

NATURAL HAZARD CONSIDERATIONS FOR

PURCHASING COASTAL REAL ESTATE IN HAWAI‘I



A PRACTICAL GUIDE OF
COMMON QUESTIONS AND ANSWERS

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NATURAL HAZARD CONSIDERATIONS FOR

PURCHASING COASTAL REAL ESTATE IN HAWAII

A PRACTICAL GUIDE OF COMMON QUESTIONS AND ANSWERS

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in Hawai'i - A Practical Guide of
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Heavily developed beach, Lanikai,
O'ahu.

Back cover image by Craig Okumura.
Waikiki Beach, O'ahu.

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1 Foreword



Environmental Responsibility

Along with the numerous benefits of owning coastal property comes a responsibility to take care of the natural environment – a custom known in Hawaiian as *mālama`āina*.

Before buying coastal property, it is important to have an understanding of the potential risks and consequences of living on the ocean's edge. Hawai'i is reknown for its pleasant tropical climate; however the weather and ocean conditions are subject to dramatic changes that can pose various threats to coastal property.

This guide focuses on basic questions to consider as an investor in coastal real estate. Whether you are looking to buy a developed or an undeveloped lot, there are critical issues that should be examined and assessed before committing to a purchase. For additional sources of information, refer to the list at the end of this guide.

What natural hazards can affect coastal properties?

Hawai'i is subject to a suite of [coastal hazards](#) ranging from hurricanes to high surf, but not all hazards are created equal. The frequency of occurrence and extent of potential damage vary considerably from one type of hazard to the next. Some of these coastal hazards are less immediately noticeable but more prevalent in Hawai'i (e.g. chronic erosion), and some are less frequent but do have potential to be more destructive in a single event (e.g. tsunami). Individual investors must weigh their own needs with the varying and often multiplicative risks. Hurricanes don't happen very often, but could devastate a property whereas coastal erosion is generally less destructive in the short term but is something that a property owner must be more mindful of on a continual basis.

The bulk of this guide focuses on the issues surrounding coastal erosion, as this is the most common and widespread coastal hazard in Hawai'i. We begin, however, by defining additional hazards in Hawai'i and note where to go for more information on these present, but less common, coastal hazards.

Coastal hazards

- natural events that threaten lives, property, and the health of coastal environments.

Hawai'i's coastal properties are subject to a variety of coastal hazards that include:

1. High surf
2. Coastal and bluff erosion
3. Coastal flooding
4. Tsunamis
5. Hurricanes
6. Earthquakes
7. Lava flows
8. Subsidence

A **tsunami** may last for several hours and is capable of causing widespread destruction in low-lying coastal areas. It is important to investigate what areas historical tsunamis have impacted. Historical tsunami flooding information

Tsunami

- a series of often very destructive, extremely fast, long-period waves caused by the displacement of water, usually by earthquakes, landslides and/or volcanic eruptions.

can be identified in the Atlas of Natural Hazards in the Hawaiian Coastal Zone (see the Appendix, page 25 for more information). Maps that identify tsunami evacuation zones are found in the phone book.

Hurricane

- a weather pattern with a pronounced rotary circulation, with a constant wind speed of 74 miles per hour or more.

A **hurricane** has multiple components (storm surge, rain, and wind) that can cause severe damage to property and structures. Hurricane season in Hawai'i is June through November. Hurricane storm surge and flooding are most damaging to properties immediately fronting the ocean in the VE-Zone of the Federal Emergency Management Agency (FEMA) flood zone or in low-lying areas. Information on FEMA flood zones can be found at:

www.floodsmart.gov (click on *What's Your Flood Risk?* then on *Flood Zones Defined*).

Slumping

- when a slope or vertical bank fails due to erosion.

Cliff-front properties also face bluff failure and erosion hazards from

undercutting of the cliffs by waves, and **slumping** from absorption and release of groundwater.

Additional coastal hazards can be identified in the Atlas of Natural Hazards or see www.mothernature-hawaii.com.

Issues to consider when investing in coastal real estate:

1. What is the elevation of the property above sea level and what is the likelihood of flooding? Higher elevation decreases the susceptibility of the property to seasonal high surf and flooding.
2. What is the condition and behavior of the shoreline? Is it rocky, cliffed, or sandy? Is it stable, seasonally dynamic, or chronically eroding? Rocky shorelines tend to be the most stable.
3. Does the configuration of the lot and type of construction allow for relocation of dwellings if threatened by a coastal hazard?
4. What is the shoreline and development history of the property? Have attempts to control erosion been made in the past and were they successful?
5. Have there been any applications for shoreline protection structures? If so, have any been revoked or rejected? Are existing shoreline structures legal?
6. What is the coastal hazard vulnerability of the property?

