

DRAFT REGIONAL REPORT SUBMITTED FOR INTERNAL REVIEW

29 MAY 2002

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REGIONAL ECONOMIC BENEFITS OF WAIKIKI BEACH

“The Hawaii economy continues to stagnate and the number of visitor arrivals and visitor days has declined.” [WTTC 1999]

“Waikiki Beach is one of the world famous beaches, yet there is precious little sand on major sections of the beach. At high tide, there is no dry beach in part of the hotel/beach restaurant section. Also, rocks are exposed in the shallow near shore area where people can stub their toes. Waikiki Beach needs sand to restore the beach to its full grandeur.” [Leatherman, 2002]

“Our Japanese survey indicated that 28 percent of visitors would cancel their plans to visit Hawaii should Waikiki be unavailable during their desired time of travel.” [unpublished survey, 1996]

“Although the infrastructure to enjoy Waikiki Beach is in place, something is lacking.....the beach! Many sections of Waikiki Beach have insufficient beach to provide for visitors and locals. A beach is needed for visitors to enjoy and support the many commercial establishments that depend on the beach, and to provide jobs and income for the many people who work nearby. These jobs will be lost if the public perception that ‘Waikiki Beach is gone’ ever prevails.” [Magoon, 2002]

“Probably the most beautiful beach in all the world is to be seen at Waikiki about two miles from Honolulu. At all hours of the day bathers and surf riders can be seen in the green waves as they come rolling in from the Pacific filled with laughing natives and tourists.

This famous beach is easily accessible to the city and bathing can be indulged in at night as well as day. There is not the slightest danger from undertow currents or deep water.” [Picture postcard description of Waikiki, posted in 1917]

Introduction

Waikiki’s beach, one of the most famous in the early 1900’s, largely has all but disappeared today. Erosion has taken such a toll that most of the public beach in the densely developed part of Waikiki is mediocre or non-existent. Tourists compete for towel space on narrow sandy beach areas, which frequently disappear at high tide. Getting in the water offers additional surprises, as exposed bedrock, dead coral and other material cause stubbed toes, cuts and scrapes. Additionally, outdated structural barriers, which today are failing and slippery, limit the exchange of seawater and provide dangerous venues for unsuspecting adventurers.

By any measure tourism in Hawaii and specifically Waikiki is languishing. Many factors contribute to this demise, one of which is the poor condition of the beach. This study examines secondary information in an attempt to make a first approximation of the impact on tourism of the eroding beaches.

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The Benefit Framework

As an island economy, the benefits flowing from Hawaii to the Federal government and the remaining 49 states are clear, definable and substantial. A portion of these benefits are shared or captured by the State, as benefits to the State's economy may also be benefits to the National economy. Additionally, benefits accrue to the State's economy that are exclusive to the State and/or local area.

State/local benefits can be considered by category. One benefit is the recreational value enjoyed by residents of the area and State who visit Waikiki beach. The economic benefit of the recreation value from these visits is measured as the value placed on the visit in excess of the costs. The costs of residents visiting the beach may include costs for transportation, incidentals, and sometimes lodging and meals. The enjoyment of the visit that is valued above the cost of the visit is known as the 'willingness to pay' for the recreation visit.

The remaining economic benefits examined herein relate to tourism expenditures by visitors from outside of Hawaii. International tourists' spending represents exports to the local, state and national economy. Visitors from the continental US to Hawaii are also exports to the state and local economy, and are avoided imports to the national economy to the extent that visitors would otherwise seek foreign destinations thereby increasing imports from US tourism abroad. The spending of tourists is not all an economic benefit to Hawaii. The State imports many of the goods sold to tourists from the mainland US and abroad reducing the benefits from tourism to Hawaii (though providing benefits to the rest of the country when the imports are of US origin). Given that the travel and tourism industry of Waikiki beach drives the Hawaiian tourism industry, the importance of the Waikiki beach economy to the region and the State is significant. Tourism expenditures support jobs, profits, sales and income taxes and local production of some goods consumed by tourists.

