adverse change means any increased disturbance, erosion, alteration, destruction, removal, or placement of sand or vegetation on a beach or *coastal sand dune*. An adverse change may also include, but are not limited to, a building or structural development (e.g. *shoreline protective device*) that increases erosion or otherwise results in the permanent conversion of beach or *coastal sand dune* habitat, as well as any impediment to natural sand flow and transport that could impact beaches and *coastal sand dunes*. Projects that involve mining activities located upstream of a stream or river may have the potential to adversely affect sediment supply and/or sediment deposition on beaches, and thus shall be analyzed for potential impacts to beaches and *coastal sand dunes* as required by General Plan Policy COS-2.4.

Whether a project has the potential to cause a substantial adverse change may be informed by state and local policies related to beaches and *coastal sand dunes* in the California Coastal Act, in particular its provisions on *Environmentally Sensitive Habitat Areas*, as well as the Ventura County Local Coastal Program, the Ventura County General Plan, Ventura County Coastal Zoning Ordinance, and any other policies applicable to the County's beaches and *coastal sand dunes*. Refer to Section 6.1.2 of this document for additional information related to analyzing project impacts on *ESHA* within the coastal zone.

If a development project has the potential to cause a substantial adverse change or impede sand transport (e.g., the construction of *shoreline protective devices* or a use that removes aggregate materials from a dune, *littoral cell*, creek, stream, or bluff), the project applicant shall prepare a wave runup and/or coastal engineering report that evaluates the project's effects on *adjacent* structures, net littoral drift, and *adjacent* area beach profiles. The wave runup and/or coastal engineering report must:

1. Include a detailed description of the existing environmental setting of the project site in both a local and regional context, such as site topography, drainage features and patterns, coastal geologic conditions, meteorological and hydrodynamic processes (e.g., sea level rise, wave climate, seasonal and historic storm conditions), coastal hazards (e.g., erosion, tsunami risk, coastal flooding), littoral drift and sediment transport patterns, seasonal sand movement patterns, seasonal tidal and water level fluctuations, and presence of *coastal sand dunes*, if any. For projects that involve development on or *adjacent* to beaches, the wave runup and/or coastal engineering report shall describe the project site in terms of its role/function in the *littoral cell*.
2. Evaluate sea level rise as it relates to the project and its potential impacts. Refer to the Ventura County Local Coastal Program and the Ventura County Coastal Zoning Ordinance.

3. Evaluate the project in terms of its consistency with the beaches and *coastal sand dunes* policies of the California Coastal Act, as well as the Ventura County Local Coastal Program, Ventura County General Plan, and the Ventura County Coastal Zoning Ordinance;
4. If applicable, projects that involve *shoreline protective devices* may require additional survey and analysis reports pursuant to Section 8175-5.12 of the Ventura County Coastal Zoning Ordinance.
5. Identify all potentially significant impacts and *feasible* mitigation measures to avoid or reduce impacts; and
6. Identify the project's incremental effect in relation to any cumulative impacts relating to beaches and *coastal sand dunes*. For projects that involve development on or *adjacent* to beaches or bluffs, the report must evaluate the project's contribution to potential cumulative impacts generated by past, present, and reasonably foreseeable probable future projects within the *littoral cell* (refer to Section 6.1.2 of this document for evaluating impacts on *coastal sand dunes* and other types of beach/coastal habitats as it relates to ~~*sensitive*~~ biological resources within the coastal zone). Consult with the Resource Management Agency (RMA) Planning Division, the California Coastal Commission, and nearby local jurisdictions, as appropriate, on past, present, and reasonably foreseeable probable future projects within the *littoral cell* and their combined impacts on beach sand flow. Impacts on sand flow from other projects within the *littoral cell* must be analyzed in conjunction with the proposed project in order to evaluate the extent of cumulative impacts on beaches and *coastal sand dunes*.

If the project has the potential to cause a substantial adverse change to a beach or *coastal sand dune* that is habitat for *endangered, rare, or threatened species* or *locally important species*, the project applicant shall retain a *qualified biologist* to analyze the potential impacts according to the guidelines outlined in Section 6, Biological Resources.

Preparation of Initial Study Checklist

The following information shall be used to complete the Initial Study Checklist.

A determination of **Less Than Significant (LS)** shall be made if the project does not include development that would result in a substantial adverse change to beaches or *coastal sand dunes*.

A determination of **Less Than Significant with Mitigation Incorporated (LS-M)** shall be made if the project would result in a substantial adverse change to beaches or *coastal sand dunes*, but mitigation measures have been identified in consultation with the RMA Planning Division and Public Works Agency, as appropriate, to reduce potentially significant impacts to a less than significant level.

A determination of **Potentially Significant (PS)** shall be made and further analysis shall be addressed in an EIR if there is *substantial evidence* that the project would result in a substantial adverse change to beaches or *coastal sand dunes*.

8.4 RESOURCES & REFERENCES

Source	Managing Agency/Organization	Online Access
Resources		

Source	Managing Agency/Organization	Online Access
Ventura County CEQA Implementation Manual	Ventura County Resource Management Agency (RMA) Planning Division	PDF | Website
Ventura County Initial Study Assessment Guidelines: Introduction	Ventura County RMA Planning Division	PDF | Website
Ventura County Initial Study Checklist Template	Ventura County RMA Planning Division	PDF | Website
References		
California Coastal Act	California Coastal Commission	Website
California Environmental Quality Act	California Governor's Office of Land Use and Climate Innovation, formerly Office of Planning and Research	Website
Ventura County Coastal Zoning Ordinance	Ventura County RMA Planning Division	PDF
Ventura County General Plan, Conservation and Open Space Element	Ventura County RMA Planning Division	PDF | Website
Ventura County Local Coastal Program	Ventura County RMA Planning Division	Website