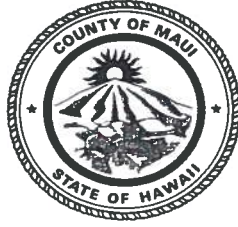


ALAN M. ARAKAWA
Mayor

STEWART STANT
Director

MICHAEL M. MIYAMOTO
Deputy Director



MICHAEL P. RATTE
Solid Waste Division

ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

RECEIVED
2016 NOV 10 PM 3:43

OFFICE OF THE MAYOR

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2050 MAIN STREET, SUITE 2B
WAILUKU, MAUI, HAWAII 96793

November 10, 2016

RECEIVED
2016 NOV 10 PM 3:59
OFFICE OF THE
COUNTY COUNCIL

Honorable Alan M. Arakawa
Mayor, County of Maui
200 South High Street
Wailuku, Hawaii 96793

APPROVED FOR TRANSMITTAL

Alan Arakawa 11/10/16
Mayor Date

For Transmittal to:

Honorable Elle Cochran
Chair, Infrastructure and Environmental Management Committee
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

Dear Chair Cochran:

SUBJECT: PLASTIC BAG REDUCTION (IEM-56)

The County is in receipt of the above Infrastructure and Environmental Management (IEM) Committee requested information dated November 2, 2016. Your request for copies of the annual reports is attached.

A brief history shows that in the first year, the survey consisted of four categories of customers. They were:

- 1) Customers who brought reusable bags
- 2) Customers using reusable bags
- 3) Customers using a combination of store and reusable bags
- 4) Customers who used no bags

The 2011 report shows that the retailers and customers were working to comply with the new requirement. As the report shows, paper bags, 45% were the primary option provided and utilized by customers. Of the surveyed customers, 25% did not use any type of bag.

The 2012 report shows a continued choice of using paper bags with the percentage of use increasing from 45% in 2011 to 60% in 2012. Interestingly the percentage of people not using any type of bag decreased, from 25% in 2011 to 15% in 2012. The use of reusable bags dropped from 26% to 21%.

The 2013 report shows a 1% increase in the percentage of people using reusable bags, a decrease in the percentage of people using paper bags, 60% down to 47%, an increase in the percentage of people using a combination of paper and reusable bags, 4% to 8% and an increase in the percentage of people not using any bag at all, 15% to 24%.

In the 2014 report, there was a slight change in the categories of customers. The customers who brought their own bags were categorized with those who did not take a bag. Both were seen as avoiding to use the paper bags. The three categories are as follows:

- 1) Customers who brought reusable bags or who did not use a bag
- 2) Customers using paper bags
- 3) Customers using a combination of paper and reusable bags

The 2014 report shows a decrease in percentage of customers that either brought reusable bags or who did not use a bag, from 45% to 25%, a decrease in percentage of customers using a combination of paper and reusable bags from 8% to 2% and a significant increase in percentage of customers using paper bags, from 47% to 74%.

We also wanted to take this opportunity to provide suggestions to modify the proposed modifications. Attached is our suggestion that focuses on reducing the use of paper bags.

Thank you for this request and we look forward to discussing the subject lease.

Sincerely,



STEWART STANT

Director, Department of Environmental Management

PAPER VERSES PLASTIC
A REPORT TO MAUI COUNTY COUNCIL
IN ACCORDANCE WITH THE PLASTIC BAG REDUCTION ORDINANCE
Hana Steel, Ph.D., Recycling Coordinator

METHOD

The method the Recycling Section Staff chose to gather data about *PAPER VERSES PLASTIC* was to conduct a Simple Random Sample Survey four times a year. The process of determining that this type of data gathering would give us the information needed was pretty straightforward. This survey is widely used to gather information about a population. An entire population is rarely surveyed because most often there is not enough time or money to gather information from everyone or everything in a population.

The Simple Random Sample Survey process has five stages:

- Defining the population of concern (shoppers)
- Specifying a set of items or events possible to measure (plastic, paper, both or no bag use)
- Determining the sample size (defined, and also increases with each survey)
- Implementing the sampling plan (developed by the Recycling Section)
- Sampling and data collecting (done four times a year)
- Analysis (continuous, every 3 months)

The goal is to find a representative sample of the people in Maui County. We can then draw conclusions about *PAPER VERSES PLASTIC* and of how the entire population is responding to the Plastic Bag Reduction ordinance. Anytime you survey a portion of a population, there will be some margin of error in the results, but when the margin of error is reduced to just a few percentage points, it often becomes of little concern. According to custominsight.com, the survey conducted by the Recycling Section yields a less than 2% error, with 99% confidence in results.

