

A Waikīkī Beach Management District

*Proposal for the Development of a Beach Management District and
a Beach Management Plan for Waikīkī*



FROM:

University of Hawai‘i Sea Grant College Program

&

Waikīkī Improvement Association

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ABSTRACT

An overall trend of natural chronic beach erosion combined with the negative effects of past engineering efforts has resulted in beach narrowing and, in some cases, total beach loss in Waikīkī. This deteriorating situation continues with no clear plan or policy to address it. The University of Hawai‘i Sea Grant College Program (UH Sea Grant) in partnership with the Waikīkī Improvement Association (WIA) has identified strategies for the creation of a Waikīkī Beach Management District for the purpose of funding Waikīkī Beach management and the development and implementation of a Beach Management Plan for Waikīkī. For the purposes of this project, we define Waikīkī Beach as the beaches and near shore coastal zone extending from Kaimana Beach (Natatorium) through and including Fort DeRussy Beach. The primary purpose of such a management plan is to identify, assess and prioritize beach management projects and policies in Waikīkī for future beach maintenance and to facilitate potential funding sources and partnerships for these projects. A critical implementation component identified in this proposal is for the creation of a project manager/outreach coordinator position to support and facilitate the implementation of the plan goals and objectives.

PROJECT GOALS AND OBJECTIVES

The Waikīkī Beach Management District (WBMD) is a private sector initiative to manage and improve Waikīkī Beach and to partner with all branches of government with services financed by a self-imposed and self-governed assessment. The first objective of the WBMD is to develop a Waikīkī Beach management plan.

The goal of a Waikīkī Beach management plan is to ensure that the plan reflects the vision and priorities of the stakeholders as well as incorporates and utilizes innovative coastal, scientific, engineering and practical knowledge as it applies to the challenges of beach management at Waikīkī Beach. The plan should balance protection and improvement of coastal resources with the unique economic, cultural, and historical concerns for Waikīkī. The plan should identify long and short-term beach maintenance implementation strategies and may serve as a vehicle for viable pilot projects - providing a template for improved management in other coastal areas in Hawai‘i and throughout the Pacific. The plan will include recommendations for prioritization of beach maintenance projects based on stakeholder vision, needs, and available funding. The plan will ultimately be implemented through partnerships with local regulatory authorities and stakeholders with coordination assistance from an outreach coordinator. Advocacy for new government rules or policy changes is not a primary goal of this plan. However, identification of issues negatively impacting Waikīkī Beach and recommendations for holistic, sustainable solutions are always desirable. A Waikīkī Beach Management District will be established to fund the Waikīkī Beach management plan and participate in the funding of current and future projects.

The Waikīkī Beach Management Plan includes several primary objectives:

- Facilitate stakeholder and government networks and partnerships for long-term cooperative and sustainable management of the beach resources at Waikīkī.
- Support the mission and goals of relevant key stakeholders including the Department of Land and Natural Resources, the Waikīkī Improvement Association and the City and County of Honolulu

as it relates to beach management in Waikīkī.

- Identify key beach management issues for the natural, economic, cultural, and recreational resources through scientific data, as well as stakeholder and community engagement.
- Inventory and assess past beach management and coastal engineering efforts, including an analysis of lessons-learned, which may be applied in improving future beach management.
- Summarize and utilize the latest scientific and engineering data on coastal processes at Waikīkī toward improved beach management practices.
- Identify and evaluate potential management and engineering strategies to correct, enhance, and maintain the littoral system of Waikīkī.
- Assess advantages and disadvantages of potential management and engineering strategies as related to protecting and improving the cultural, socio-economic, recreational, historical, and natural resources of Waikīkī Beach.
- Educate Waikīkī stakeholders and community members on beach management strategies.
- Expand the understanding of the potential impacts of climate change on Waikīkī Beach, including the threat of increased beach erosion with sea-level rise.

EXPECTED MANAGEMENT PLAN OUTCOMES AND IMPACTS

- Improved stakeholder and community understanding of coastal dynamics, coastal hazards relating to coastal erosion and sea-level rise, and beach management options in Waikīkī.
- Improved ability to develop **and implement** long and short-term beach management strategies to maintain and improve the beach systems in Waikīkī.
- Improved coordination, collaboration, and partnerships between public and private stakeholders with a shared interest in improved management of Waikīkī beaches.
- GIS data products, maps, reports, and recommendations to be utilized to support planning for sea-level rise, beach conservation efforts, and coastal resource planning.
- Transferable methodology for beach management for application in Hawai'i.