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State/regional Value of Waikiki Beach

The State/local benefits from tourism at Waikiki are substantial. To estimate the totals, a number of data sources are used in combination with assumptions that allocate impacts to Waikiki beach. No new surveys or data collection efforts were undertaken during this study. While the State, primarily through DBEDT, develops extensive data on tourism to the State from other states and countries, little data are available on the frequency and value of local use.

As the primary benefit of local use is the value of the recreation visit and residents could be expected to seek other beaches within the State in lieu of Waikiki, it is difficult to quantify a loss from local recreation use. In 1991, the Corps estimated that there were about 2.5 million beach visits by residents. While economic loss would occur if residents lose access to desired attributes only available at Waikiki or face increased costs to travel to other beaches, additional study would be required to estimate the value of recreation loss to the State from the declining beach conditions at Waikiki.

To develop an estimate of the economic benefits of the tourism industry, the estimates presented below utilize detailed data collected and developed by the State's Department of Business, Economic Development and Tourism (DBEDT) in combination with current information on beach width developed by the University of Hawaii. DBEDT data include counts of visitors, lodging places, visitor expenditures, visitor preferences as well as an input-output (I-O) analysis for the State. The most recent I-O estimate of the tourism industry was 1998, thus dollar estimates are stated in 1998 values. More recent data on visitors were used to reflect current visitor activity. Most estimates of tourism are available only by island, some are available only at the State level. Measurement of beach areas are based on the area of sand above the high tide line, as estimated by University of Hawaii researchers based on their ongoing research at Waikiki Beach.

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In 1998, gross visitor expenditures totaled \$11,594.7 million. The State impact is measured by adjusting gross expenditures by visitor-related inputs that totaled \$4,348.0 million in 1998, yielding net visitor expenditures of \$7,246.7 million. Net visitor expenditures represent the Direct and Indirect impact of tourism on the State. Additional impacts results from the respending of tourism-related income by the labor force, the induced impact. The total of direct, indirect and induced economic expenditures for the State are an estimated \$11.24 billion [DBEDT] is shown in Table 1. The 1998 economic impact of Waikiki tourism is estimated at more than \$5 billion, with \$3.1 billion in labor income and about \$0.6 billion in state and local taxes. The tourism activity supported more than 140,000 jobs.

Table 1: Hawaii and Waikiki Beach: Visitor-related Direct and Indirect and Induced Impacts (\$1998 millions)				
	Hawaii Total:		Waikiki Share (44.1%):	
Impact	Direct & Indirect	Direct, Indirect & Induced	Direct & Indirect	Direct, Indirect & Induced
Gross State Product	\$7,246.7	\$11,424.2	\$3,198.1	\$5,041.7
Jobs (1,000)	180.1	318.2	79.5	140.4
Labor Income	\$4,573.0	\$7,022.9	2,018.2	\$3,099.3
State & Local Taxes	\$903.3	\$1,319.8	\$398.6	\$582.5

Note: Bolded entries are taken from the 1998 DBEDT publication, others are calculated, totals may not add due to rounding

The impacts shown are allocated to Waikiki based on the Waikiki share of the lodging units in Hawaii. Waikiki contained 31,557 of the State's 71,506 lodging unit inventory in 2000, 44.1% of units available Statewide.

The Effects of Erosion on the Waikiki Economy

In the 1991 estimate of recreational benefits for Waikiki beach by the Honolulu District, tourism in Waikiki was expected to increase. The rate of increase was estimated as 8.4% between 1990 and 1995 and 8.85% from 1995 to 2000. During that time frame without a nourishment project, the actual numbers indicate that there was essentially no growth in

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tourism in Waikiki, despite the 57% increase in tourism worldwide during the same period [WTTC].



Royal Hawaiian Beach (April 2001). The narrow beach pictured here is characteristic of this area at high tide. The situation has become a concern because this stretch of beach is a major thoroughfare for people to travel between adjacent popular sections of Waikiki. [Photographed by Tara Miller, provided courtesy of the University of Hawaii]

Crowding in much of Waikiki, specifically between the building line and the water's edge, is severe. Table 2 provides an estimate of the square feet of beach available and the number of lodging units adjacent to or in the region of each beach.