The first survey was done on January 11, 2011, and then again on April 11 and July 11th. Twelve stores throughout the County were surveyed to gather data about customer behavior and bag use; Safeway (3), Foodland (3), Walmart, Whole Foods, K-Mart, Times Markets (2), Sac-n-Save. More stores will be surveyed in the future. A total of 4,156 business customers were observed, at random times of day between 8 a.m. and 4 p.m. 75 staff hours (est.) were dedicated to gathering data and analyzing the results.

RESULTS/FINDINGS

The ordinance requires a report on paper and plastic bag use, but to report on just that and only that would give a false and misleading picture of consumer behavior. An extraordinary large number of customers, 1032, exited stores with no bag at all. This accounts for approximately 25% of the total number of customers observed. This should not come as a surprise, given the fact that the vast majority of people who talk to Recycling Section staff about the ordinance report difficulty in remembering to take their bags into the store with them. Therefore, it is safe to conclude that 25% of the total surveyed want to do the right thing, but they just forgot to take their reusable bags into the store with them or they were just going in for something they could carry out in their hands. A very small number, 164 customers, exited the store with a combination of reusable bags and paper bags. It is fairly safe to conclude that these customers want to use re-usable bags, but they just did not bring enough bags with them.

To date, the survey reveals that 51.2% of all customers exit a store with a reusable bag or no bag. There is a 4% increase of customers exiting with paper bags from 1/11/11 to 7/11/11. The chart on the next page provides specific information.

PLASTIC BAG REDUCTION SURVEY RESULTS SUMMARY

Date of Survey	Total Number of Customers Surveyed	Customers Who Brought Reusable Bag	Customers Using Paper Bags	Customers Using a Combination of Paper and Reusable Bags	Customers Who Used No Bag At All
1/11/11	1764	554	788	84	338
	100%	31.4%	44.7%	4.8%	19.1%
4/11/11	1044	228	516	43	257
	100%	21.9%	49.4%	4.1%	24.6%
7/11/11	967	202	494	26	245
	100%	20.9%	51.1%	2.7%	25.3%
Add'l Stores	385	114	68	11	192
	100%	29.6%	17.7%	2.8%	49.9%
Total	4160	1098	1866	164	1032
	100%	26.4%	44.9%	3.9%	24.8%

PLASTIC BAG REDUCTION ORDINANCE SURVEY RESULTS
JANUARY 11, 2011

Location, Time, and Surveyor	Total Number of Customers Surveyed	Customers Who Brought Reusable Bag	Customers Using Paper Bags	Customers Using a Combination of Paper and Reusable Bags	Customers Who Used No Bag At All
Kahului Safeway 11:30-12:30 pm SA	263	90	104	6	63
	100%	34.2%	39.5%	2.3%	24%
Waiehu Sack-n Save 10:00-11:00 am SA	82	20	43	2	17
	100%	24.4%	52.4%	2.4%	20.8%
Kahului Foodland 1:45-2:45 pm SA	170	62	80	6	22
	100%	36.5%	47.1%	3.5%	12.9%
Lahaina Foodland 1:00-2:00 pm CM	237	73	99	19	46
	100%	30.8%	41.8%	8%	19.4%
Lahaina Times Market 10:00-11:00 am CM	150	40	65	11	34
	100%	26.7%	43.3%	7.3%	22.7%
Lahaina Safeway 11:20-12:20 pm CM	228	89	67	23	49
	100%	39%	29.4%	10.1%	21.5%
Kihei Times Market 1:00-2:00 pm IC	130	34	64	9	23
	100%	26.2%	49.2%	6.9%	17.7%
Kihei Foodland 2:15-3:15 pm IC	192	44	98	3	47
	100%	22.9%	51%	1.6%	24.5%
Kihei Safeway 3:20-4:20 pm IC	312	102	168	5	37
	100%	32.7%	53.8%	1.6%	11.9%
Totals	1764	554	788	84	338
	100%	31.4%	44.7%	4.8%	19.1%