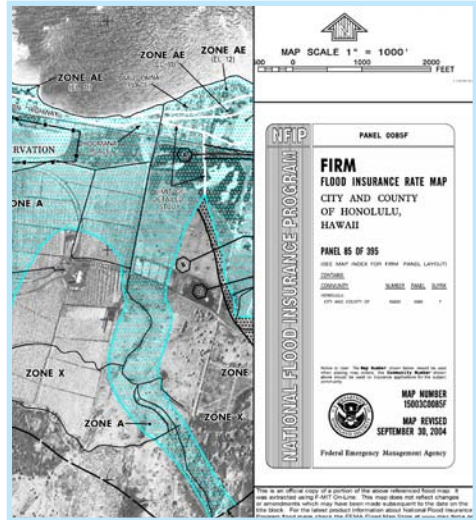


Figure 1. Example of a FEMA Flood Insurance Rate Maps (FIRM) illustrate flood zones in coastal areas. See page 25 of the Appendix on where to find more information on FIRMs.

A professional geologist or engineer can provide a coastal hazard assessment that addresses all of these questions.

What causes coastal erosion?

Coastal erosion is the most common and widespread coastal hazard affecting Hawaiian shorelines. Erosion rates in the state range up to several feet per year.

Coastal erosion often occurs over longer time frames than most coastal hazards, and can be observed and measured for better evaluation and prediction.

Coastal erosion

- the wearing away or removal of coastal lands, usually by waves, currents and/or wind. Sea-level rise and human impacts to sand availability are common causes. Dune areas undergoing coastal erosion provide an important source of sand for beaches.

Coastal erosion and **beach loss** are caused by a variety of factors including:

- Sea-level rise
- Seasonal wave changes
- Human impacts to sand supplies

Sea-level rise

Rates of sea-level rise (Figure 2) are projected to accelerate in coming decades, this may result in an increase in **chronic coastal erosion** rates.

Beach loss

- a volumetric loss of sand causing narrowing or disappearance of the beach.

Chronic coastal erosion

- long-term erosion or shoreline retreat usually resulting from a sand shortage due to human impacts, sea-level rise, and/or waves and currents.

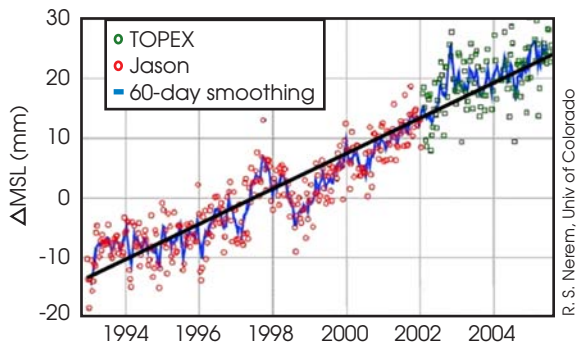
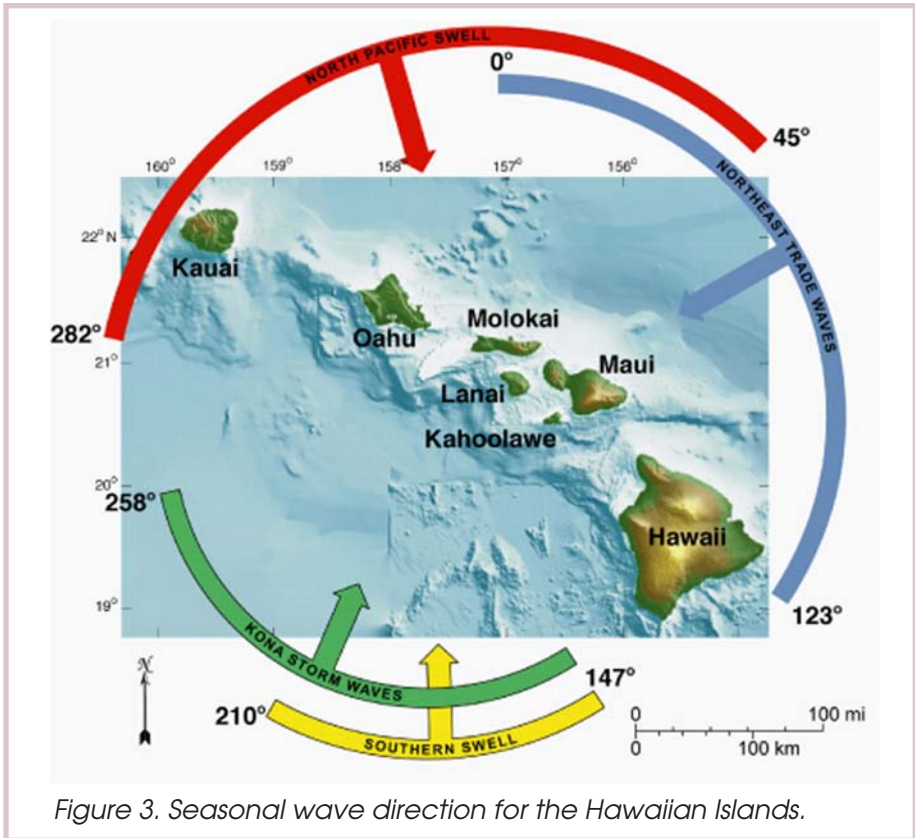


