FWR 10.30 Coastal Banks

(1) Introduction.

Coastal banks are likely to be significant to storm damage prevention and flood control, and may be significant to wildlife habitat. Coastal banks that supply sediment to coastal beaches, coastal dunes and barrier beaches are per se significant to storm damage prevention and flood control. Coastal banks that, because of their height, provide a buffer to upland areas from storm waters are significant to storm damage prevention and flood control.

Coastal banks composed of unconsolidated sediment and exposed to vigorous wave action serve as a major continuous source of sediment for beaches, dunes, and barrier beaches (as well as other land forms caused by coastal processes). The supply of sediment is removed from banks by wave action, and this removal takes place in response to beach and sea conditions. It is a naturally occurring process necessary to the continued existence of coastal beaches, coastal dunes and barrier beaches which, in turn, dissipate storm wave energy, thus protecting structures of coastal wetlands landward of them from storm damage and flooding.

Coastal banks, because of their height and stability, may act as a buffer or natural wall, which protects upland areas from storm damage and flooding. While erosion caused by wave action is an integral part of shoreline processes and furnishes important sediment to downdrift landforms, erosion of a coastal bank by wind and rain runoff, which plays only a minor role in beach nourishment, should not be increased unnecessarily. Therefore, disturbances to a coastal bank which reduce its natural resistance to wind and rain erosion cause cuts and gullies in the bank, increase the risk of its collapse, increase the danger to structures at the top of the bank and decrease its value as a buffer.

Bank vegetation tends to stabilize the bank and reduce the rate of erosion due to wind and rain runoff. Pedestrian and vehicular traffic damages the protective vegetation and frequently leads to gully erosion or deep "blowouts" on unconsolidated banks. Therefore, any project permitted by FWR 10.30 should incorporate, when appropriate, elevated walkways.

A particular coastal bank may serve both as a sediment source and as a buffer, or it may serve only one role.

(2) Definition, Critical Characteristics and Boundary.

(a) Coastal Bank means the seaward face or side of any elevated landform, other than a Coastal Dune, which lies at the landward edge of a Coastal Beach, Land Subject to Tidal Action, Land Subject to Coastal Storm Flowage (LSCSF), or other wetland/coastal resources. Coastal Bank also means coastal engineering structures serving the purpose of storm damage prevention or flood control.
(b) The slope of a coastal bank must be \( \geq 10:1 \) (see Figure 1).

(c) An eroding coastal bank is one that serves as a sediment source.

(d) When the Commission determines that a coastal bank is significant to storm damage prevention or flood control because it is a vertical buffer to storm waters, the stability of the bank, i.e., the natural resistance of the bank to erosion caused by wind and rain runoff, is critical to the protection of that resource area value(s).

(e) The boundary of the top of the coastal bank shall conform to one of the following models, as appropriate for the site:

1. For a coastal bank with a slope of \( \geq 4:1 \), the "top of coastal bank" is that point above the 100-year flood elevation where the slope becomes \(<4:1\). (see Figure 2).

2. For a coastal bank with a slope \( >10:1 \) but \(<4:1\), the top of coastal bank is the 100-year flood elevation. (see Figure 3).

3. The top of coastal bank will fall below, the 100-year flood elevation and is the point where the slope ceases to be \( \geq 10:1\). (see Figure 4).

(f) There can be multiple coastal banks within the same site. This can occur where the coastal banks are separated by land subject to coastal storm flowage [an area \(<10:1\)]. (See Figures 5 and 6). When the Commission determines that a coastal bank is significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes or barrier beaches, the ability of the coastal bank to erode in response to wave action is critical to the protection of that resource area value(s).