INTRODUCTION AND BACKGROUND

Waikīkī Beach is a globally recognized icon of Hawai‘i and is the state’s largest tourist destination. Waikīkī generates approximately 42% of the state’s visitor industry revenue and is responsible for 8% (\$5 billion) of the Gross State Product¹. Beaches are a primary attraction for visitors to Waikīkī. It has been estimated that Waikīkī Beach accounts for several billion in annual income for the local economy². However, a recent survey found that 12% of visitors would not return to Waikīkī due, in part, to limited beach area and resulting overcrowding². Waikīkī Beach also has tremendous cultural significance as a former playground of Hawaiian royalty and the birthplace of the sport and culture of surfing. The beaches and myriad of world-renowned surf breaks and reef ecosystem located offshore are valuable natural resources that support the culture and lifestyle of Hawai‘i, and the idyllic image of Waikīkī.

A variety of factors are contributing to beach narrowing along the Waikīkī shoreline. In natural settings, beaches are highly ephemeral environments, continuously evolving with changing waves, tides, currents, sediment supply, and sea level. Waikīkī is a highly developed urban beach with a long history of coastal engineering projects including beach nourishment, and shoreline structures such as groins and seawalls (Figure 1). Hardened shoreline structures dominate Waikīkī’s beach dynamics by altering sediment transport dynamics, thereby influencing beach location and width. Historical sand hauling from the beach and dredging/mining of the reef in Waikīkī during the early 20th century also significantly altered coastal dynamics in the region. An overall trend of natural chronic beach erosion combined with the negative effects of past engineering efforts has resulted in beach narrowing and, in some cases, total beach loss in some areas along Waikīkī. Therefore, in order to better protect and manage the beach resources in Waikīkī it is important to fully understand the cumulative effects of the shoreline structures, human activities, and coastal processes (natural and human-induced) that control the movement of sand in the littoral system.

The beach system at Waikīkī has been studied in great detail^{3,4,5}. Numerous engineering projects have been proposed to improve the beach resources at Waikīkī^{6,7}. None however fit into a larger holistic plan for all of Waikīkī. Without an overarching management plan, past engineering and beach maintenance projects have consisted of independent and often reactionary projects with little or no consideration of how the project ties in with other needs and plans in Waikīkī. A comprehensive beach management plan would help to assess the disparate science and engineering information on Waikīkī, and to provide recommendations toward prioritizing beach management projects at Waikīkī.

¹ <http://www.waikikibid.org/>

² Waikīkī Improvement Association (2008) *Economic Impact Analysis of the Potential Erosion of Waikīkī Beach, Final Report*.

³ Miller, T. L. and Fletcher, C.H. (2003) *Waikiki: Historical Analysis of an Engineered Shoreline*. Journal of Coastal Research. V.19.4.

⁴ Wiegel, R.L. (2008) *Waikiki Beach, Oahu, Hawai‘i : History of its Transformation from a Natural to an Urban Shore*. Shore & Beach, V.76-2.

⁵ <http://www.soest.Hawaii.edu/coasts/erosion/oahu/>

⁶ Noda (1991) *Coastal Processes and Conceptual Design Considerations for Waikiki Beach Improvements*. Waikiki Beach Improvement Project. Prepared for the State of Hawaii Dept. of Transportation, Harbors Div. Report No. EKN-121-R-5-1.

⁷ Bodge, K.R. (2000) *Independent Evaluation of Study of Proposed Kuhio Beach Improvements*. Prepared for State of Hawaii Dept of Land and Natural Resources, Land Div.



