

Summary Report on Expenditures Module

A Report on Data Collected for

The Southern California Beach Valuation Project

Prepared by

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1. INTRODUCTION

Expenditures by beach visitors help to drive a local coastal economy that includes parking concessions, restaurants, rental and food concessions, and even shopping. This report details efforts to estimate the magnitude of beach expenditures for the summer of 2000 at beaches in Orange and Los Angeles Counties. One in a series of summary reports on data collected for the Southern California Beach Valuation Project, this report focuses exclusively on data gathered on expenditures made during trips to the beach during June and July of 2000. These data were collected using a survey instrument we call “the expenditures module” – a series of detailed questions about beach expenditures. The expenditures module was administered to a panel of individuals participating in a year long, bi-monthly panel survey conducted by the Beach Valuation Project. The expenditures module questions were asked of panel members in the fourth survey wave, covering beach visitation during the period June and July 2000. The expenditure questions immediately followed the diary portion of the survey. At the beginning of June, respondents had been sent worksheets for the purposes of keeping track of their expenditures while visiting beaches during June and July.

2. OVERVIEW OF EXPENDITURES SURVEY DATA

528 members of the panel that had been recruited in November and December 1999 completed the fourth wave of the diary survey, which was administered between August 23 and October 16, 2000. Of these, 239 reported that they had not gone to the beach in southern California during June and July, 92 reported that they took one trip to the beach in southern California during June and July, and 197 reported that they took two or more trips. Once they had completed the diary survey, those who had taken one or more trips to the beach were eligible for participation in expenditure component of the survey. Of the 289 eligible respondents, 276 did participate in the expenditure component of the survey. Of these 4 were dropped because of data problems. This analysis, therefore, is based on responses from 272 respondents. Of these, 80 had taken one trip to the beach, while 192 had taken two or more trips to the beach. Those who had taken only one trip to the beach were asked about their expenditures on that trip. Those who had taken two trips were asked about their expenditures on both trips. Those who had taken three or more trips were asked about their expenditures on their two most recent trips. While all of the 80 respondents who had taken one trip to the beach reported their expenditures on that trip, of the 192 respondents who had taken two or more trips only 129 reported their expenditures for a second trip, which we believe reflects respondent fatigue. We show below that the expenditure patterns reported for the second trip are very similar to those reported for the first trip (see Section 4.)

The respondents were asked about six categories of expenditures

1. Food and beverage purchases
2. Beach supply purchases
3. Renting recreational equipment
4. Fishing tackle or bait purchases
5. Other fishing purchases
6. Money spent while shopping.
7. Money spent on parking

Those who rented recreational equipment were asked what was the type of equipment. Those who spent money shopping were asked what was the type of store where their purchase was made.

3. FIRST BEACH TRIP

As noted above, 272 respondents completed the expenditure component of the survey for at least one beach trip. However, 5 of these were dropped from the analysis because they repeatedly answered “Don’t Know.” Therefore, the sample for the analysis of the first beach trip is 267 respondents. Their responses are summarized in Tables 1 and 2. In only one category—spending on food or beverages—did more than half of the sample make some expenditure; 55% of the respondents made a food or beverage purchase. In the other five categories, more than 85% of the sample made no expenditure at all. The next most frequent purchase categories were shopping and beach supplies, and these lagged far behind with affirmative responses amounting to 12 percent and 11 percent respectively.

Table 1. Percentage of Respondents Spending Money, by Category (First Trip)

Expenditure Categories ¹	Source variable	Yes—had an expenditure in this category		No—made no expenditure in this category		Other responses ²		Total ³
		Count	Percentage	Count	Percentage	Count	Percentage	
Food or beverages	M401	148	55%	119	43%	5	1%	100%
Money spent shopping	M418	32	12%	235	86%	5	1%	100%
Beach supplies	M 402	29	11%	238	88%	5	1%	100%
Renting recreational equipment	M 403	7	3%	260	96%	5	1%	100%
Fishing Tackle and Bait	M415	0	0	0	0	0	0	100%
Other fishing	M416	0	0	0	0	0	0	100%

¹ Expenditures ordered according to decreasing percentage of “Yes” responses.

