

PUGET SOUND

National Estuary Program

RESIDENTIAL SHORELINE CONSTRUCTION COST ANALYSIS

Puget Sound Institute, Coastal Geologic Services, and Northern Economics are conducting a feasibility study for the development of a residential shoreline loan program to finance projects that would improve shoreline ecosystem health. One element of this work is a financial analysis to determine how much funding is needed to capitalize a self-sustaining revolving fund from which loans would be issued. A key input into the financial model is cost of target projects to estimate the likely range of loan amounts.

Methods

Coastal Geologic Services compiled and analyzed data on the total cost of four types of projects that would be eligible for loans through the proposed program: armor (bulkhead) removal, soft shore protection, inland home/cabin relocation, and home elevation.



Photo: Coastal Geologic Services

Information about projects implemented in Puget Sound counties between 2009 and 2019 was obtained from local Shore Friendly programs, property owners, public project sponsors, contractors, and consultants. Costs were broken down into design, permitting, and implementation for shoreline projects and construction, disposal, utilities, and foundation for relocation/elevation projects. To allow for direct comparison, costs were escalated to a base year of 2019 using the U.S. Army Corps of Engineers price index for bank stabilization projects.



Photo: DB Davis LLC

Results

- The cost of residential scale armor removal projects ranged from \$95 to \$983 per linear foot, averaging \$516.
- Soft shore protection projects ranged from \$135 to \$817 per linear foot, with an average of \$428.

Factors that affect the cost of shoreline projects included the type and size of bulkhead, wave exposure, and the shoretype. Considerable cost variability exists due to the diversity of Puget Sound properties and projects.

- Structure relocation projects averaged \$132,600. Of this total, moving costs averaged \$67,400 with foundation and utilities accounting for most of the remaining cost.
- Structure elevation data was scarce. Elevation alone averaged \$23,600, accounting for about 1/3 of total costs. Elevation of a "typical" home is estimated to cost \$60,000 - \$80,000.

ABOUT COASTAL GEOLOGIC SERVICES

Coastal Geologic Services provides analysis and design for applied coastal management and engineering focused on the unique shoreline environments of the Salish Sea.

FOR MORE INFORMATION

<http://coastalgeo.com/home/>

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