Figure 1: Waikiki Littoral Cells. (Miller and Fletcher, 2003, *Waikiki Historical Analysis of an Engineered Shoreline*)

THE PROBLEM

Waikiki Beach is a highly engineered urban shoreline with the modern configuration largely the result of past engineering efforts (e.g., groins, seawall, and sand fill) intended to widen the beach⁸. Due to ongoing beach erosion, lack of coordinated management, and lack of capital investment, many sections of Waikiki Beach are substantially narrowed or completely lost to erosion (Appendix 1). Beach loss results in a variety of negative economic, social, cultural, and environmental impacts. These impacts highlight the need for sustained long-term capital investment and comprehensive beach management in Waikiki Beach to maintain its unique economic, social, cultural, recreational, environmental, and historical qualities. Waikiki Beach presents a wide range of management challenges, including:

- Lack of well-coordinated beach management and a local or regional beach management plan.

⁸ Miller, T. L. and Fletcher, C.H. (2003) *Waikiki: Historical Analysis of an Engineered Shoreline*. Journal of Coastal Research. V.19.4..

- Disparate and occasionally conflicting media and environmental reports and proposed engineering solutions related to beach processes and management at Waikīkī.
- Diverse Waikīkī stakeholders with sometimes-divergent perspectives and priorities.
- Lack of clear understanding and comparative environmental and economic impacts of various beach management, engineering strategies, and coastal zone management policies.
- Insufficient dedicated resources (personnel and funding) to support ongoing beach improvements and maintenance on a planned schedule.

Historical shoreline studies by the University of Hawai‘i⁹ have revealed that the distribution of alongshore shoreline change trends in Waikīkī is largely related to the location of groins and other shoreline structures. These shore-perpendicular structures interrupt the natural long-shore sediment transport, typically resulting in beach accretion against the updrift side of a structure and erosion at the downdrift



FIGURE 2. EXAMPLES OF BEACH EROSION AND STRUCTURAL FAILURE IN WAIKĪKĪ.

⁹ <http://www.soest.Hawai'i.edu/coasts/erosion/>

side. Due largely to localized effects of shoreline structures, beaches have been lost to erosion at the Diamond Head (east) end of Kaimana Beach, on the Ewa (west) side of the Natatorium, and at the Diamond Head end of Gray's Beach fronting the Sheraton Waikīkī (Figure 2). In addition to unintended negative impacts to coastal sediment transport processes, many of the shoreline structures in Waikīkī are not engineered to modern standards and are in threat of failure¹⁰.

THE UNIQUE BEACH MANAGEMENT SETTING AT WAIKĪKĪ

Waikīkī Beach consists of seven littoral cells¹¹ that extend from Kaimana Beach to Fort DeRussy, the boundaries of which are largely defined by groins and other artificial structures (Figures 1 & 2). The littoral cells represent beach management sub-zones within the larger Waikīkī Beach area. Each cell has unique features that control sediment transport and beach dynamics, and the feasibility of various beach management strategies varies from cell to cell. One of the benefits of a cell-based system is that beach maintenance work may be scheduled or phased over time, and does not need to address the entire stretch of Waikīkī in one massive project. However, it should be recognized that larger projects are generally more cost effective due to the economies of scale to be gained, especially with respect to offshore sand reclamation. These littoral cells are not wholly independent, therefore it is important to understand the cumulative effects of sand placement and infrastructure improvements along all of Waikīkī Beach, within a comprehensive planning framework as well as a cell based one. The timing and funding of beach improvement projects will depend largely on the prioritization of beach maintenance activities in Waikīkī.

PROPOSED MANAGEMENT OPTIONS

Waikīkī Beach Management Plan, Project Manager

In the short-term, we propose developing a dedicated funding source to support the development of a beach management plan and a project manager to oversee the plan development and stakeholder outreach. The project manager will develop and conduct related management plan outreach and education services for the Waikīkī Beach community and stakeholder groups. The management plan may be developed by an independent consultant with the project manager overseeing the stakeholder engagement, outreach, and plan oversight. This position should work in close coordination with a variety of stakeholders including the Department of Land and Natural Resources (DLNR), which is primarily responsible for beach management in Waikīkī. One of the primary roles of the project manager would be to ensure community engagement and education related to the development of the management plan priorities.

Waikīkī Beach Management Plan Coordinator

In the longer-term, a Waikīkī Beach management coordinator position will serve to implement the plan goals and facilitate the plan's recommendations. The coordinator would function as a catalyst for

¹⁰ The Royal Hawaiian Groin, a critical terminal groin and one of the more essential shoreline stabilizing structures in Waikīkī, in 2012 was showing severe signs of toe failure and potential collapse. This necessitated emergency sandbag repairs by the state in December, 2012. This groin was built in 1927 without modern engineering considerations for beach dynamics or impacts on recreational resources - representative of most structures in Waikīkī.