² Includes “don’t know” and “refused” responses.

³ May not actually add to 100% due to rounding.

Table 2 indicates that, in terms of average dollar expenditure per trip, the largest item is expenditure on food and beverages, which averages \$12.21 per trip. Spending by beachgoers is confined largely to expenditures on food and beverages, followed by shopping, and expenditures on beach supplies. (Note that mean values in this table are computed as averages over the entire set of 267 respondents. The number of people making some expenditure in each category is reported in the “nonzero observations” column.)¹

¹ Note that 7 respondents took multi-day trips and reported their expenditures for the entire multi-day trip. We include these expenditures, but divide the total trip expenditure by the length of the trip (days) to derive their daily spending during their last trip.

Table 2. Summary Statistics For Expenditures (\$), by Category (First Trip)

Expenditure Category ¹	Source Variables ²	Nonzero Obs.	Mean (\$)	Std. Dev.	Min. (\$)	Max.(\$)
Food or beverages	Q401a, Q401b	148	12.21	20.65	0	200
Shopping Store #1	Q419a, Q419b	34	4.28	81.95	0	450
Shopping Store #2	Q419e, Q419f	9	3.17	147.43	0	450
Beach supplies	Q402a, Q402b	29	1.94	11.25	0	166
Renting equipment	Q404a, Q404b	7	0.745	5.23	0	50
Shopping Store #3	Q419i, Q419j	3	0.3	37.86	0	200
Fishing tackle, bait	Q415a, Q415b	0	0	0	0	0

¹Expenditures categories are ordered according to decreasing mean spending.

²These are the source variables for the corresponding expenditure category. The datasets have separate variables for dollars and cents. They were added together for expenditure calculations.

While we have relatively few respondents reporting rental expenditures at the beach, the preponderance of these expenditures were for boogie board rentals. Note, that this category of rental expenditure could be significantly impacted by water quality impairment.

Table 3. Choices on rental of recreational equipment (First Trip)

Type of equipment	Number of responses	Percent of total
Boogie board	3	43%
Bicycles	1	14.3%
Roller blades	1	14.3%
Sail Boat	1	14.3%
Fishing equipment	0	0
Other	1	14.3%
Total	7	100%

4. SECOND BEACH TRIP

Of the 192 respondents who made two or more trips to the beach, 129 (67.2%) provided expenditure data for a second trip. While this participation is less than we had anticipated, we find no important evidence of sample selection bias. The origins of residence and frequency of trips taken by those multi-trip respondents who did and did not provide expenditure data for a second trip are virtually identical. Age for the two groups is similar, but males were more likely to decline participating in the expenditures questions for the second trip. (See Table 4.).

Table 4. Comparison of Age and Sex For Multi-Trip Respondents

	Multi-Trip Respondents Answering 2nd Trip Expenditure Questions	Multi-Trip Respondents Not Answering 2nd Trip Expenditure Questions
Average Age	41.68 years	42.93 years
Sex	Male = 42%, Female = 58%	Male = 57%, Female = 43%

Further, spending patterns in the reported expenditures from the first trip are very similar for the two groups: multi-trip respondents who answered both sets of expenditure questions spent slightly more on food, beach supplies, and recreation, but less on shopping than their counterparts that refused to participate in the second set of questions (Table 5).

Table 5. Comparison of Expenditures in First Trip for Multi-Trip Respondents

	Mean Expenditure (\$) in Trip1: Multi-Trip Respondents Answering 2nd Trip Expenditure Questions	Mean Expenditure (\$) in Trip1: Multi-Trip Respondents Not Answering 2nd Trip Expenditure Questions
Food	12.15 SD= 18.35	11.34 SD = 27.3
Shopping	4.74 SD = 40.70	6.85 SD = 27.16
Beach Supplies	3.13 SD = 16.10	0.60 SD = 2.95
Recreation	1.31 SD = 7.18	0.67 SD = 4.05
Total Respondents	124 ¹	63

¹ 5 respondents dropped due to repeated answers of Don't Know or Refused.