PLASTIC BAG REDUCTION ORDINANCE SURVEY RESULTS
APRIL 11, 2011

Location, Time, and Surveyor	Total Number of Customers Surveyed	Customers Who Brought Reusable Bag	Customers Using Paper Bags	Customers Using a Combination of Paper and Reusable Bags	Customers Who Used No Bag At All
Kahului Safeway 12:00-1:00 pm SA	88	22	28	7	31
	100%	25%	31.8%	8%	35.2%
Waiehu Sack-n Save 9:30-10:30 am SA	70	27	19	5	19
	100%	38.6%	27.2%	7.1%	27.1%
Kahului Foodland 3:00-4:00 pm SA	107	33	53	3	18
	100%	30.9%	49.5%	2.8%	16.8%
Lahaina Foodland 11:50-12:50 pm CM	73	12	37	2	22
	100%	16.4%	50.7%	2.8%	30.1%
Lahaina Times Market 9:20-10:20 am CM	78	20	31	3	24
	100%	25.6%	39.7%	3.9%	30.8%
Lahaina Safeway 10:35-11:35 am CM	142	45	57	8	32
	100%	31.7%	40.2%	5.6%	22.5%
Kihei Times Market 10:15-11:15 am IC	119	12	70	2	35
	100%	10.1%	58.8%	1.7%	29.4%
Kihei Foodland 11:30-12:30 pm IC	214	30	126	6	52
	100%	14%	58.9%	2.8%	24.3%
Kihei Safeway 8:30-9:30 am IC	153	27	95	7	24
	100%	17.6%	62.1%	4.6%	15.7%
Totals	1044	228	516	43	257
	100%	21.9%	49.4%	4.1%	24.6%

PLASTIC BAG REDUCTION ORDINANCE SURVEY RESULTS
JULY 11, 2011

Location, Time, and Surveyor	Total Number of Customers Surveyed	Customers Who Brought Reusable Bag	Customers Using Paper Bags	Customers Using a Combination of Paper and Reusable Bags	Customers Who Used No Bag At All
Kahului Safeway SA	98	42	29	8	19
	100%	42.8%	29.6%	8.2%	19.4%
Waiehu Sack-n Save SA	65	22	27	4	12
	100%	33.8%	41.5%	6.2%	18.5%
Kahului Foodland SA	76	25	29	12	10
	100%	32.9%	38.2%	15.8%	13.1%
Lahaina Foodland 11:45-12:45 pm CM	144	22	83	0	39
	100%	15.3%	57.6%	0%	27.1%
Lahaina Times Market 9:00-10:00 am CM	109	11	67	0	31
	100%	10.1%	61.5%	0%	28.4%
Lahaina Safeway 10:15-11:15 am CM	111	8	72	2	29
	100%	7.2%	64.9%	1.8%	26.1%
Kihei Times Market IC	92	23	56	0	13
	100%	25%	60.9%	0%	14.1%
Kihei Foodland 7:45-8:45 am IC	127	19	56	0	52
	100%	15%	44.1%	0%	40.9%
Kihei Safeway IC	145	30	75	0	40
	100%	20.7%	51.7%	0%	27.6%
Totals	967	202	494	26	245
	100%	20.9%	51.1%	2.7%	25.3%

PLASTIC BAG REDUCTION ORDINANCE SURVEY RESULTS
ADDITIONAL BUSINESSES

Location, Date, and Surveyor	Total Number of Customers Surveyed	Customers Who Brought Reusable Bag	Customers Using Paper Bags	Customers Using a Combination of Paper and Reusable Bags	Customers Who Used No Bag At All
Wal-Mart 4/11/11 HS	130	55	3	3	69
	100%	42.3%	2.3%	2.3%	53.1%
K-Mart 4/11/11 HS	137	32	31	5	69
	100%	23.4%	22.6%	3.6%	50.4%
Whole Foods 7/11/11 SA	118	27	34	3	54
	100%	22.9%	28.8%	2.5%	45.8%
Total	385	114	68	11	192
	100%	29.6%	17.7%	2.8%	49.9%

2012

**PAPER VERSES REUSABLE REPORT
IN ACCORDANCE WITH THE PLASTIC BAG REDUCTION ORDINANCE**

METHOD

The method the Recycling Section Staff chose to gather data about *PAPER VERSES REUSABLE* was to conduct a Simple Random Sample Surveys throughout the year. The process of determining that this type of data gathering provides the required information needed. This survey method is widely used to gather information about a population.

The Simple Random Sample Survey process has five stages:

- Defining the population of concern (shoppers)
- Specifying a set of items or events possible to measure (reusable, paper, store bag, both, or no bag use)
- Determining the sample size (defined, and also increases with each survey)
- Implementing the sampling plan (developed by the Recycling Section)
- Sampling and data collecting (done throughout the year)
- Analysis (continuous)

The goal is to find a representative sample of the people in Maui County. We can then draw conclusions about *PAPER VERSES REUSABLE* and project how the entire population is responding to the Plastic Bag Reduction ordinance within an acceptable margin of error in the results.