Figure 2. New satellite data suggests the global rate of sea-level rise is 2.9 ± 0.4 mm/yr.



Seasonal wave changes

The Hawaiian Islands are exposed to a variety of swell conditions and directions (Figure 3). This includes large (and sometimes damaging) seasonal surf from the north during the winter (October through March), southern swells in the summer (April through September), moderate trade wind swells from the east year-round, and occasional locally generated tropical storms.

Red - winter swells from the north.

Blue - year-round trade wind swells from the east.

Yellow - summer swells from the south.

Green - locally generated tropical storms.

Individual swell events can cause dramatic short-term erosion and have been known to erode large sandy beaches in a matter of hours. The beach may gradually

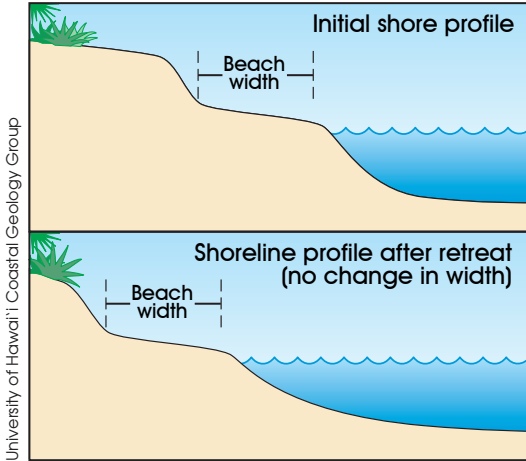


Figure 4. A beach undergoing net longterm retreat will maintain its natural width.

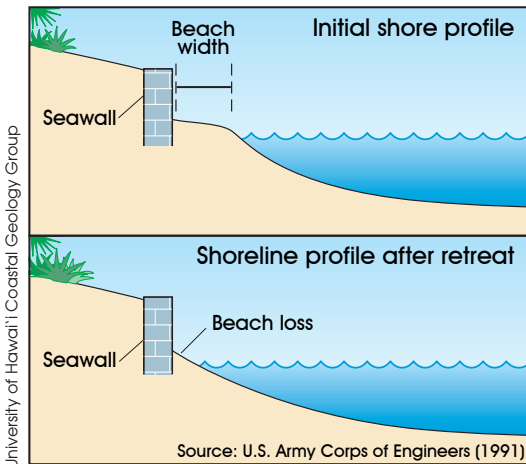


Figure 5. Beach loss eventually occurs in front of a seawall for a beach experiencing net longterm retreat.

recover under gentler wave conditions, or it may not recover until the seasonal wave pattern reverses which may take several months. Some beaches never fully recover from particularly severe erosion events.

Human impacts to sand supplies

Human impacts, including structures that interfere with natural sand movement patterns, can also lead to erosion. Dredging of channels in the reef can contribute to coastal erosion. Structures such as seawalls, revetments, and groins, are often built to prevent land from being lost to erosion (see page 14). However, they can be harmful to the beach by trapping sand and preventing it from being accessible to the beach (Figure 4 and

Figure 5). Shoreline protection structures may also accelerate erosion on neighboring properties.

