

Geological Report Guidelines for Shoreline Protective Structure Applications

Produced by the Coastal Processes and Hazards Working Group and Oregon Coastal Management Program staff (DOGAMI, DLCDC, and OPRD), this is a list of considerations to be included in geologic reports for oceanfront shoreline protective structures.

This list is a supplement to the applicable requirements of the Oregon Parks and Recreation Department as well as to local standards. It is meant to provide an additional resource for local government review and ordinance updates, OPRD Ocean Shore Program staff, property owners, and geologic consultants.

A. Project Need

1. Analysis of the types of hazards affecting the property
2. Estimated rate of erosion based on visual observations, aerial photo analysis, published reports, such as DOGAMI hazard risk zone studies, and DOGAMI beach monitoring data.
3. Description of the type of property, improvements, or structures that are threatened, and describe the nature of the threat.

B. Evaluation of Alternatives for Wave Attack

1. Description of preferred alternative.
2. Evaluation of hazard avoidance options (siting or relocation).
3. Evaluation of soft stabilization methods (foredune enhancement, beach nourishment, cobble berms).
4. Evaluation of hard stabilization (riprap, seawalls).
5. Evaluation of bio-engineered structures (clay burritos and vegetated terraces).
6. Description of alternatives that have been attempted prior to designation of the preferred alternative.

C. Evaluation of Alternatives for Mass Wasting

1. Vegetation management.
2. Drainage controls.

3. Slope regrading.
4. Reinforcing building structures.

D. Analysis of Impacts from Preferred Alternative

1. Potential for flank scour.
2. Potential toe scour.
3. Shoreline alignment impacts to adjoining properties and non-armored neighbors, including impacts to properties not eligible for shoreline protective structures.
4. Potential for the preferred alternative to cause rip embayments or prolong existing embayment patterns.
5. Reduction in sand supply caused by preferred alternative.
6. Quantify Narrowing or loss of beach area.
7. Impacts from expected maintenance of the project over the lifetime of the structure (include history of maintenance of similar projects nearby if possible and analysis of local sea level rise, and trends in littoral sand movement. Describe the expected maintenance methods that could occur.
8. Impacts to existing public beach access routes, and provisions to keep access route in a useable condition.
9. Impacts to sites of geologic interest, such as fossil beds or ancient forest remnants

Sources: Guidelines for the Preparation of Technical Reports to the Impacts of Coastal Erosion (Paul Komar, 1993)

Appraisal of Chronic Hazard Alleviation Techniques (Shoreland Solutions 1994)