Overall, per trip expenditures in each of our categories spending categories remains roughly the same as for first trip expenditures.

Table 6. Percentage of Respondents Spending Money, by Category (Second Trip)

Expenditure Categories ¹	Source variable	Yes—had an expenditure in this category		No—made no expenditure in this category		Other responses ²		Total ³
Food or beverages	M421	67	52%	60	46%	2	1.5%	100%
Money spent shopping	M438	19	15%	109	85.5%	1	<1%	100%
Beach supplies	M422	7	5.5%	121	94%	1	<1%	100%
Renting recreational equipment	M423	6	5%	122	95%	1	<1%	100%
Fishing Tackle and Bait	M435	1	<1%	128	99.2%	0	0	100%
Other Fishing	M436	0	0	129	100%	0	0	100%

¹ Expenditures ordered according to decreasing percentage of “Yes” responses.

² Includes “don’t know” and “refused” responses.

³ May not actually add to 100% due to rounding.

Table 7. Summary Statistics For Expenditures (\$), by Category (Second Trip)

Expenditure Category ¹	Source Variables ²	Nonzero Obs.	Mean ³ (\$)	Std. Dev.	Min. (\$)	Max. (\$)
Food or beverages	Q421a, Q421b	67	13.58	47.09	0	500
Shopping Store #1	Q439a, Q439b	19	5.75	41.89	0	150
Shopping Store #2	Q419a, Q419f	4	2.61	65.82	0	150
Beach supplies	Q422a, Q422b	7	0.923	4.65	0	37
Renting equipment	Q424a, 424b	6	0.83	4.61	0	40
Shopping Store #3	Q419i, Q419j	0	-	-	-	-
Fishing tackle, bait	Q415a, Q415b	1	0.04	5.82	0	5

¹ Expenditures categories are ordered according to decreasing mean spending.

² These are the source variables for the corresponding expenditure category. The datasets have separate variables for dollars and cents. They were added together for expenditure calculations

³ Mean values are averages over the entire set of 129 respondents.

5. EXTRAPOLATING BEACH EXPENDITURES

Conservative estimates of beach attendance are available from the USC Beach Attendance Data Base (USC Beach 2001). These data represent attendance figures reported by participating lifeguard agencies in Southern California. These data are not comprehensive (for example, Seal Beach and Long Beach do not report attendance figures), but they do cover the vast majority of beach visitors in Orange and Los Angeles Counties. Using the USC Beach Attendance data, we estimate that, for the three month period June-August 2000, the average daily attendance at all Los Angeles beaches combined was 325,351 persons per day, while the average daily attendance at Orange County beaches combined was 160,129 persons per day.

We use these attendance figures to extrapolate our estimates of beach expenditures to the larger beach going population as a whole. Our methodology is as follows:

➤ Weighting of expenditures

We recognize that some visitors make many visits to the beach while others do not. Frequent beach visitors should be weighted accordingly. We calculate the weighted average of beach expenditures (as a whole or by category) as

$$\text{weighted mean expenditure} = \frac{\sum_i \text{EXP}_i * N_i}{\sum_i N_i}$$

where EXP_i is the reported expenditure by respondent i and N_i is the number of beach trips taken by respondent i during wave 4.

Obviously, people who visit the beach more often are weighted more heavily in our analysis. Fortunately, we have expenditures data for two beach trips for most of our frequent users (129/192). To incorporate these second trip data into a more accurate estimate of beach-related expenditures we use the following modification of our weighting structure.

$$\text{modified weighted mean expenditure} = \frac{\sum_i \text{EXP}_i^1 * N_i^1 + \sum_j \text{EXP}_j^2 * N_j^2}{\sum_i N_i^1 + \sum_j N_j^2},$$

where the superscript indicates whether the respondent reported expenditures for one or two trips and EXP_j^2 = mean expenditure for both trips when reported.