The Solid Waste Division, Recycling Section staff completed a Holiday Shopper Survey in December 2011 that included 16 stores. Also conducted was a second survey in April 2012 that included 16 stores. See attached for store locations.

RESULTS SUMMARY

- The ordinance requires a report on paper and plastic bag use. Additional data was also gathered and presented to report on additional components of consumer behavior.
- The following charts provide specific information As well as a year to year comparison.

PLASTIC BAG REDUCTION SURVEY RESULTS SUMMARY

DATE OF SURVEY	TOTAL NUMBER OF CUSTOMERS SURVEYED	CUSTOMERS WHO BROUGHT REUSABLE BAG	CUSTOMERS USING PAPER BAGS	CUSTOMERS USING A COMBINATION OF PAPER & REUSABLE BAGS	CUSTOMERS WHO USED NO BAG AT ALL
HOLIDAY SHOPPER SURVEY DECEMBER 2011	646	115	349	21	161
		17.8%	54.0%	3.3%	24.9%
APRIL 2012 SURVEY	1587	343	998	74	172
		21.6%	62.9%	4.7%	10.8%
TOTAL	2233	458	1347	95	333
		20.5%	60.3%	4.3%	14.9%

**PLASTIC BAG REDUCTION SURVEY RESULTS SUMMARY
FISCAL YEAR 2011 TO FISCAL YEAR 2012 COMPARRISON**

FISCAL YEAR	2011		2012		PERCENT INCREASE/DECREASE
	QTY	%	QTY	%	%
TOTAL NUMBER OF CUSTOMERS SURVEYED	4160		2233		
CUSTOMERS USING REUSABLE BAGS	1098	26.4%	458	20.5%	5.9% decrease
CUSTOMERS USING PAPER BAGS	1866	44.9%	1347	60.3%	15.4% Increase
CUSTOMERS USING A COMBINATION OF PAPER AND REUSABLE BAGS	164	3.9%	95	4.3%	0.4% Increase
CUSTOMERS USING NO BAG AT ALL	1032	24.8%	333	14.9%	9.9% Decrease

**PLASTIC BAG REDUCTION ORDINANCE SURVEY DATA
HOLIDAY SHOPPERS DECEMBER 9, 2011**

LOCATIONS	TOTAL NUMBER OF CUSTOMERS SURVEYED	CUSTOMERS WHO BROUGHT REUSABLE BAG	CUSTOMERS USING PAPER BAGS	CUSTOMERS USING A COMBINATION OF PAPER AND REUSABLE BAGS	CUSTOMERS WHO USED NO BAG AT ALL
Safeway 9-10 am	88	24	36	7	21
		27.2%	40.9%	8.0%	23.9%
ROSS 9-10 am	132	30	26	7	69
		22.7%	19.7%	5.3%	52.3%
Sports Authority 9:15-10:15 am	35	0	23	0	12
		0%	65.7%	0%	34.3%
Old Navy 9:15-10:15 am	22	6	6	0	10
		27.3%	27.3%	0%	45.4%
American Eagle Outfitters 11:30-12:15 pm	5	1	4	0	0
		20.0%	80.0%	0%	0%
Samrio 11:30-12:15 pm	4	2	2	0	0
		50.0%	50.0%	0%	0%
The Walking Company 11:30-12:15 pm	1	1	0	0	0
		100.0%	0%	0%	0%
Hallmark 11:30-12:30 pm	51	7	37	0	7
		13.7%	72.6%	0%	13.7%
Findz 11:30-12:30 pm	23	2	13	0	8
		8.7%	56.5%	0%	34.8%
Macy's Women's 11:30-12:30 pm	186	30	125	6	25
		16.2%	67.2%	3.2%	13.4%
Macy's Home, Men & Children 12:35-1:05 pm	27	4	20	1	2
		14.8%	74.1%	3.7%	7.4%
Sears 12:35-1:05 pm	26	1	23	0	2
		3.8%	88.5%	0%	7.7%
Discount Paradise 12:35-1:05 pm	6	0	5	0	1
		0%	83.3%	0%	16.7%
Wet Seal 12:35-1:05 pm	10	2	7	0	1
		20.0%	70.0%	0%	10.0%
Ben Franklins 12:35-1:05 pm	30	5	22	0	3
		16.7%	73.3%	0%	10.0%
TOTALS:	646	115	349	21	161
		17.8%	54.0%	3.3%	24.9%