¹¹ A *littoral cell* is a section of coast that is isolated by features that prohibit the transport of sediment to adjacent sections of coast.

improvements and advancements in Waikīkī in areas of interest to both the University and the Waikīkī Improvement Association such as coastal hazard mitigation, beach management and coastal policy. This effort would enhance ongoing efforts at the University of Hawai‘i to develop academic programs with immediate application and relevance to the communities it serves. Examples of this new structure are represented by the creation of a variety of UH Sea Grant interdisciplinary Centers of Excellence to address emerging issues related to building and community design, sustainable coastal tourism, hazard resiliency and climate change. It is envisioned the successful role of the outreach coordinator could translate well into others areas of interest to the WIA, the state and the local stakeholders. Upon successful implementation of the Waikīkī Beach Management Plan, the role of the outreach coordinator may serve as a critical link between the University of Hawai‘i and Waikīkī stakeholders and serve as a cornerstone of comprehensive and sustainable management of Waikīkī’s beach resources (Table 1). The Waikīkī Beach management coordinator will need to work closely with public, private, and government stakeholders to develop implementation plans and facilitate the priority recommendations of the Waikīkī Beach Management Plan as well as anticipate and respond to beach management concerns as they arise.

Table 1. Summary of Waikīkī Beach Management Plan Roles and Timelines

Position	Role(s)	Project Timeline
<i>Project Manager</i>	<ul style="list-style-type: none"> • Oversee management plan development. • Stakeholder engagement for management plan priorities. • Community education and outreach for plan. 	Serves during Plan development (Years 1 & 2)
<i>Outreach Coordinator</i>	<ul style="list-style-type: none"> • Develop beach management implementation plans. • Coordinate regulatory agencies for beach management projects and develop project partnerships. • Develop and support outreach products and stakeholder engagement for management plan projects. • Serve as a stakeholder liaison for Waikīkī in areas of interest to both the University and the WIA. • Summarize and utilize the latest scientific and engineering data on coastal processes in Waikīkī targeting improved beach management practices. • Expand the understanding of the potential impacts of climate change on Waikīkī Beach, including the threat of increased beach erosion with sea level rise. 	Serves after Plan completion (Years 3+)

In support of the beach management plan, we recommend the transition/creation of an outreach coordinator position after completion of the management plan. The coordinator will work in close collaboration with local and regional stakeholders and facilitate the priority projects identified by the management plan. The scope of services for this position may include:

- Facilitate stakeholder and government networks and partnerships for long-term cooperative and sustainable management of the beaches at Waikīkī.
- Development of Beach Management Plan implementation strategies for Waikīkī drawing heavily on lessons learned from previous studies and projects at Waikīkī.

- Coordinate and advise contractors and stakeholders in preparing permit applications and planning for beach management and improvement projects.
- Lead targeted community outreach and education efforts in cooperation with stakeholders about beach management issues and projects at Waikīkī and identify/address stakeholder and community concerns.
- Provide general outreach and education services related to coastal management, coastal hazards, coastal ecosystems, beach history, and beach management at Waikīkī.
- Assist in developing agreements, such as memorandums of understanding (MOUs), between stakeholder groups and regulatory agencies to facilitate beach management projects.
- Coordinate and assist in implementing beach management projects at Waikīkī following the beach management plan.

Why Now?

Strong interest has been expressed by government and the private sector to develop immediate and long-term options for beach management in Waikīkī. Here we identify potential opportunities to leverage existing cooperative stakeholder relationships, while drawing from experience and lessons learned with the recently completed 2012 Waikīkī Beach Maintenance Project¹². The 2012 project was successful in offshore recovery and placement of approximately 27,000 yd³ of sand along Waikīkī Beach between Kūhiō and the Royal Hawaiian beach, resulting in an average increase in beach width of 37 feet. The 2012 Waikīkī Beach Maintenance Project succeeded largely through public-private partnerships involving Waikīkī beachfront hotels, DLNR, UH Sea Grant, and other stakeholders. These positive working relationships should be sustained to address the ongoing maintenance needs of the greater Waikīkī Beach area. The local visitor economy is undergoing a strong recovery with record setting occupancy and revenue in 2012-13 that is expected to continue into 2014. It is vital that Waikīkī continues to improve access to beach recreation for the expected increase in visitors.

