

WAC 220-660-370 Bank protection in saltwater areas. Appropriate methods to assess the need for marine bank protection and, if needed, to design marine bank protection are available in the department's *Marine Shoreline Design Guidelines*, as well as other published manuals and guidelines.

(1) **Description:** A broad spectrum of bank protection techniques can be applied to protect property. These range from natural techniques that require minimal or no engineering to engineered soft shore protection to hard shore armor. Natural techniques include planting native vegetation, improving drainage, and relocating structures. Natural techniques typically preserve the natural condition of the shore and have few to no negative impacts on fish life. Soft shore techniques include log placement, beach nourishment, resloping the bank, and revegetation can provide erosion protection using strategically placed natural materials while allowing beach processes and fish habitat to remain intact. Conventional hard techniques include bulkheads, seawalls, revetments and retaining walls, which are designed to preclude shoreline migration and bank erosion. Each type of approach has varying degrees of impact. In general, natural techniques result in the fewest impacts to fish life and hard armor have the most impacts.

(2) **Fish life concerns:** Conventional hard techniques as well as some soft shore techniques can physically alter the beach and disrupt beach processes. This alteration can cause a loss of the beach spawning habitat for Pacific sand lance and surf smelt. These forage fish species are a primary food source for some adult salmon species. This alteration can also reduce beach complexity, the presence of marine riparian vegetation including overhanging vegetation alongshore that produces terrestrial insects that are eaten by juvenile salmon. To protect fish life, the department protects both beaches where saltwater habitats of special concern occur and the beach processes that form and maintain this habitat.

(3) **Bank protection design:**

(a) If the ordinary high water line (OHWL) has changed since an existing hard bank protection structure was built, and OHWL reestablishes landward of the structure, the department will consider this reestablished OHWL to be the existing OHWL for permitting purposes. If an HPA application is submitted for repairs within three years of the breach, the bank protection structure may be repaired or replaced in the original footprint.

(b) A person must use the least impacting technically feasible bank protection alternative. A person should propose a hard armor technique only after considering site characteristics such as the threat to major improvements, wave energy, and other factors in an alternatives analysis. The common alternatives below are in order from most preferred to least preferred:

- (i) Remove the bank protection structure;
- (ii) Control upland drainage;
- (iii) Protect, enhance, and replace native vegetation;
- (iv) Relocate improvements or structures;
- (v) Construct a soft structure;
- (vi) Construct upland retaining walls;
- (vii) Construct hard structure landward of the OHWL; and
- (viii) Construct hard structure at the OHWL.

(c) The construction of all bank protection must not result in a permanent loss of surf smelt or Pacific sand lance spawning beds.

(d) An HPA application for new bank protection, or the replacement or rehabilitation of bank protection that extends waterward of an

existing bank protection structure must include a site assessment, alternatives analysis and design rationale for the proposed method prepared by a qualified professional. The department may grant an exemption depending on the scale and nature of the project. The applicant must submit the qualified professional's report to the department as part of a complete application for an HPA that includes:

(i) An assessment of the level of risk to existing buildings, roads, or services being threatened by the erosion;

(ii) Evidence of erosion and/or slope instability to warrant the stabilization work;

(iii) Alternatives considered and the technical rationale specific to the bank protection technique proposed;

(iv) An analysis of the benefits and impacts associated with the chosen protection method; and

(v) An explanation of the method chosen, design parameters, types of materials, quantities, staging, and site rehabilitation.

(e) The department may require the design of hard bank protection structures to incorporate beach nourishment, large woody material or native vegetation as mitigation.

(4) Bank protection location:

(a) Locate the waterward face of a new hard bank protection structure at or above the OHWL. Where this is not feasible because of geological, engineering, or safety concerns, the hard bank protection structure may extend waterward of the OHWL the least distance needed to excavate for footings or place base rock, but no greater than six feet. Soft shoreline methods that allow beach processes and habitat to remain intact may extend waterward of the OHWL.

(b) Do not locate the waterward face of a replacement or repaired hard bank protection further waterward than the structure it is replacing. Where removing the existing hard bank protection will result in environmental degradation such as releasing deleterious material or problems due to geological, engineering, or safety concerns, the department will authorize the replacement bank protection to extend waterward of, but directly abutting, the existing structure. In these instances, a person must use the least-impacting type of structure and construction method.

(5) Bank protection construction:

(a) The department requires that plans submitted as part of a complete application show the horizontal distances of the structure(s) from permanent local benchmark(s) (fixed objects). Each horizontal distance shown must include the length and compass bearing from the benchmark to the waterward face of the structure(s). The benchmark(s) must be located, marked, and protected to serve as a post-project reference for at least ten years from the date the HPA application is submitted to the department.

(b) A person must not conduct project activities when tidal waters cover the work area including the work corridor, except the area occupied by a grounded barge.

(c) No stockpiling of excavated materials containing silt, clay, or fine-grained soil is approved waterward of the OHWL.

(d) The department may allow stockpiling of sand, gravel, and other coarse material waterward of the OHWL. Place this material within the designated work corridor. Remove all excavated or stockpiled material from the beach within seventy-two hours of construction.

(e) Backfill all trenches, depressions, or holes created during construction that are waterward of the OHWL before they are filled by tidal waters.

[Statutory Authority: RCW 77.04.012, 77.12.047, 77.55.021, 34.05.328, and 2019 c 290. WSR 20-11-019 (Order 20-75), § 220-660-370, filed 5/12/20, effective 6/12/20. Statutory Authority: RCW 77.04.012, 77.04.020, and 77.12.047. WSR 15-02-029 (Order 14-353), § 220-660-370, filed 12/30/14, effective 7/1/15.]