**PLASTIC BAG REDUCTION ORDINANCE SURVEY DATA
APRIL 19 THROUGH 26, 2012**

LOCATIONS AND TIME	TOTAL NUMBER OF CUSTOMERS SURVEYED	CUSTOMERS WHO BROUGHT REUSABLE BAG	CUSTOMERS USING PAPER BAGS	CUSTOMERS USING A COMBINATION OF PAPER AND REUSABLE BAGS	CUSTOMERS WHO USED NO BAG AT ALL
Longs Drugs-Kihei 3-4 pm	238	36	138	0	64
		15.1%	58.0%	0%	26.9%
VIP Cash n Carry 12:30-1:30 pm	52	8	39	4	1
		15.4%	75.0%	7.7%	1.9%
Longs Drugs-Kahului 11:30-12:30 pm	93	26	62	2	3
		28.0%	66.6%	2.2%	3.2%
Whole Foods 10:30-11:30 pm	55	13	37	3	2
		23.6%	67.3%	5.5%	3.6%
Safeway-Kahului 1:30-2:30 pm	114	35	71	6	2
		30.7%	62.3%	5.3%	1.8%
Times Market-Kihei 4-5 pm	108	20	84	1	3
		18.5%	77.8%	0.9%	2.8%
Foodland-Kihei 3-4 pm	105	13	87	4	1
		12.4%	82.9%	3.8%	1.0%
Sac-n-Save-Wailuku 4:30-5:30 pm	102	19	81	2	0
		18.6%	79.4%	2.0%	0%
Foodland-Pukalani 3-4 pm	117	32	78	3	4
		27.4%	66.6%	2.6%	3.4%
Longs Drugs-Lahaina 10:30-12 pm	88	15	73	0	0
		17.0%	83.0%	0%	0%
Safeway-Lahaina 9-10 am	86	13	71	2	0
		15.1%	82.6%	2.3%	0%
Safeway-Kihei 3-4 pm	151	35	71	18	27
		23.2%	47.0%	11.9%	17.9%
Down to Earth-Kihei 4-5 pm	33	5	13	4	11
		15.2%	39.4%	12.1%	33.3%
Pukalani Superette 3-4 pm	83	22	34	9	18
		26.5%	41.0%	10.8%	21.7%
Foodland-Lahaina 9:30-10:30 am	83	26	31	7	19
		31.3%	37.3%	8.4%	22.9%
Times Market-Lahaina	79	25	28	9	17
		31.6%	35.4%	11.4%	21.5%
Totals:	1587	343	998	74	172
		21.6%	62.9%	4.7%	10.8%

2013

**PAPER VERSES REUSABLE REPORT
IN ACCORDANCE WITH THE PLASTIC BAG REDUCTION ORDINANCE**

METHOD

The method the Recycling Section Staff chose to gather data about *PAPER VERSUS REUSABLE* was to conduct Simple Random Sample Surveys throughout the year. This survey method is widely used to gather information about a population and provides the County of Maui with necessary statistical information.

The Simple Random Sample Survey process has five stages:

- Defining the population of concern (shoppers)
- Specifying a set of items or events possible to measure (reusable, paper, store bag, both, or no bag use)
- Determining the sample size (defined, and also increases with each survey)
- Implementing the sampling plan (developed by the Recycling Section)
- Sampling and data collecting (done throughout the year)
- Analysis (continuous)

The goal is to find a representative sample of the people in Maui County. We can then draw conclusions about *PAPER VERSUS REUSABLE* and project how the entire population is responding to the Plastic Bag Reduction ordinance within an acceptable margin of error in the results.

RESULTS SUMMARY

- The ordinance requires a report on paper and plastic bag use. Additional data was also gathered and presented to report on additional components of consumer behavior.
- The following charts provide specific information as well as a year to year comparison.
- Customers who use no bags at all: This is an interesting category because it may not be a true indicator of behavior change. We noticed in the cart that items that were not in a bag may have been items that were never bagged, like a case of soda or beer or a gallon of milk or juice. Also, in many cases banks and/or pharmacies are located within in the stores. A customer doing banking or just ordering a prescription may exit a store without a bag. Since we never approach customers, we can't confirm if there is a purchased item in a purse or back-pack, or pocket, or if they were in the store to do something other than purchase goods.
- On Molokai there is a common practice of re-using store boxes as carry-out containers. For instance at the Misaki Store 34% of shoppers re-used boxes provided at the front of the store and at Friendly Market 12 % did the same. On Lanai at the Pine Isle Market 18% of shoppers also utilized store provided boxes for carry-out purposes.