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Table 2: Beach Area (ft²) and Lodging Units by Beach			
Littoral Cell	Beach Area (sq. ft.)	Lodging Units	Sq ft. of Beach per Lodging Unit
Kaimana, Queens & Kapiolani Beach	125,771	238	528
Kuhio Beach	68,815	7,184	10
Royal Hawaiian Beach	84,674	8,339	10
Halekulani Beach	28,019	7,296	4
Ft. DeRussy Beach	242,579	8,206	30
Total	549,858	31,263	18

Lodging units in the central area of Waikiki, those near Kuhio, the Royal Hawaiian and Halekulani Beaches are those that would benefit from a nourishment project. This stretch of beach serves 73% of the lodging units while containing only 33% of the beach area. The crowding is severe. The crowded beaches cause dissatisfaction to visitors which can result in decisions to leave Hawaii sooner than planned, not return to the State for future visits and/or convey to others a dissatisfaction of conditions at Waikiki (thereby influencing those who might otherwise visit Hawaii). While detailed survey information on the perception of the beach conditions in Waikiki is not available, statewide visitor satisfaction studies are conducted regularly and can be used as a preliminary basis for estimating the dissatisfaction resulting from crowding at Waikiki Beach.

Methodology: Measuring The Impact Of Erosion On Tourism

To understand the effects of erosion on tourism, it is necessary to characterize the industry performance, identify areas of underperformance (if any) and to relate those to the condition of the beach. The following section examines the areas of underperformance of both the State and Waikiki. Note that underperformance can result from a variety of causes so that relating it entirely to a single causal factor, e.g., erosion, is not appropriate. The procedure developed to estimate the effects of erosion singles out only those visitors who visit Waikiki and state crowding/congestion as their reason for not returning.

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Conditions at Kuhio Beach during a typical summer swell (August 2001). There is no dry beach. [Photographed by Tara Miller, provided courtesy of the University of Hawaii].

Underperformance of the Waikiki Tourism Economy

Standard measures of tourism indicate that tourism in Waikiki lags behind other international destinations. Throughout the 1990's international tourist arrivals worldwide grew from an estimated 440 million to 690 million, or 57% [World Travel Organization, 2001]. During the same period, arrivals in Hawaii rose from 6.72 million to 6.74 million, or 0.3%. In 1999, 4.6 million of those visitors came to Oahu, and 2.9 million came only to Oahu. Note that Waikiki includes @87% of all hotel rooms on Oahu and 44% of those in the State [DBEDT, 2000]. The lack of growth in tourism in Hawaii and in Waikiki is notable.

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There are other negative aspects to the Waikiki tourism picture. Beach hotels of the type in Waikiki (and throughout Hawaii) strive for a ‘capacity’ rate of @85% occupancy [conversations, hotel industry experts, 2002]. The occupancy rate for the State in 1999 was 71.08%, with occupancy on Oahu averaging 71.10% [DBEDT], a 13.9% shortfall over the desired rate. Additional evidence of the underperformance in Waikiki is seen in the average daily hotel rate. The 1999 average room rate in the State was \$131.66, whereas the average rate on Oahu was \$107.93. Rates on the other three large tourism islands ranged from \$144.27 to \$192.44 [DBEDT]. The average weighted room rate outside of Oahu was \$158.03, demonstrating that Oahu rates are well below other Hawaiian islands. Room rates drive a third measure, RevPAR, defined as the revenue per available room (the occupancy rate times the average room rate). The 1999 RevPAR on Oahu was \$77.39 whereas other island rates ranged from \$101.57 to \$124.33. The weighted RevPAR for the three large tourism islands excluding Oahu was \$114.42, indicating that lower rates on Oahu result in average room revenues of less than 68% of the other Hawaiian islands.

Impact of Beach Condition on Tourism

Estimating how the deterioration of Waikiki Beach (or any beach) affects tourism is difficult. The most sophisticated methods use extensive, region-specific, carefully structured surveys executed over at least one complete tourism season, preferably several (some beach areas conduct annual surveys). In these surveys users and non-users are asked to share their perceptions of the beach and relate the condition of the beach to their decision framework. At this phase of research, no survey was undertaken. Rather, the information used is that collected on an ongoing basis by the State to characterize the State tourism industry from the perspective of users. The usefulness of the available secondary information is limited by a lack of specificity and detail.

