

Dune Construction

Sand dune construction protects the area landward of the dune while enhancing the beach lakeward of the dune. Dunes function to protect the upland by limiting the number and force of waves reaching inland, while also providing protection from storms and strong winds. The larger the dune, the greater the protection provided. Dunes also function to enhance beaches by periodically providing sand to the beach and nearshore area. This is usually done through wind blown transport of the materials, but if waves are large enough to reach the dune, they may remove sand and place it on the beach and in the nearshore.

Constructing a dune involves the build-up of sand directly behind a beach so that the dune has a slight to moderate increase in elevation over the beach area. Most often snow fencing or netting is placed early in the process to capture wind-blown sand, while vegetation is planted to keep the dune in place. In some cases, material or structures are placed at the core of the dune to provide a base for the accumulation of sand. Cores can consist of biodegradable material or ramp-like structures built of treated wood with open slots for planting vegetation. Native vegetation is preferred when working on any project along the lake.

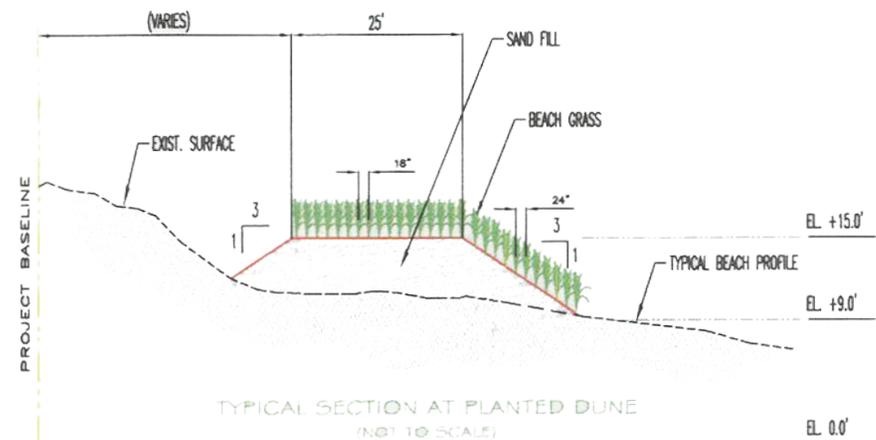
Similar to beach nourishment, any sand placed during a dune construction project should be of the same or larger grain size than the materials occurring naturally at the same location. Sand which is smaller than the locally-occurring material may be quickly eroded by wind and wave action.

For a dune to function properly, there must be adequate room between the lake and the upland, and the dune must remain relatively undisturbed by foot or vehicle traffic. If a site has an existing sand dune, whether or not it also has vegetation, it is best to not walk on the dune to prevent it from eroding away. When existing vegetation is damaged or destroyed by foot or vehicle traffic, there is a greater chance of the dune eroding as the vegetation dies off.

To maintain a dune, re-vegetation may be necessary should the initial plantings not survive. The area of new vegetation may need to be cut off from pedestrian traffic. Often snow fencing is a simple way to direct traffic around the new plantings. If a dune loses too much sediment during a storm event or over time, re-nourishment may be necessary.

Constructing a dune over a small area of beach may not require the assistance of a contractor, should the property owner be able to acquire the sediment and machinery necessary. The planting of vegetation and the

placement of snow fencing or netting can often be conducted by a property owner or community. In most cases, however, dunes are constructed over larger areas, which are more efficiently dealt with by a contractor. In those instances, a property owner will require the services of a contractor.



Beach nourishment - Dune construction