**PLASTIC BAG REDUCTION SURVEY RESULTS SUMMARY
FISCAL YEAR 2011 TO FISCAL YEAR 2013 COMPARISON**

FISCAL YEAR	2011		2012		2013		% Change Between 2012-2013
	QTY	%	QTY	%	QTY	%	
TOTAL NUMBER OF CUSTOMERS SURVEYED	4160		2233		1569		
CUSTOMERS USING REUSABLE BAGS	1098	26.4%	458	20.5%	331	21.1%	Increased 0.6%
CUSTOMERS USING PAPER BAGS	1866	44.9%	1347	60.3%	736	46.9%	Decreased 13.4%
CUSTOMERS USING A COMBINATION OF PAPER AND REUSABLE BAGS	164	3.9%	95	4.3%	130	8.3%	Increased 4.0%
CUSTOMERS USING NO BAG AT ALL	1032	24.8%	333	14.9%	372	23.7%	Increased 8.8%

PLASTIC BAG REDUCTION ORDINANCE SURVEY RESULTS
August 2012 - 2013

Location	Total Number of Customers Surveyed	Customers Who Brought Reusable Bag	Customers Using Paper Bags	Customers Using a Combination of Store and Reusable Bags	Customers Who Used No Bag At All
Whole Foods	110	18	38	10	44
		16.4%	34.5%	9.1%	40.0%
Lahaina Safeway	133	34	68	15	16
		25.6%	51.1%	11.3%	12.0%
Lahaina Foodland	131	32	63	17	19
		24.4%	48.1%	13.0%	14.5%
Pukalani Superette	80	23	35	6	16
		28.8%	43.8%	7.5%	20.0%
Pukalani Foodland	90	12	51	16	11
		13.3%	56.7%	17.8%	12.2%
Kihei Safeway	218	52	116	29	21
		23.9%	53.2%	13.3%	9.6%
Kihei Foodland	167	12	102	10	43
		7.2%	61.1%	6.0%	25.7%
Kahului Safeway	198	33	101	7	57
		16.7%	51.0%	3.5%	28.8%
Kahului Foodland	126	27	69	18	12
		21.4%	54.8%	14.3%	9.5%
Wailuku Sack N Save	157	16	72	2	67
		10.2%	45.9%	1.3%	42.7%
Musaki Store, Molokai	39	11	1	0	27
		28.2%	2.6%	0%	69.2%
Friendly Market, Molokai	45	22	8	0	15
		48.9%	17.8%	0%	33.3%
Pine Isle Market, Lanai	33	15	4	0	14
		45.5%	12.1%	0%	42.4%
Richard's Market, Lanai	42	24	8	0	10
		57.1%	19.0%	0%	23.8%
Totals:	1569	331	736	130	346
		21.1%	46.9%	8.3%	23.7%

2014

PAPER VERSUS REUSABLE REPORT IN ACCORDANCE WITH THE PLASTIC BAG REDUCTION ORDINANCE

METHOD

The method the Recycling Section Staff chose to gather data about *PAPER VERSUS REUSABLE* was to conduct Simple Random Sample Surveys throughout the year. This survey method is widely used to gather information about a population and provides the County of Maui with necessary statistical information.

The Simple Random Sample Survey process has five stages:

- Defining the population of concern (shoppers)
- Specifying a set of items or events possible to measure (reusable, paper, store bag, both, or no bag use)
- Determining the sample size (defined, and also increases with each survey)
- Implementing the sampling plan (developed and implemented by the Recycling Section)
- Sampling and data collecting (done during each fiscal year)
- Analysis (continuous)

The goal is to find a representative sample of the people in Maui County. We can then draw conclusions about *PAPER VERSUS REUSABLE* and project how the entire population is responding to the Plastic Bag Reduction ordinance within an acceptable margin of error in the results.

RESULTS SUMMARY

The ordinance requires an annual report on paper and plastic bag use. Additional data or notations may also be presented in order to report on additional components of consumer behavior.

