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BILL 7

AN ORDINANCE ESTABLISHING FOR AN INTERIM PERIOD
SHORELINE SETBACKS GREATER THAN 40 FEET ON SPECIFIED BEACHES
OF THE CITY AND COUNTY OF HONOLULU

Statement for City Council
City and County of Honolulu
Public Hearing - March 14, 1990

By

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Bill No. 7 (1990) recognizes the need to preserve the natural shoreline, especially sandy beaches; to preserve public access along the shoreline; to reduce coastal flood hazards (from tsunamis, hurricanes, and storm waves); and to preserve open space along the shoreline. To accomplish these needs, the statute prohibits structures from being constructed within certain specified distances from the shoreline depending on natural historic oscillations of the shorelines as determined by the Oahu Shoreline Study.

Our statement on this bill does not represent an institutional position of the University of Hawaii.

We have reviewed Bill 7 relating to shoreline setbacks and the accompanying shoreline study materials. As noted in Section I of the bill and in the Oahu Shoreline Study, Part 2, the most serious threat to sand beach coastal resources is the development of seawalls and revetments as shore protective structures. These measures usually constitute the measure of last resort to protect houses and other structures unwisely constructed too close to the crest of a beach. In attempting to forestall natural processes of beach retreat, seawalls may protect the land mauka of their structure, but they generally lead to significant and permanent erosion of the sand seaward of their base. As waves hit a seawall, the energy is reflected down and back offshore creating turbulence and scourer at the base of the seawall. The eroded sand is put into suspension and is then carried

seaward with the reflected wave. The process very quickly eliminates any sand beach area seaward of the structure. Thus, on Oahu and elsewhere, the combination of the natural instability of beaches, the tendency to build too close to beach crests, and individuals' inclination towards property protection has resulted in the loss of miles of natural beach fronts. Consequently, both residents and visitors have been deprived of access to the shoreline.

Unfortunately, the 40-foot standard setback width specified in State law is quite insufficient to provide for the preservation of the natural shorelines on many beaches. Most sand beaches in Hawaii are subject to significant seasonal shifts. Some have in the net retreated, some have in the net advanced, and some have had a history of alternating long-term retreats and long-term advances. This bill is intended to replace the present 40-foot setbacks with setbacks farther inland where the history of beach changes indicates that the increases in setback distance are necessary to provide the desired natural shoreline preservation.

We find the rationale for the proposed expansion of the shoreline setbacks to be exceptionally well documented by incontrovertible historical evidence of beach erosion and accretion. Increases in shoreline setback distances are proposed only along sandy beaches and the proposed increases are based on probable changes in the position of the vegetation line along the top of each beach in the next 30 years, using the Markov process probability model. The 30 year period was reasonably selected as representative of the economic life of houses. If anything, the application of this model to determining the probability for shoreline migration may be conservative, particularly in those areas where multi-year cyclic trends are well established. However, the suggested increases in the shoreline setbacks will contribute significantly to the goal of managing shorelines by lessening the need for coastal structures to protect property and reduce the risk of life and property from tsunamis and storm surf.

The proposed one year interim period will permit evaluation of the effects of the shoreline setback extensions. In those situations where hardship to property owners results from the extended shoreline, variances from the shoreline setback limits may be granted on a case by case review. However, we note that shoreline instability is a well established fact, and any variance should be conditioned on meeting specific construction designs to minimize future sand loss from the beach and maximize safety of the structure under adverse storm wave and tsunami conditions without resort to coastal protective structures. For example a possible requirement for pole house construction might be considered so as to eliminate the siting of reflective concrete foundations in the dynamic coastal area where they can cause beach erosion.