

Beach Fill

Beaches are usually thought of as one of the most attractive and valued elements of shoreline recreational activities, but they are also a first line of defense against erosion damage, protecting the area behind them. In normal weather, gently sloping beaches cause incoming waves to break and use up their energy before reaching inland areas.

As explained in the section on shoreline erosion processes, beach material and littoral drift usually move as waves advance and recede. A beach that is relatively stable or growing provides natural protection to the land behind it. When there is net loss, however, with the beach area shrinking, there is increased danger of damage as the water line advances inland.

Adding fill to a beach, either to replace the lost beach materials or to increase the size of an existing beach, is often both economical and effective. As shown below, addition of fill increases the width of the backshore, moving the high water line farther offshore. Fill should resemble the original beach material: coarser fill will erode more slowly, finer fill, more quickly, than the native beach. The slope of the filled beach should also match the natural slope as closely as possible.

The cost and convenience of beach fill as a method of erosion control depend on the rate of loss from the beach. Where fill is readily available at a nearby location, the initial cost is relatively low, but refilling constitutes a regular maintenance cost. In some cases this can be substantially reduced or eliminated by the use of breakwaters or retaining structures.

Beach fill is often used in combination with construction of a perched beach or groin field. These combinations may minimize potential damage to other beaches or provide a beach where the natural littoral drift cannot be effectively trapped.