➤ Extrapolation of Expenditures

We extrapolate the average expenditures, as calculated above, to all beach goers in Orange and Los Angeles Counties as estimated from the USC Beach Attendance Data Base. Note, that our attendance data for Orange County are less complete than for Los Angeles County. As a result, the degree to which we conservatively underestimate total beach-related expenditures is somewhat greater for Orange County beaches.

6. PATTERN OF RESIDENCE AND BEACH VISITS

We further breakdown these expenditures by origin of visitor. Table 8 provides residential data for beach visitors. We specifically examine that proportion of beach visits by beach goers that live in

the same county as the beach visited (“Locals”) and those that live in other counties (“Non-Locals”). This breakdown is important in determining the degree to which beaches generate economic inflows to the local economy. Even though our survey does not cover tourists to the region from areas outside of Southern California, we see that Orange County beaches are a significant draw for non-local beachgoers who live within Southern California. Note, we base our analysis on the number of trips taken by each respondent. As described above in the extrapolation methodology, we seek to estimate the total pattern of beach visits not just those by our respondents.

Non-local visitors account for an important component of total beach visits to Orange County beaches. The proportion of visits to Orange County beaches made by Orange County Locals in our sample is 53 % (276/521) while the proportion of non-Locals is 47%.² Los Angeles County beaches, on the other hand, tend to attract mostly local beachgoers. Ninety-four percent (497/528) of visits made to Los Angeles County beaches by Southern Californian visitors were Locals.

Table 8. Visits to Beaches in Southern California by Residents of Southern California: Breakdown by County of Residence and County of Beach, June-July 2000.

County of Beach	County of Residence			Total
	Orange County	Los Angeles County	Other	
Orange County	276	4	5	285
Los Angeles County	98	497	70	665
Other	147	27	28	202
Total	521	528	103	1152

Tables 9 and 10 show the expenditure patterns corresponding to local and non-local visits to beaches in Orange County and Los Angeles County. When the origin/destination shares in Table 8 are applied to the daily averages of 160,129 beach visits per day for the beaches in Orange County and 325,351 visits per day for the beaches in Los Angeles County, and the results are then combined with the per-trip expenditures in first and third columns of Table 9 and 10 and applied to the three-month summer period of June, July and August, one obtains the aggregate beach expenditures shown in the second and fourth columns of Tables 9 and 10.

We estimate that beach-related expenditures accounted for over \$1 billion of generated revenues in Orange and Los Angeles Counties during June-July 2000. Most of this spending was for retail items, especially food (\$510 million) and shopping (\$226 million). In Orange County, a significant majority of this spending (74%) came from non-local beach visitors who are estimated to have spent more than \$221 million at Orange County beaches during the summer of 2000. Not surprisingly, non-local visitors to Orange County beaches generated almost \$97 million in parking revenues, the primary difference in spending by non-Locals compared to Locals. In Los Angeles County, Locals accounted for most beach related expenditures with local Angelinos spending almost \$247 million on parking and \$511 million on food and shopping.

² A complete list of Beaches included in our sample is given in the Appendix.

Table 9: Estimated Expenditures in Orange County by Locals and Non-Locals. June – August, 2000

	LOCALS		NON-LOCALS	
	Average Expenditure per trip (\$)	Estimated Total Expenditure by all Locals (\$)	Average Expenditure per trip (\$)	Estimated Total Expenditure by all Non-Locals (\$)
Food	7.07	54,620,667	11.28	77,257,550
Shopping	1.31	10,087,475	5.45	37,304,460
Recreational Equipment	0.22	1,678,914	0.43	2,935,158
Beach Supplies	0.41	3,196,932	0.85	5,800,431
Parking	1.00	7,723,004	3.35	96,767,435
Total Expenditure by Locals		\$77,306,993	Total Expenditure by Non-Locals	\$220,065,034

Table 10: Estimated Expenditures in Los Angeles County by Locals and Non-Locals, June – August, 2000.