- A visual inspection of plastic bag landfill litter or lack thereof, reveals that this law, as a litter prevention tool, works. A visual inspection of roadside litter and trees also indicated the success of this law.
- “Customers who use no bags at all” This category, previously surveyed, may not be a true indicator of behavior change. In many cases banks and/or pharmacies are located within in the stores. A customer doing banking or just ordering a prescription may exit a store without a bag. Since we never approach customers, we can't confirm if there is a purchased item in a purse or back-pack, or pocket, or if they were in the store to do something other than purchase carry-out goods.
- We noticed that items in the cart that were not in a bag may have been items that traditionally are never bagged, like a case of soda or beer or a gallon of milk or juice. For FY 2014 we did not count these items that are not traditionally bagged. The “Reusable/No Bag” category is a new combined category for FY 2014. This category is important because it gives a clearer indication of percentage of consumers who have “got the message,” so to speak, or modified their behavior to be in compliance with the intent of the law.
- On Molokai there is a common practice of re-using store boxes as carry-out containers (FY 13 survey). For instance at the Misaki Store 34% of shoppers re-used boxes provided at the front of the store and at Friendly Market 12% did the same. On Lanai at the Pine Isle Market 18% of shoppers also utilized store-provided boxes for carry-out purposes.

- This year only, Costco, Kmart and Wal-Mart were surveyed to indicate how corporate policy dictates consumer behavior. Costco doesn't give out bags and Wal-Mart sells re-usable bags, originally for \$.25 and now for \$.50. This, according to the store manager, creates a profit base for the store and provides free advertising. It was noted that at every other store surveyed, at least one Wal-Mart reusable bag was seen. Data from these three stores is listed separately, so as not to skew the data comparison from previous years.
- The new Safeway store in Wailuku has self-serve check-out stands. It was noted that those who checked out groceries themselves were less likely to use paper bags. This could be happening for several reasons: they carried the items to the check-out stand, why not carry them out; there were relatively few items and easy to carry out; the goods were not automatically bagged by the checker.
- It has been observed over the years that some stores train cashiers to automatically bag items without asking the customer if they need a bag. In other stores the cashiers always asks the customer if s/he needs a bag. This indicates again how corporate policy dictates consumer behavior.
- Store managers have stated that they are afraid to just stop giving out paper bags or charge \$.25 for fear of losing customers. Legislation requiring stores to charge \$.25 per bag, as other communities have done, could even the playing field for the business sector. Source reduction of paper bags would decrease paper bag litter at the landfill and possibly assist in reducing landfill violations for litter. BYOB is considered sustainable, continuously shipping in and landfilling single-use paper bags is not.
- Some stores offer a BYOB rebate, but this policy is not well-publicized.
- Paper bag use is increasing. Behavior modification of a population of 140,000, not to mention the tourist defacto population, must be continuous and ongoing. Budget constraints have prevented an on-going BYOB behavior modification campaign.
- The following charts provide specific information as well as a year-to-year comparison.

**PLASTIC BAG REDUCTION SURVEY RESULTS SUMMARY
FISCAL YEAR 2011 TO FISCAL YEAR 2013 COMPARISON**

FISCAL YEAR	2011	2012	2013	2014	% Change Between 2013- 2014
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	QTY	%	QTY	%	QTY	%	QTY	%	
TOTAL NUMBER OF CUSTOMERS SURVEYED	4160		2233		1569		1650		
CUSTOMERS USING REUSABLE BAGS	1098	26.4%	458	20.5%	331	21.1%			
CUSTOMERS USING PAPER BAGS	1866	44.9%	1347	60.3%	736	46.9%	1217	73.8%	Increased 26.1%
CUSTOMERS USING A COMBINATION OF PAPER AND REUSABLE BAGS	164	3.9%	95	4.3%	130	8.3%	26	1.6%	Decreased 6.8%
CUSTOMERS USING NO BAG AT ALL	1032	24.8%	333	14.9%	372	23.7%			
FY 14 NEW CATEGORY CUSTOMERS WHO BOUGHT A REUSABLE BAG OR DID NOT TAKE A BAG							407	24.7%	Decreased 19.2%

Note: FY 14 NEW CATEGORY = (CUSTOMERS USING REUSABLE BAGS + CUSTOMERS USING NO BAG AT ALL)