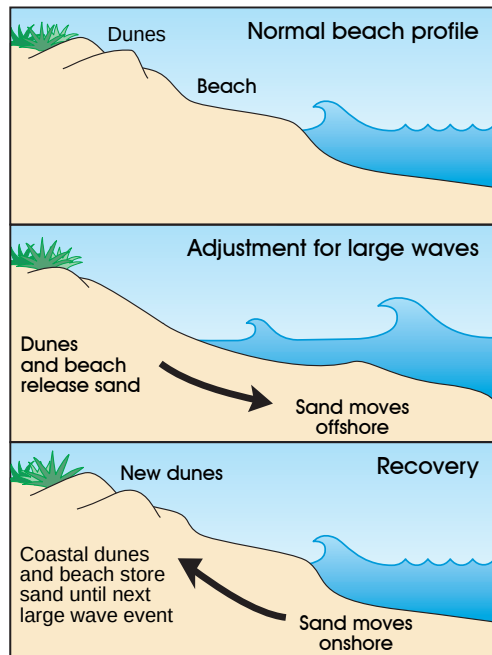
Coastal **dunes** play an important role in the beach system and serve as natural buffers to high waves, storms, and tsunamis and help to prevent coastal flooding. Vegetated dunes trap windblown sand, store excess sand, and create an elevated **berm** that may buffer property against erosion and other coastal hazards. Sand dunes also provide an emergency supply of sand to the beach when erosion occurs (Figure 6).

Dune

- ridge or mound of sand located immediately landward of the beach.

Berm

- a physical feature marked by an abrupt change in the slope of the beach. Can be used to describe a terrace formed by wave action, a mound, or accumulation of sand.



University of Hawai'i Coastal Geology Group

Figure 6. Large waves, which tend to occur seasonally in Hawai'i, cause a beach to temporarily change its profile.

Will I be informed about erosion hazards and erosion rates?

Not necessarily. If you are working with a licensed real estate agent, the agent has a duty to disclose material facts, which includes any documented coastal hazard history that they know or reasonably should know.

However, shoreline erosion and other coastal hazards are not always known or documented and may require investigation on the part of the buyer. Buyers should ask their realtor about the *Hawai'i Association of Realtors, Standard Oceanfront Property Addendum* or a similar document drafted by the realtor.

This document helps to identify any known encumbrances, shoreline boundaries, shoreline structure permits or coastal hazards. You can obtain more information from the Hawai'i Association of Realtors.

Some areas, including most of Maui's sandy shorelines, have had recently-published erosion hazard maps (Figure 7), while other areas may have outdated maps or no erosion data at all. There are plans to map shoreline history on O'ahu and Kaua'i in coming years. See the



Dolan Eversole

Appendix for additional information on erosion maps.

In cases where erosion has not been well documented, purchasers should research and evaluate coastal hazards. One method is to review previous shoreline surveys for the property on record with the local office of the State Department of Accounting and General Services (DAGS), Survey Division. Shoreline surveys may reveal the extent of erosion since the property was first surveyed. The surveys often include photographs. Additionally, looking at historical photographs (taken from the ground or from the air) and talking to neighbors can provide useful background on the erosion history.

For information on erosion rates, contact the county planning department where you plan to purchase or build. Some private companies may analyze shoreline hazards for a fee.

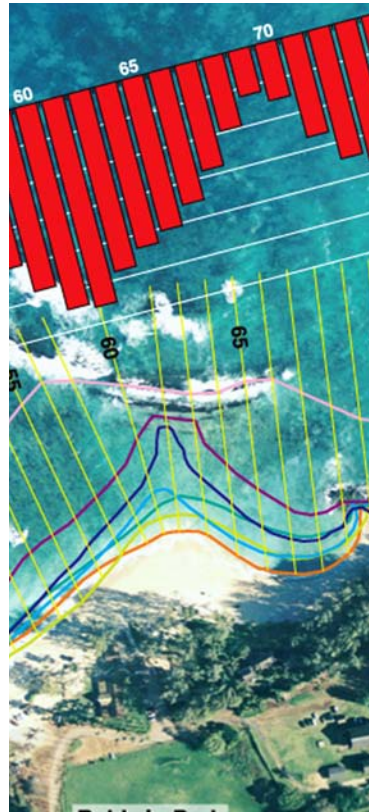


Figure 7. A close-up of an erosion hazard map. Red bars indicate Average Erosion Hazard Rates (feet/year). Colored lines parallel to existing shore indicate historical shorelines from the past century. Yellow lines perpendicular to shore are transect lines spaced 20 meters apart.

11 *Common Signs of a Problem*

What are some common signs of an erosion or coastal hazard problem?

Scarp

- a steep or near-vertical slope, often at the vegetation line, formed by the erosion of a dune or beach by wave attack.