Tourism (in any region) languishes because fewer tourists come to the destination, or those who come shorten their stay and/or spend less per visit. In Waikiki, the depression of the tourism is evidenced by both the lack of growth in the number of visitors and the lower level of expenditures as demonstrated in the revenue per available hotel room.

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Moreover, since Waikiki Beach is not only a destination, but also a starting point for most visitors to other islands in Hawaii the reduction in visitors to Waikiki may cause a reduction in visitors and expenditures on other Hawaiian islands.

Several factors contribute to the slowdown in tourism. Generally speaking, Waikiki tourists or potential tourists include those who visit the region repeatedly, those who visit only once, and tourists who choose never to visit. An understanding of the decision-making related to those who visit only once and those who never visit is required to explain the underutilization of Waikiki's infrastructure. The ongoing data collection efforts in Hawaii provide us with extensive information on those who visit Hawaii, some specific information on the reasons those who visit only once do not return and no information on visitors who might choose to visit Waikiki but select alternative destinations instead.

To estimate the effect of the condition of Waikiki Beach on tourism, on-going surveys administered by the State were reviewed. The State annually surveys tourists to reveal activity participation, visitor satisfaction, the likelihood of revisits, the reason(s) for not revisiting, and the likelihood of recommending a visit to others. The results are compiled for three major market areas, i.e., US East, US West and Japan, which together represent more than 85% of the visitors to Hawaii.

To estimate the number of tourists who do not return to Waikiki because of dissatisfaction with the crowded beaches in Waikiki, the first step involved estimating the number of visitors who choose not to revisit as shown in Table 3. In the survey, visitors are asked to express their likelihood to revisit as very likely, somewhat likely, not too likely or not at all likely. To translate this into an estimate of those who will not revisit, probabilities were assigned to each response of 0.9, 0.6, 0.2 and 0.01 respectively. Aggregating the responses in each major market area to the visitors from each area and expressing the results as a percentage reveal that more than a quarter of the visitors (2.0 of the 6.9 million) in the year 2000 will not return to Hawaii.

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Table 3: Visitors and Likelihood to Revisit Hawaii by Major Market Segment					
	US West	US East	Japan	All Other	Total
Number of Visitor Arrivals	2,432,443	1,712,712	1,817,643	985,797	6,948,595
Percent	35.0%	24.6%	26.2%	14.2%	100.0%
Percent Likely to Revisit by Major Market Segment (MMS):					
Likelihood to Revisit					
Very likely, (.9)	74.3%	47.8%	47.5%	58.5%	
Somewhat likely (.6)	18.1%	27.2%	38.1%	26.8%	
Not too likely (.2)	6.5%	21.4%	14.1%	13.1%	
Not at all likely (.01)	1.0%	3.5%	0.4%	1.5%	
Visitors Not Likely to Revisit:					
Very likely responders, 10%	180,731	81,868	86,338	57,688	406,624
Somewhat likely responders, 40%	176,109	186,343	277,009	105,719	745,179
Not too likely responders, 80%	126,487	293,216	205,030	103,284	728,017
Not at all likely responders, 99%	24,081	59,345	7,198	14,982	105,607
Total	507,408	620,772	575,575	281,673	1,985,427

To determine the percent of visitors who will not revisit because of the condition of Waikiki beach, the reasons stated for not revisiting were examined as shown in Table 4. Visitors who indicated they would not revisit were offered choices among the following reasons: 'Too expensive', 'Want to go someplace new', 'Flight too long', 'Too commercial and/or overdeveloped', 'Too crowded/congested' and 'Other'. As the general economic infrastructure throughout Waikiki, i.e., hotels, restaurants and shops, is notably under-utilized/patronized, visitors are not expected to have experienced crowding in the overall economic development. Rather, the crowding in Waikiki is that evidenced from the building line to the water's edge, which can only be relieved by regaining beach area lost to erosion. Thus visitors to Waikiki who responded 'Too crowded/congested' as the reason for not returning to Hawaii are interpreted as doing so because of the diminished beaches at Waikiki. Note that the crowding could also be the reason that some visitors who will not return stated they would not return because they found the area too expensive, too commercial/overdeveloped or 'other' so that the including only the 'too crowded/congested' responders may be understating the loss of visitors due to erosion. By Major Market Segment (MMS), the survey results shown in Table 4 indicate that 6.3 – 22.8% of tourists who do not revisit make that choice because of crowding and congestion. In order to adjust for multiple responses, the actual percentages of 'too

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crowded/congested' respondents (11.8% - 38.2%) were adjusted downward correspondingly.