Why Partner with UH Sea Grant?

Founded in 1968, UH Sea Grant supports an innovative program of research, education, and extension services directed toward the improved understanding and stewardship of coastal and marine resources of the State of Hawai‘i, Pacific region, and nation. Major focus areas of the UH Sea Grant Strategic Plan: *Healthy Coastal Ecosystems, Sustainable Coastal Development, Hazard Resilience in Coastal Communities, and Sustainable Coastal Tourism*; are closely aligned with the management needs of Waikīkī Beach. UH Sea Grant is working to address community needs in Hawai‘i related to these focus areas through support and participation in scientific research, and extension and outreach activities. UH Sea Grant extension agents play a vital role in providing local stakeholders throughout Hawai‘i with the resources necessary in making informed plans and decisions related to improved coastal zone management (*e.g.*, erosion management alternatives) and coastal hazard resiliency.

¹² The DLNR Office of Conservation and Coastal Lands is preparing a paper to document the experiences and lessons learned through the 2012 project, including an evaluation of the management and outreach aspects of the project. Sea Engineering, Inc. is preparing a second paper focusing on the technical aspects of the beach nourishment project.

UH Sea Grant provided vital scientific extension and outreach support to the recent (2012) Waikīkī Beach Maintenance Project and 2007 Kūhiō Beach Maintenance Demonstration Project (Figure 3). UH Sea Grant is also involved in the development of plans for future management efforts in Waikīkī with local stakeholder groups, including the proposed Gray’s Beach restoration, proposed sand back-passing at Fort DeRussy, and beach improvements in the Kapi‘olani Park area. It is important the Waikīkī Beach Management Plan incorporates lessons learned from these previous projects and leverage existing cooperative relationships with Waikīkī Beach stakeholder groups.



Figure 3: Beach nourishment at Kūhiō Beach, 2012

MANAGEMENT PLAN OF ACTION

The impacts of chronic beach loss along Waikīkī Beach clearly illustrate the need for comprehensive beach management. It is essential that beach management strategies reflect the current state of coastal scientific and engineering knowledge and are designed to address the specific needs of each littoral cell along Waikīkī Beach. To achieve this goal, we recommend the development of a beach management plan for Waikīkī, to balance protection and improvement of beach resources with the economic, social, cultural, recreational, environmental, and historical aspects of Waikīkī Beach. The development of a beach management plan for Waikīkī could involve a phased methodology including:

Phase 1: Needs Assessment

The purpose of the *needs assessment* phase is to evaluate the management needs of each littoral cell. This will include: identification of the issues and concerns related to natural, economic, cultural, and recreational resources at Waikīkī Beach through scientific data and stakeholder engagement; a comprehensive review of past projects and proposals for beach nourishment and shoreline protection;

review and discussion of relevant legal, planning, regulatory, and permitting issues; and data collection to establish current baseline conditions.

Phase 2: Alternatives Analysis

The purpose of the *alternatives analysis* phase is to identify and evaluate potential beach management strategies for each littoral cell including but not limited to beach nourishment, sand back-passing, and repairs and improvements to shoreline structures. Phase 2 will also include an assessment of the advantages and disadvantages of potential beach management strategies at Waikīkī, drawing heavily from experience and lessons learned in past beach management and coastal engineering efforts at Waikīkī.

Phase 3: Plan Development

The purpose of the *plan development* phase is to compile the findings of the needs assessment and alternatives analysis into a comprehensive beach management plan that will serve as a “living” guidance document for beach management in Waikīkī. The plan will draw heavily upon input from key stakeholders and will include sections focusing on the history and evolution of Waikīkī Beach, coastal processes and littoral dynamics in Waikīkī, coastal engineering solutions for beach management, and recommendations for beach management projects in Waikīkī.