Zoe Norcross-Nu'u

1. Eroding bluffs or **scarps** often show vegetation roots or recent debris at the base of a cliff. Moisture seeping out of a clay or dirt bank is also a sign of erosion potential. Notches or indentations at the base of a cliff, living or dead trees on the open beach can indicate undercutting by waves.
2. Historical shorelines (from maps and aerial photographs) that are located progressively more landward over time indicates the area is eroding.
3. Vertical banks, often at the seaward edge of vegetation, anywhere from one foot to several feet high; or vegetation, rocks or structures that are falling over.
4. Makeshift erosion control measures such as: discarded vegetation or other material placed along a bluff or scarp, non-engineered shoreline structures such as cement pads, rocks, sandbags, wood, newly placed sand (often distinguished by a different color or texture), etc.
5. Evidence that waves wash significantly more landward than the "normal" shoreline. This might include debris lines, damaged vegetation, and salt deposits during high surf (see previous section on seasonal surf).

If my coastal property becomes threatened by erosion, what are my options?

1. Do nothing. Allow the erosion to take place without interfering with the natural coastal processes. This may allow the beach to fluctuate in a natural state.
2. Plan a managed retreat from the eroding shoreline. In the long term this may be a cost-effective means of getting a structure out of harm's way. If space allows, a building may be moved landward on the same lot; otherwise it might be relocated to new property.
3. **Beach replenishment** and/or **dune restoration**. Bringing in sand is one of the simplest active measures for addressing beach erosion. A permit is required for sand placement (for either beach replenishment or dune restoration). Contact DLNR, Office of Conservation and Coastal Lands (OCCL) for details.
4. Placement of temporary erosion-control structures such as **geotextile bags** (Figure 8). Permits for temporary erosion control are only granted under emergency situations when a structure or public utility is immediately threatened.

Beach replenishment

- the technique of placing sand along the shoreline to widen the beach and enhance its capacity to protect inland areas from wave damage.

Dune restoration

- the use of sand to rebuild a dune that is damaged by erosion, development, or other human activity. Usually followed by replanting native coastal vegetation.

Geotextile bags

- large sand-filled tubes made of highly durable synthetic fabric, used for both temporary and long-term coastal erosion control projects.

Did You Know?

A permit is required for any work in or around the shoreline. Talk to your local officials to find out more.

Temporary erosion control may involve permits from both the DLNR and/or the local county planning department, and usually come with a condition that a long-term erosion mitigation plan must be submitted.

5. Construct a **seawall or revetment**. Permits for shoreline protection structures are difficult to obtain, and are considered a last-resort option for shoreline protection due to their potential to damage the beach and dune. It must be shown that all other alternatives have been tried or are no longer viable and that significant hardship will result before permits for a seawall may be granted.



Figure 8. Insufficient shoreline setbacks often lead to armoring eroding shorelines - here shown with temporary geotextile bags.

Shoreline protection structures

Usually refers to *seawalls*, *revetments*, *geotextile sandbags*, or *groins* used to stop the loss of land from erosion.

- *seawall*: a vertical or near vertical wall parallel to the ocean, most often built of concrete or grouted rocks.
- *revetment*: a sloping wall constructed from large, interlocking boulders not cemented together.
- *geotextile sandbags*: large sand-filled tubes made of highly durable synthetic fabric.
- *groin*: a wall, or rubble mound perpendicular to the shoreline, extending across the beach into the ocean designed to trap sand.

Obtaining permits for shoreline protection structures can be a considerable challenge and new shoreline structures should be viewed as a last resort. The County planning departments and the State DLNR each have specific requirements that must be met before consideration of an application can be made. Contact the DLNR-OCCL or your local planning office for more information.



Craig Okumura



Craig Okumura



Craig Okumura



Richard Nu'u

15 *Shoreline Setbacks*

If I am building a new house on oceanfront property, where should I build?

The **shoreline setback** rules are administered by the individual counties and thus differ from island to island. The setbacks may be arbitrary and based on average

lot depth, or more structured and based on erosion rates. It is advisable to build as far away from the shoreline as possible and try to develop on the highest elevation of the property (but not on the primary coastal dune).

Building codes in flood-prone areas require structures to be built to a minimum height above Base Flood Elevations (**BFEs**). These elevations are identified on Flood Insurance Rate Maps (**FIRMs**), which should be available at your county planning or public works department as well as the Army Corps of Engineers. Contact the Army Corps of Engineers for an official determination of the BFE's and Flood Zone for your property.

The required setback of your county does not guarantee a safe location, particularly when the setback is not

based on erosion rates. If no erosion rate exists for the property, it is advisable to check with a consultant and get a hazard assessment that includes a historical shoreline analysis. An advisable minimum setback is 70 times the annual erosion rate plus 40 feet.