Location	Total Number of Customers Surveyed	Customers Who Brought Reusable Bag or Did Not Use a Bag	Customers Using Paper Bags	Customers Using a Combination of Store and Reusable Bags
Kahului Safeway	63	7	54	2
		11.1%	85.7%	3.2%
Pukalani Superette	53	12	41	0
		22.6%	77.4%	0.0%
Pukalani Foodland	39	11	28	0
		28.2%	71.8%	0.0%
Wailuku Safeway	180	48	132	0
		26.7%	73.3%	0.0%
Wailuku Sac-N-Save	36	21	15	0
		58.3%	41.7%	0.0%
Kahului Foodland	189	43	144	2
		22.8%	76.2%	1.1%
Lahaina Foodland	54	13	38	3
		24.1%	70.4%	5.6%
Lahaina Times Market	104	22	80	2
		21.2%	76.9%	1.9%
Lahaina Safeway	150	38	110	2
		25.3%	73.3%	1.3%
Kihei Times Market	123	23	98	2
		18.7%	79.7%	1.6%
Kihei Foodland	162	36	123	3
		22.2%	75.9%	1.9%
Kihei Safeway	280	64	206	10
		22.9%	73.6%	3.6%
Napili Market	57	14	43	0
		24.6%	75.4%	0.0%
Whole Foods	160	55	105	0
		34.4%	65.6%	0.0%
Totals:	1650	407	1217	26
		24.7%	73.8%	1.6%
Big Box Stores				
Costco	232	232	0	0
Kmart	36	18	18	0
Walmart	382	382	0	0
Totals:	650	632	18	0
		97.2%	2.8%	0.0%

To: IEM Committee

Subject: A Bill for Ordinance Amending Chapter 20.18 Maui County Code relating to Plastic Bag Reduction

Plastic Bag Ban- DEM/EP&S Suggestion

For your consideration, please see the proposed wording below and consider amending the current wording of the bill as follows.

Modify section 6B to read:

Nothing in this chapter shall preclude a business from making reusable [or recyclable paper bags] available for sale {or without charge to its customers at the point of sale for the purpose of transporting groceries or other goods.

Add a new Section 6C to read:

Vendors providing paper bags to its customers for the purpose of transporting groceries or other goods are required to charge customers a fee for each paper bag taken not less than 5 cents and not to exceed 25 cents per bag. Any fees collected for paper bags are the property of the vendor.

The reasons are:

- 1) The DOH ISWMP State law signed in 1991 defines the hierarchy for SW Management. In this order, the first activity to employ is source reduction which is then followed by reuse, then recycling & composting, followed by Waste to Energy technologies and finally landfilling. This change is in line with that goal.
- 2) A small per bag fee imposed upon customers who choose to take a bag will be very powerful motivator and will assist with quickly modifying the behavior of over 150K Maui County residents and visitors by incentivizing them to choose reusable bag options over accepting unnecessary paper bags. This tactic has been used in many cities in the United States and also by some select retailers who do not distribute plastic bags and who also charge for paper bags, such as Trader Joe's.
- 3) The redemption/return of the small HI5 fee has resulted in a 12 year average redemption rate of 71% of the total HI5 beverage containers sold in the state of Hawaii.

4) During the plastic bag surveys conducted by DEM from 2011 -2014 at most of the grocery and large box stores on Maui, we learned from store managers that paper bags cost significantly more than plastic bags to purchase, they cost much more to ship as they are heavier and they require a lot more room to store since they are not very compact. As a result, the stores would prefer to not give out so many free paper bags. When we suggested they *can* charge for paper bags, all the store managers said their corporate offices were not going to let them be the first to do this. Nevertheless they expressed the strong desire to charge customers for paper bags but only if the County of Maui were to require all retailers to charge for them.

5) Other States with bag bans and charges: Alaska, Colorado, Florida, Iowa, Maine, Massachusetts, New Mexico, New York, N. Carolina, Oregon, Rhode Island, Washington DC, Washington. Other Countries with bag bans: 18 and growing.

6) **Resources:** other municipalities who have implemented charges on bags:

State Plastic and Paper Bag Legislation

<http://www.ncsl.org/research/environment-and-natural-resources/plastic-bag-legislation.aspx>

This site lists dozens of California cities that charge for plastic or paper bags.

<http://www.cawrecycles.org/list-of-local-bag-bans/>

New York charges for paper and plastic bags:

<http://money.cnn.com/2016/05/05/pf/plastic-bags-new-york-city/>

San Francisco charges 10 cents for paper and plastic bags:

<http://sfenvironment.org/article/checkout-bag-ordinance>

Comprehensive list of US cities and municipalities and 18 international countries that have implemented bag bans, many with charges. Most ordinances listed here are plastic bag bans and the most effective ones also include a small fee on paper bags to encourage more reusable bags. The ordinances listed here that cover a fee on both plastic and paper bags are in Washington DC; Montgomery County MD; various Colorado communities, Portland, Maine; and Brownsville, Texas.

<http://www.surfrider.org/pages/plastic-bag-bans-fees>