Phase 4: Implementation

The purpose of the *implementation* phase is to take the necessary steps to bring the plan to action. The proposed Waikīkī Beach management outreach coordinator will work closely with local stakeholders and state resources agencies, through this phase. The Waikīkī Beach management outreach coordinator could facilitate implementation of beach management projects by initiating the planning process for selected projects; presenting the overall beach management plan and individual beach management project plans to stakeholders to address concerns and gain political and community support for implementation; coordinating funding sources to support the recommendations set forth in the plan; assisting with applications to regulatory agencies in seeking authorization for beach management projects; and assisting with oversight and management of beach improvement projects.

Stakeholder Engagement

Stakeholder engagement will be a recurring theme throughout each of the four project phases. The purpose will be to identify stakeholder concerns, gather feedback on potential beach management strategies and alternatives, develop collaborative partnerships and agreements, and build stakeholder consensus. Interviews, focus group meetings, and workshops will be held with key stakeholders in the public sector, private sector, and the Waikīkī community to identify information needs, concerns, and support for various beach management strategies. A series of public meetings will also provide opportunities to educate stakeholders and the general public with topics to include the history and evolution of Waikīkī Beach, coastal and beach processes in Waikīkī’s littoral cells, historical and modern approaches to beach management, and coastal hazards (including sea level rise).

BEACH MANAGEMENT PLAN DELIVERABLES

The following deliverables may be developed as part of the Plan:

1. Summary of the current scientific understanding of coastal processes at Waikīkī Beach;
2. Inventory and summary of past beach management efforts, including lessons learned;

3. Initial assessment of potential impacts of beach management options on environmental and recreational (e.g., surfing) resources at Waikīkī;
4. Preliminary cost vs. benefit analysis of select beach management strategies including a review of existing information on potential sources of sand for nourishment of Waikīkī Beach;
5. Inventory of coastal armoring structures status with summary description structure history;
6. Summary of stakeholder and community outreach program efforts and outcomes;
7. Recommendations for improved collaboration among stakeholders and the community with the shared goal of maintaining and improving beach resources at Waikīkī;
8. Identification and discussion of existing proposals for enhancement and engineering of beach areas at Waikīkī (e.g., Gray’s Beach and Natatorium) and possible relationships to management of existing beach resources;
9. Recommendations for future long- and short-term beach management strategies to maintain and improve the beach systems at Waikīkī;
10. Estimates of recurrence intervals for beach maintenance activities;
11. Identification of regulatory challenges and recommendations for implementation of beach management strategies;
12. Specific implementation strategies for priority beach management actions toward accomplishing the project goals and objectives;
13. Recommendations for new or revised rules or policies for beach management at Waikīkī.
14. A set of digital GIS-based data and mapping products to support beach management planning. Data and maps will be compatible with existing state and county GIS databases for eventual implementation into land use decision-making. The GIS products will include:
 - a. Existing infrastructure including existing shoreline structures, beach parks, roadways, and TMK boundaries.
 - b. Common beach place names and surf spots within the project reach.
 - c. Seaward property boundaries for all oceanfront parcels with reference to the 1928 Waikīkī Beach agreement(s).
 - d. Most recent certified shoreline (HRS 205A-1).
 - e. Historical low water mark shoreline positions (Beach Toe Position) from the UH Coastal Geology Group coastal erosion maps.
 - f. Map of beach sub-regions showing defining boundaries.

NEXT STEPS

Creation of a Waikīkī Beach Management District is the critical first step. The District would be made-up of all of the commercial property in Waikīkī and would cover Waikīkī Beach from Kaimana Beach to the Ala Wai Boat Harbor. The district would hire a coordinator and engage consulting services to develop the Waikīkī Beach Management Plan. Setting up the district in the same fashion as the current Waikīkī Business Improvement District Association requires a City and County of Honolulu ordinance establishing the district. The initial term is for five years which is automatically renewed unless an ordinance of termination is adopted. The proposal would include a list of the parcels of land to be assessed within the district by tax key number, the general boundaries of the district with a map, the supplemental services and improvements to be provided by the district and the total annual amount proposed to be expended for the supplemental services and improvements in the first operating year. The first drafts of these items are attached to this report. The proposal would also state rate and method of apportionment pursuant to which the first year's special assessment. The ordinance would need to go through three readings at the city council and be approved by the mayor, approximately a four to six month process.