	LOCALS		NON-LOCALS	
	Average Expenditure per trip (\$)	Estimated Total Expenditure by all Locals (\$)	Average Expenditure per trip (\$)	Estimated Total Expenditure by all Non-Locals (\$)
Food	9.69	269,737,340	19.55	34,726,030
Shopping	3.62	100,626,531	5.81	10,314,662
Recreational Equipment	0.69	19,262,953	0.77	1,375,288
Beach Supplies	1.36	37,909,940	0.23	401,126
Parking	9.30	247,865,279	7.18	12,757,883
Total Expenditure by Locals		675,402,042	Total Expenditure by Non-Locals	58,199,702

7. IMPACT ON LOS ANGELES AND ORANGE COUNTY ECONOMY

Beach-related expenditures support local workers. Tables 11 and 12 present our estimate of the impact of expenditures by Locals and non-Locals on wages and employment in Orange and Los Angeles counties. The upper portion of these tables shows the direct effect of the expenditures by visitors to the beaches of Orange and Los Angeles Counties on wages and salaries and employment in those counties, using data on the wage/salary component of sales revenues and employment per dollar of sales taken from US Census 1997 (www.census.gov/epcd/www/econ97.html). We estimate that beach visits to Orange and Los Angeles Counties during the summer of 2000 directly generated almost \$160 million in wages and salaries, and an equivalent of 14,650 annual full-time and part-time jobs; these are shown as “Total Direct Effect” in Tables 11 and 12. These effects are located primarily in the food and retail sectors of the economy. These figures represent spending over just a three month period. If one assumed that employment and wages the food and retail industry in Orange and Los Angeles Counties stayed at about the same level year round, the annual figure would be quadruple this, or about 58,600 jobs.

In addition to the effect on the food and retail industries, sales revenues in those sectors generate additional indirect and induced spending in the other sectors of the local economy. Following Leeworthy and Wiley (personal communication concerning the Expenditure Analysis of Coastal Spending in the Channel Islands), we conservatively estimate the multiplier impact on wages and income associated with beach-related spending in Orange and Los Angeles Counties at between 2.0

Table 11: Estimated Economic Impact on Orange County, June – August , 2000

	Expenditure (Sales)	Wages and Salaries	Direct Employment (equivalent annual full and part-time jobs)
Non Locals			
Food	\$77,257,550	\$20,771,302	2,152
Shopping	\$37,304,459.91	\$3,968,756	196
Subtotal	\$115,540,396	\$24,740,058	2,349
Locals			
Food	\$54,620,668	\$14,685,197	1,522
Shopping	\$10,087,475	\$1,073,189	53
Subtotal	\$64,708,143	\$15,758,386	1,575
TOTAL DIRECT EFFECT	\$179,270,153	\$40,498,445	3,924
INDIRECT & INDUCED EFFECTS			
If multiplier =2		\$49,779,127	
If multiplier =2.5	Non-Locals	\$62,223,909	

and 2.5 times the direct impact. The portion of this economic impact attributable to non-Local recreation represents an economic inflow into the county; this amounts to \$50-62 million in Orange County and \$21-26 million in Los Angeles County, reflecting the relatively small number of non-Local visitors beaches in Los Angeles County.

Table 12: Estimated Economic Impact on Los Angeles County, June – August, 2000

	Expenditure (Sales)	Wages and Salaries	Direct Employment (equivalent annual full and part-time jobs)
Non-Locals			
Food	\$34,726,030	\$9,248,016	895
Shopping	\$10,314,662	\$1,063,923	56
Subtotal	\$45,040,693	\$10,311,938	951
Locals			
Food	\$269,737,340	71,834,733	6954
Shopping	\$100,626,531	\$10,379,289	545
Subtotal	\$370,363,870	\$82,214,022	7,500
TOTAL DIRECT EFFECT	\$415,404,563	\$92,525,961	8,451
INDIRECT & INDUCED EFFECTS			
If multiplier =2	non-Locals	\$20,623,877	
If multiplier =2.5	non-Locals	\$25,779,846	

8. CONCLUSION

The beaches of Orange and Los Angeles Counties are important engines for the local coastal economy. Our research indicates that beach visitors from San Onofre in the south to County Line in the north spent in excess of \$1 billion during the summer of 2000. Further, expenditures by beach visitors help to support local firms and beach-related jobs. Based on the summer of 2000, we estimate that about 58,600 full and part-time jobs are supported annually by beach visitors to Los Angeles and Orange County beaches.