Reasons for Not Revisiting	US West	US East	Japan	All Other
Too expensive	64.1%	55.4%	31.7%	51.7%
Want to go someplace new	41.9%	56.6%	8.9%	36.1%
Flight too long	13.4%	41.6%	3.8%	18.6%
Too commercial/overdeveloped	17.8%	11.8%	40.5%	23.0%
Too crowded/congested	16.0%	11.8%	38.2%	21.6%
Other	27.1%	11.5%	44.1%	27.8%
Total	180.3%	188.7%	167.2%	178.7%
"Too crowded/congested" adjusted for multiple responses	8.9%	6.3%	22.8%	12.1%

To estimate the number of visitors not returning because of crowding and congestion the percent of visitors not returning is multiplied by the percentage who indicated that the failure to return was related to crowding and/or congestion as shown in Table 5.

	US West	US East	Japan	All Other	Total
Visitors Not Returning to Hawaii:	507,408	620,772	575,575	281,673	1,985,427
% Due to Crowding/congestion:	8.9%	6.3%	22.8%	12.1%	12.6%
# Due to Crowding/congestion:	45,028	38,819	131,501	33,981	249,329

As shown, 12.6% of those visitors who do not return to Hawaii make the decision because of crowding. The estimated 249,329 visitors who do not return because of crowding/congestion represent 3.6% of the 6,948,595 total State visitors in year 2000. As an additional 3.6% of visitors make the same decision each year (and the number of total visitors varied only slightly through from 1990 – 2000), the estimate provides a measure of the State's annual visitor loss due to crowding and congestion.

To estimate the economic losses due to crowding at Waikiki Beach the percentage of visitors lost is allocated according to the number of Waikiki visitors and associated expenditures. As shown in Table 6, annual State losses at Waikiki are an estimated \$181

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million including more than 5,000 jobs, \$111 million in labor income and nearly \$21 million in State and local taxes.

Impact	Total	Erosion Loss
Gross State Product	\$5,041.7	\$180.9
Jobs (number)	140,400	5,038
Labor Income	\$3,099.3	\$111.2
State & Local Taxes	\$582.5	\$20.9

Note: Bolded entries are taken from the 1998 DBEDT publication, others are calculated, totals may not add due to rounding

The loss is estimated as resulting from the continuing dissatisfaction of visitors from the crowded conditions at Waikiki Beach.

Limitations of the Estimates

The tourism industry's relationship to the beach condition may be understated by this methodology. Without well-designed on-site surveys, the perceptions and behavior of visitors and potential visitors who choose not to come to Waikiki cannot be fully understood. The estimate here is conservatively stated for a number of reasons, including:

1. The estimate reflects the behavior of only those visitors who choose not to return to Waikiki. The impact of these dissatisfied visitors on others can be significant.
2. The methodology assumes that all visitors stating a reason for not returning as 'too crowded/congested' are allocated equally among visitors throughout the State. Realistically, the crowding and congestion at Waikiki may be the only crowding in the State, or the only crowding in the State severe enough to invoke a decision not to return.
3. Because multiple responses on the reason for not returning were permitted in the survey, the percent of visitors calculated to not return due to crowding/congestion was severely reduced. If those who stated crowding/congestion as a reason would

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have stated it as the sole reason were a single response required, the reduction for multiple responses understates the true value.

4. Visitors may have responded with reasons other than ‘too-crowded/congested’ based on the narrow and crowded conditions of the beach. For example, those who said the area was ‘too expensive’, ‘too commercial/overdeveloped’ or ‘other’ may have so responded because of the beach condition.
5. Waikiki is used by many visitors as the ‘primary’ destination, with visits to the other Hawaiian islands added in. No estimate of the spillover effect of the reduction in visitors to Waikiki on other islands is included herein.