The first task of the Waikīkī Beach Management District would be determining the Waikīkī Beach management plan. An additional necessary immediate need is to partner with The State of Hawai'i Department of Land and Natural Resources (DLNR) to replace the Royal Hawaiian Groin. The Royal Hawaiian Groin is failing and its integrity is vital to retaining the sandy beach from the Royal Hawaiian Hotel to the Kūhiō Beach Basin. (See Attached) The plan will provide a clear management strategy and pathway to improve the quality and sustainability of the public beach resources along Waikīkī Beach. Initially, the project manager will identify and assess issues and needs directly related to maintenance and improvement of the beach resources at Waikīkī. Improved, holistic beach management at Waikīkī will entail development and implementation of a dynamic and ongoing community planning process initially through the project manager then the outreach coordinator.

Here we provide a preliminary scope of work, timeline, and budget for the creation of a beach management plan and project manager position for contracting purposes. Once the costs, timeframe, and scope are evaluated and agreed to by key stakeholders, partnerships and potential contractors can be evaluated to conduct the work. It is important that potential partners and key stakeholder be identified and briefed early in the project development process (Appendix 2. Potential Project Partners and Stakeholders).

The Waikīkī Improvement Association Beach Committee and Executive Committee recommendation is that the Waikiki Improvement Association Board of Directors authorizes the staff to take the necessary action to create a Waikīkī Beach Management District. Further that the district include all of the commercial properties in Waikīkī land and improvements for the purpose of raising approximately \$600,000. (see attached budget) The initial objectives to set-up the district, hire a coordinator prepare a beach management plan and cost share with the State of Hawai'i the Royal Hawaiian groin.

WAIKIKI BEACH MAINTENANCE BUDGET

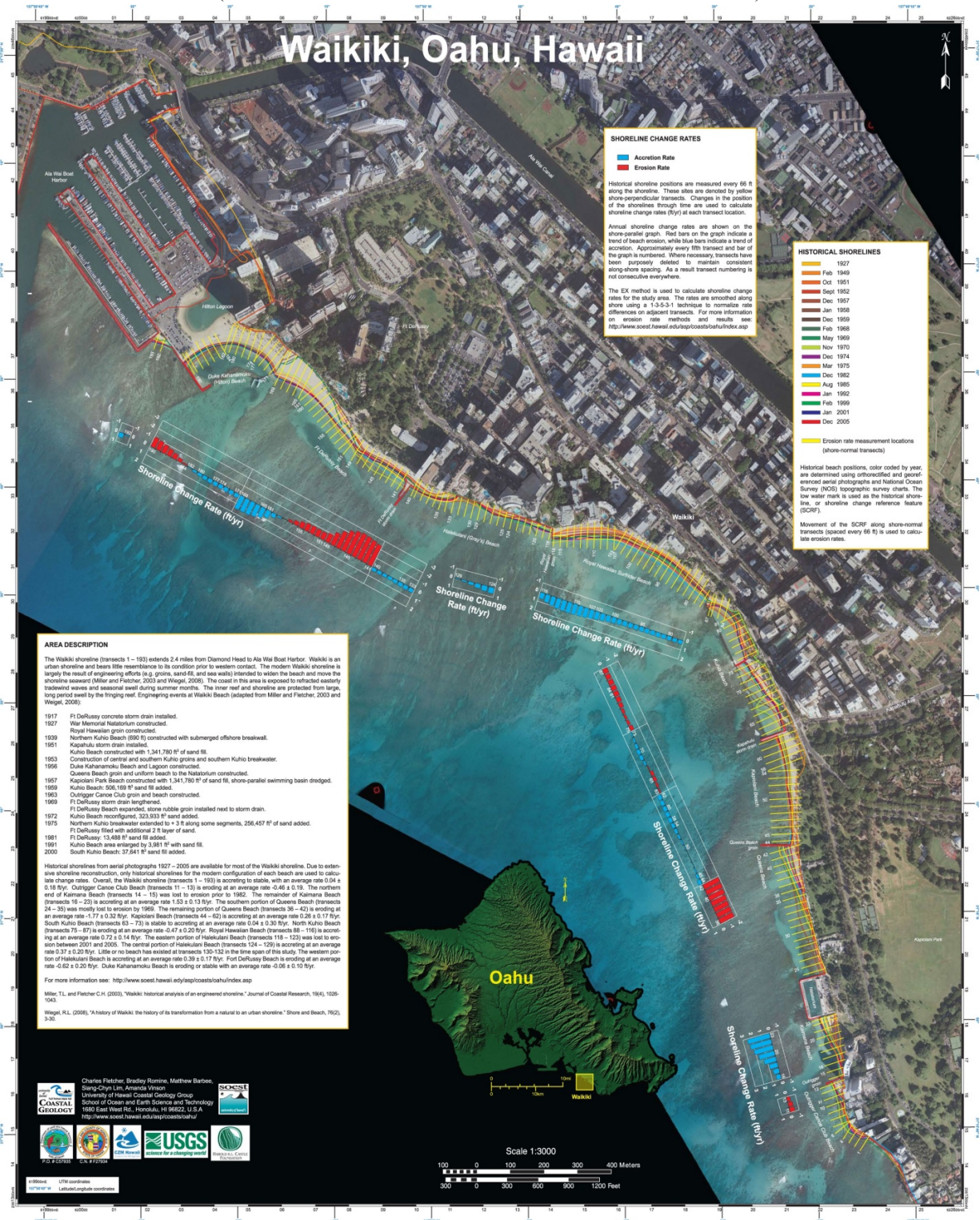
Beach Maintenance Construction Costs	Project	Est. Total Cost	Est 2015 Budget	Est 2016 Budget
Royal Hawaiian Groin Replacement 1	Replace failing terminal groin	\$1,300,000	\$325,000	\$325,000
	DLNR to fund 50%			
UH Sea Grant Project Management and Planning			Est 2015 Budget	Est 2016 Budget
Project Coordinator	UH Sea Grant Waikiki Coordinator and Outreach	-	\$125,000	\$131,000
Beach Management Plan	UH Sea Grant Plan Production	-	\$50,000	\$60,000
<i>UH Sea Grant Management SubTotal</i>			\$175,000	\$191,000
<i>WIA Management Fee</i>			\$30,000	\$30,000
<i>Set-up Cost</i>			\$45,000	
<i>Reserve</i>			\$25,000	\$24,000
<i>Sub Total</i>			\$100,000	\$54,000
Total Budget			\$600,000	\$600,000