**Figure 1:** Note that a 4:1 slope is greater than (steeper than) a 10:1 slope.

- 4:1 is equivalent to 14 degrees or 25 percent.
- 10:1 is equivalent to 6 degrees or 10 percent.
Figure 6
Legend - Figures 2 - 6 are not to scale

100 year flood elevation (as shown on community FIRM or storm of record)

Land subject to coastal storm flowage (LSCSF)

Coastal Bank

Toe of bank, which lies landward of a coastal beach, land subject to tidal action, or other wetland
(3) Presumptions

(a) When a proposed project involves removal, filling, dredging, building upon, degrading or otherwise altering of a coastal bank, the Commission shall presume that the area is significant to, and the proposed activity will have a significant or cumulative effect upon, the resource area values specified in FWR 10.30(1). These presumptions are rebuttable and may be overcome only upon a clear showing that the coastal bank does not play a role in the protection of said resource area values. In the event that the presumptions are deemed to have been overcome, the Commission shall make a written determination to this effect, setting forth the grounds.

(b) A coastal bank subject to wave action and showing exposed (unvegetated) sand or soils shall be presumed to be a significant sediment source.

(c) Activity on a coastal bank steeper than 4:1 or on a coastal bank in a velocity zone shall be presumed to have an adverse effect on the stability of the coastal bank.

(4) General Performance Standards. When a coastal bank is determined to be significant to storm damage prevention, flood control, wildlife habitat, or erosion and sedimentation control, FWR 10.30.(5) through FWR 10.30(11) shall apply.

(5) No new bulkhead, revetment, seawall, groin or other coastal engineering structure shall be permitted on such a coastal bank except that such a coastal engineering structure shall be permitted when required to prevent storm damage to buildings constructed prior March 22, 1989, or constructed pursuant to a Permit Application filed prior to March 22, 1989, including reconstructions of such buildings subsequent to March 22, 1989, provided that the following requirements are met:

(a) a coastal engineering structure or a modification thereto shall be designed and constructed so as to minimize, using best available measures, adverse effects on adjacent or nearby coastal beaches due to changes in wave action;

(b) the applicant demonstrates that no method of protecting the building other than the proposed coastal engineering structure is feasible (Moving the building to an alternative location on the same lot or adjacent lot under the ownership or control of the applicant shall be presumed feasible.); and

(c) the best available measures utilized to minimize adverse effects on adjacent or nearby coastal beaches due to changes in wave action shall include beach nourishment activities.
(6) Any project on a coastal bank or within 100 feet landward of the top of a coastal bank, other than a structure permitted by FWR 10.30(5), shall not have an adverse effect due to wave action on the movement of sediment from the coastal bank to coastal beaches or land subject to tidal action.

(7) Except as permitted under FWR 10.30(5), no project shall be permitted on:

(a) an eroding Coastal Bank;

(b) any portion of a Coastal Bank that is within a V-zone

(c) that portion of a Coastal Bank with a slope greater or equal to 4:1

(d) that portion of a Coastal Bank that is within
   1. one hundred feet (100 ft.) of:
      a. Land Under the Ocean;
      b. Salt Marsh; or
      c. Banks of Salt Ponds, Estuaries, and Ponds, Lakes, and Streams which flow throughout the year; or
   2. seventy-five feet (75 ft.) of:
      a. Land Subject to Tidal Action;
      b. Freshwater wetlands; or
      c. Banks of intermittent Streams.

3. Notwithstanding the provisions of FWR 1030(7)(d), activities listed in FWR 10.18(9) and FWR 10.18(10) may be permitted in the areas described in FWR 10.30(7)(d) provided that all other provisions of FWR 10.30 are met.

(8) The Permit and the Certificate of Compliance for any new building within 100 feet landward of the top of a coastal bank permitted by the Commission under Chapter 235 of the Code of Falmouth shall contain the specific condition: FWR 10.30(5), promulgated under Chapter 235 of the Code of Falmouth, requires that no coastal engineering structure, such as a bulkhead, revetment, or seawall shall be permitted on an eroding bank at any time in the future to protect the project allowed by this Permit.

(9) Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.
(10) Notwithstanding the provisions of FWR 10.30(5) through (8), protective planting designed to reduce erosion may be permitted.

(11) Notwithstanding the provisions of FWR 10.30(5) through (10), no project may be permitted which will have any adverse effect on habitat of rare species.