Additional construction and development information is available in the *Hawaii Coastal Hazard Mitigation Guidebook* (page 24). The guidebook provides scientific and technically based standards for hazard mitigation.

Shoreline Setback

- the seaward boundary beyond which development may not take place.

BFE

- base height of a flood event (100-year) relative to sea level.

FIRM

- an official map of a community's special hazard areas and risk premium zones. Used to determine flood insurance rates.

Shoreline Certification

A certified **shoreline** survey is required for most building permits on coastal property and designates the seaward line from which shoreline setbacks are based. The certified shoreline also delineates the boundary between County and State jurisdictions; the County's jurisdiction extends landward of the certified shoreline while the State's jurisdiction lies seaward of the shoreline. Surveys are usually carried out by private surveyors contracted by the property owner. The certification is valid for 12 months and applications undergo review and certification by the State Surveyor and the Chairperson of the DLNR.

Shoreline

- a location represented by the highest annually recurring reach of the waves. This is sometimes represented by the vegetation line or by a line of debris during the season of high surf.

Applications are reviewed for accuracy with emphasis on shoreline features other than the vegetation line if it is suspected the vegetation has been artificially induced seaward. It is important to consider where the shoreline might be located when evaluating the lot layout for

construction purposes. The shoreline certification plays an important part in ensuring that new development is not located in a coastal hazard area, thus the survey should be conservative in order to help avoid future coastal hazards and storm damage.



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17 *Structure Design*

What building construction features help reduce or prevent storm damage?

Several features can prevent or substantially reduce the likelihood of damage to structures from severe storms or erosion. Pilings can raise the first floor above expected flood elevations and storm waves. Walls constructed between the pilings should be designed to break away when hit by waves to prevent damage to the elevated portion of the building. Load-bearing walls should be perpendicular to the shoreline.

Elevating a building to protect it from **storm surge** and floods increases its exposure to storm winds. The key to reducing storm wind damage lies in the quality of the

Storm surge

- a temporary rise in sea level associated with a storm's low barometric pressure and onshore winds.

building's design and construction. For new homes on the shoreline, consider employing a professional engineer to help ensure adequate structural design. When buying an existing home, an engineer or architect can help assess the structure's strengths and weaknesses, and suggest modifications to make the house more damage-resistant.

Sand dunes also provide protection during storms and high surf events. You can protect and enhance frontal dunes by keeping vehicles and people off these areas, and by maintaining the native coastal vegetation. Keep in mind that sand dunes help to protect against flooding, damage to structures, and short-term erosion caused by storms.



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Can I rebuild or repair my structure if it is damaged by a hurricane or other coastal storm?

This will depend upon the extent of the damage as per current regulations (May 2006). If a legal structure within the shoreline setback area is damaged, repairs valued at up to 50 percent of the replacement cost of that portion of the structure may be permitted. If a legal structure within the shoreline setback area is more seriously damaged, the structure will have to be reconstructed in accordance with the setback rules currently in effect.

Some structures are classified as “non-conforming” which means they are legally grandfathered since they were built before the rules prohibiting them were created. These structures also must conform to the current shoreline rules if severely damaged and in need of replacement or major repair.

Check with your county planning office to find out if a structure is non-conforming and what work is permissible to the structure. Most shoreline structures are privately owned and their maintenance is the responsibility of the property owner, not the State or County. Check with the DLNR and/or County Planning agency if you’re unsure of the ownership or legality of a shoreline structure.



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19 Insurance

Can I get insurance for damage resulting from erosion and flooding?

Flood

- raised water levels due to excessive rain and/or storm surge.

Flood zone

- Federal Emergency Management Administration (FEMA) mapped coastal areas subject to flooding by storm surge, tsunami and rain. Commonly mapped as 100 year storm event boundaries.

Possibly. You may be able to purchase a flood insurance policy which is usually separate from a standard homeowner's policy. The National Flood Insurance Program (NFIP) was established by Congress to make flood insurance available nationwide to eligible properties. Large discounts on premiums often are available for buildings constructed above minimum standards. For example, discounts may be available for buildings elevated on pilings or built higher than required to avoid storm-surge flooding. Check with your insurance company on their policy.

Is flood insurance mandatory for coastal property?

Federally insured lenders, including mortgage companies, banks, and savings and loan associations require flood insurance for the life of their lien if the property is in an identified flood zone. Failure to maintain coverage may permit the lender to declare the balance of the loan due and payable.

For information about flood insurance and discounts, contact your local planning or public works department, insurance agent, or the National Flood Insurance Program.