Construction Estimate Sources:

¹Sea Engineering for DLNR, 2012

APPENDIX 1: HISTORICAL COASTAL EROSION RATES FOR WAIKĪKĪ

(SOURCE: UNIVERSITY OF HAWAII COASTAL GEOLOGY GROUP)



APPENDIX 2: POTENTIAL PROJECT PARTNERS AND STAKEHOLDERS FOR WAIKĪKĪ

State Government

- DLNR Office of Conservation and Coastal Lands
- DLNR Division of Boating and Ocean Recreation
- DLNR Land Division
- DLNR Engineering Division
- DLNR State Parks (Sans Souci State Recreational Park)
- DBEDT, Hawai'i Tourism Authority (HTA)
- Office of Planning, Coastal Zone Management Program
- Department of Health, Clean Water Branch

Local Government

- City & County of Honolulu (C&C) Mayor's office
- C&C Dept. of Planning and Permitting
- C&C Enterprise Services
- C&C Ocean Safety Division
- C&C Parks and Recreation
- C&C Facilities Maintenance
- C&C Parks and Recreation

Federal Government

- NOAA Pacific Islands Regional Office

- U.S. Army Corps of Engineers, Pacific Division Honolulu
- Fort DeRussy Military Reservation

Hotels & Resorts

- Hilton Hawaiian Village
- Hale Koa
- Outrigger Reef on the Beach
- Halekulani Hotel
- Sheraton Waikiki
- Royal Hawaiian
- Outrigger Waikiki
- Moana Surfrider Hotel
- Pacific Beach Hotel
- Marriott Resort & Spa Waikiki
- Hyatt Regency Waikiki
- Aston Waikiki Beach
- New Otani Kaimana Beach Hotel

Additional Key Stakeholders

- Waikīkī Neighborhood Board
- Waikīkī Improvement Association
- Waikīkī Business Improvement District
- Save Our Surf
- Surfrider Foundation
- Waikīkī Reef Watch
- Waikīkī Aquarium
- Waikīkī Beach Boys