Beach-related expenditures, in turn, help to fuel other spending in the region. In this analysis, we conservatively estimate these secondary impacts of beach spending by considering only the impacts of beach-related spending that comes from non-local beach visitors. Expenditures by these non-local beach visitors represent economic inflows into coastal counties. We estimate that

expenditures by non-local beach users exceeds \$221million each summer and accounts for nearly three quarters of beach related expenditures in Orange County. The large value of expenditures by non-Locals at Orange County beaches reflects the importance for beach businesses of maintaining public access to Orange County beaches. Similarly, the high percentage of non-local beach visitors in Orange County highlights the value of these beaches for people residing in other counties.

The beach-related expenditures that we estimate here represent an upper-bound on the economic losses that could result if beach attendance were to decline precipitously. It is hard to imagine a scenario in which southern Californians would cease to visit local beaches entirely. Nevertheless, significant declines in beach attendance could occur due to increases in beach closures, further deterioration of water quality, or loss of access to beach (e.g. the closure of a highway to a major beach, like Kanan-Dume Road or prolonged road repair like that on Pacific Coast Highway in Santa Monica). Even small reductions in beach attendance and expenditures could have large impacts on beach businesses, jobs, and even sales tax revenues. Of course, policies to improve water quality and access to local beaches could result in equally large gains in beach-related expenditures.

APPENDIX

Los Angeles and Orange County Beaches in Attendance Database

Beach Name	County
Abalone Cove	LA
Cabrillo	LA
Corral	LA
Dockweiler	LA
El Segundo	LA
Hermosa	LA
Las Tunas	LA
Malibu	LA
Manhattan	LA
Marina Del Rey	LA
Nicholas Canyon	LA
Pt. Dume County	LA
Redondo	LA
Santa Monica	LA
Topanga	LA
Torrance	LA
Venice	LA
Will Rogers	LA
Zuma	LA
Bolsa Chica	OC
Crystal Cove	OC
Doheny	OC
Huntington State	OC
San Clemente State	OC
San Onofre North	OC
San Onofre South	OC
Huntington City	OC
Laguna	OC
Newport	OC
San Clemente City	OC

USC and Chico Beaches in LA and OC

San Onofre South	SD
San Onofre North	SD
San Clemente State	OC
San Clemente City	OC
Poche Beach	OC
Capistrano	OC
Doheny	OC
Salt Creek	OC
Aliso Creek	OC
Laguna	OC
Crystal Cove	OC
Corona Del Mar	OC
Balboa	OC
Newport Beach	OC
Santa Ana River	OC
Huntington State	OC
Huntington City	OC
Bolsa Chica	OC
Sunset Beach	OC
Surfside	OC
Seal Beach	OC
Alamitos Bay	LA
Belmont Shores	LA
Long Beach	LA
Cabrillo	LA
Point Fermin	LA
Royal Palms	LA
Abalone Cove	LA
Torrance	LA
Redondo	LA
Hermosa	LA
Manhattan	LA
El Segundo	LA
Dockweiler	LA
Mother's Beach	LA
Venice	LA
Santa Monica	LA
Will Rogers	LA
Topanga	LA
Las Tunas	LA
Malibu (Surfrider)	LA
Dan Blocker	
(Corral)	LA
Point Dume	LA

Free Zuma	LA
Zuma Beach	LA
El Matador	LA
La Piedra	LA
El Pescador	LA
Nicholas Canyon	LA
Leo Carrillo	LA