What are the limitations of flood insurance?

Federal flood insurance covers only structural damage – including damage from waves – caused by flooding. As a rule, damage caused by chronic, long-term erosion is not covered. Furthermore, a federally-backed flood insurance policy covers only damage to the insured structure. It does not cover damage to land caused by floods, waves or erosion or damage from other events, such as hurricane-related winds (Figure 9).



Figure 9. Damage and loss of land due to chronic erosion may not be covered under homeowners insurance.

The Garden Island newspaper

These same limitations may apply to privately underwritten insurance. Many privately underwritten homeowner policies cover wind damage and water damage caused by wind; e.g. wind damage to a roof resulting in leaks. However, because of the high risk in coastal areas, some private insurance companies are excluding coverage for wind damage.

Recent trends in insurance

In the wake of the heavily destructive 2005 Atlantic/Gulf Coast hurricane season, some insurance companies are cancelling or not issuing new coastal homeowners insurance policies along the US East Coast and Gulf Coast. In Florida alone, over 500,000 policies have recently been cancelled. Talk to your insurance agent about your options.

21 *Do's and Don'ts*

Do



Zoe Norcross-Nu'u

1. Do research the shoreline history. Get a coastal hazard assessment from a professional if you're not sure or have concerns about the erosion history.
2. Do determine if the land has experienced past marine flooding. Determine if all buildings meet BFE requirements.
3. Do locate all improvements well away from the shoreline to allow the beach room to migrate as well as minimize risks to coastal hazards.
4. Do gain an understanding of the local coastal processes and wave conditions, and how the beach changes seasonally.
5. Do investigate shoreline structures to confirm their legality. New homeowners assume responsibility for existing structures whether they are legal or not.
6. Do obtain a certified shoreline survey to confirm the shoreline position and check for shoreline encroachments (unpermitted structures on state land).
7. Do maintain the natural dune features and native plants around the shoreline area.
8. Do investigate alternative erosion management measures if necessary.

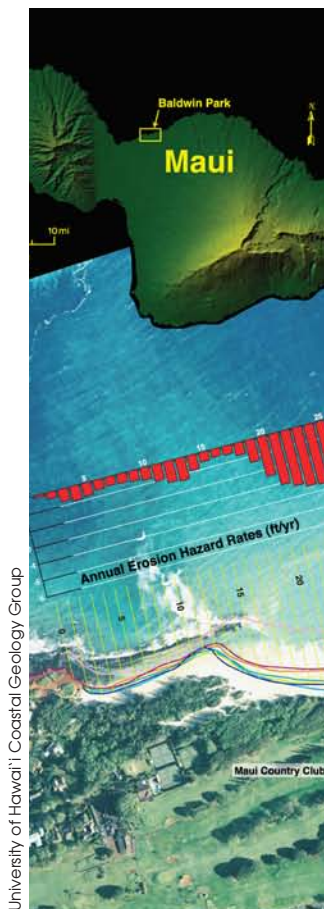
Don't

1. Don't landscape seaward of the natural vegetation line, or encourage vegetation to grow unnaturally seaward.
2. Don't build structures within a coastal high hazard area that are likely to be threatened by waves or erosion.
3. Don't alter, grade, trample on or reduce the height of the coastal dune.
4. Don't assume the shoreline is stable just because it looks wide.
5. Don't assume you will be granted an authorization for a shoreline structure just because the shoreline is eroding.
There are specific criteria that must be met in order to obtain permission for shoreline structures.



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APPENDIX



Erosion Rates

1. For the island of Maui, erosion rate maps exist for all sandy shorelines and can be downloaded at: www.co.maui.hi.us/departments/Planning/erosion.htm.
2. *O'ahu Shoreline Study, 1988. Part 1: Data on Beach Changes*, Prepared for City and County of Honolulu Dept of Land Utilization, Prepared by Sea Engineering, Inc. Check with the Hawai'i Coastal Zone Management Program (CZM) office for copies.
3. *Aerial Photographic Analysis of Coastal Erosion on the Islands of Kaua'i, Moloka'i, Lāna'i, Maui and Hawai'i. 1991.* Prepared for CZM; Prepared by Makai Ocean Engineering, Inc and Sea Engineering, Inc. Check with the CZM office for copies.

Other Resources for Consultants

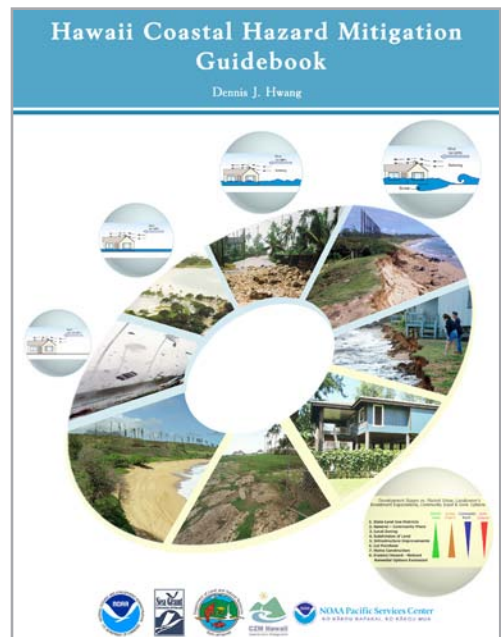
Look in your state phone book under Architects or Engineers-coastal, consulting, environmental or oceanographic.

Hawai'i Coastal Hazard Mitigation Guidebook

Designed for a wide and varied audience from planners and architects to homeowners and government agencies, the guidebook complements the Federal Emergency Management Agency's Coastal Construction Manual with a special emphasis on land use planning and siting. The purpose of the guidebook is to reduce the risk to coastal development by planning for natural hazards such as erosion, flooding, tsunamis and hurricanes.

www.soest.hawaii.edu/seagrant/communication/HCHMG/hchmg

To order a copy of the guidebook, contact the University of Hawai'i Sea Grant College Program
2525 Correa Road, HIG 208
Honolulu, HI 96822
Phone: 956-7410
Fax: 956-3014
email: uhsgcomm@hawaii.edu



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Information on the Web*

1. **Atlas of Natural Hazards in the Hawaiian Coastal Zone**
<http://pubs.usgs.gov/imap/i2761>
2. **Coastal Mapping**
<http://coastal.er.usgs.gov/hurricanes/mappingchange/scale.html>
3. **FEMA Coastal Construction Manual**
www.fema.gov/rebuild/mat/fema55.shtm
4. **FEMA Flood Insurance Rate Maps (FIRMs)**
www.msc.fema.gov
5. **Hawai'i Statewide Hazard Mitigation Forum**
www.mothernature-hawaii.com
6. **Kauai Shoreline Erosion Management Study**
www.hawaii.gov/dbedt/czm/czm_initiatives/initiatives.html
7. **Participant's Guide to the SMA Permit**
www.hawaii.gov/dbedt/czm/czm_initiatives/sma.html
8. **Sea Level Rise and Tides**
<http://tidesandcurrents.noaa.gov/index.shtml>
9. **Shoreline Setbacks (Maui)**
www.co.maui.hi.us/departments/Planning/czmp/ssa.htm
10. **Shoreline Setbacks (O'ahu)**
www.co.honolulu.hi.us/refs/roh/23.htm
11. **Tsunami - The Great Waves, June 2005**
www.hawaii.gov/dbedt/czm/czm_initiatives/initiatives.html
12. **University of Hawai'i Coastal Geology Group**
www.soest.hawaii.edu/coasts/index.html
13. **UH Ocean Atlas**
<http://radlab.soest.hawaii.edu/atlas>

*accurate as of May 2006

Additional Information:

Hawai'i Coastal Zone Management Program (CZM)

Phone: (808) 587-2846

www.state.hi.us/dbedt/czm

Department of Accounting and General Services (DAGS) Survey Division (O'ahu)

Phone: (808) 586-0380

www.hawaii.gov/dags/survey

Department of Land and Natural Resources Office of Conservation and Coastal Lands (DLNR-OCCL)

Phone: (808) 587-0377

www.hawaii.gov/dlnr/occl

U.S. Army Corps of Engineers (COE)

Phone: (808) 438-9258

www.pod.usace.army.mil

Department of Health, Clean Water Branch

Phone: (808) 586-4309

www.state.hi.us/doh/eh/cwb

Hawai'i Association of Realtors

Phone: (808) 733-7060

www.hawaiiirealtors.com

County Planning Offices:

City and County of Honolulu (O'ahu)

Phone: (808) 523-4131

www.honoluludpp.org

Hawai'i County (Hawai'i)

East Hawai'i: (808) 961-8288

West Hawai'i: (808) 327-3510

www.hawaii-county.com/directory/dir_plan.htm

Kaua'i County (Kaua'i)

Phone: (808) 241-6677

www.kauai.gov/Default.aspx?tabid=61

Maui County (Maui, Moloka'i, Lāna'i)

Phone: (808) 270-7735

www.co.maui.hi.us/departments/Planning

