February 5, 2014

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001

Final DSMD Signed

MEMORANDUM FOR	Jay Ryan Chief, Division of Consumer Expenditure Surveys Office of Prices and Living Conditions Bureau of Labor Statistics
Through:	Carolyn Pickering Survey Director, Consumer Expenditure Survey U.S. Census Bureau
From:	Ruth Ann Killion Chief, Demographic Statistical Methods Division U.S. Census Bureau
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Subject:	Consumer Expenditure Surveys Sample Allocation for the 2010 Census-Based Sample Design

Introduction

This memorandum gives the sample sizes for the 91 primary sampling units (PSU) in the Consumer Expenditure Survey's (CE) upcoming 2010 Census-based sample design. They are scheduled to be used starting in 2015. The CE program budget allows for the selection of 12,000 addresses per year for the Interview survey and 12,000 addresses per year for the Diary survey. This sample size is expected to yield 6,900 interviewed households per quarter for the Interview survey and 6,900 interviewed households per year for the Diary survey. This memorandum describes the allocation of 12,000 addresses to the 91 individual PSUs for both the Interview and Diary surveys. The 12,000 addresses are from the unit frame only, as the sampling for the group quarters frame will be handled separately. Much of this memorandum is from Swanson (2013).

Background

Research by Consumer Expenditure Statistical Methods Division (CESMD) and Demographic Statistical Methods Division (DSMD) in recent years showed that allocating the nationwide sample of households to PSUs directly proportional to the populations

they represent (i.e. their stratum populations) is a simple and effective way of producing expenditure estimates with small variances at the nationwide level. It is how CE's sample has always been allocated, and the research confirmed its appropriateness (Swanson 2009a, Swanson 2009b, and Killion 2012). This allocation process is formalized in the language of mathematics by expressing the process as a constrained optimization problem.

One subtle change in the upcoming sample design is that *addresses* will be allocated instead of *usable interviews*. In the past the nationwide target number of usable interviews was allocated to individual PSUs in a two-step process – by first allocating them to CPI index areas[1], and then sub-allocating them to individual PSUs. Then a nonresponse adjustment was made to inflate the number of usable interviews up to the number of addresses that needed to be selected. This time the allocation process will be done in a similar manner, except that *addresses* will be allocated instead of *usable interviews*. This change will move the nonresponse adjustment to an earlier step in the process (Johnson-Herring 2001, Swanson 2002, and Johnson-Herring, Krieger, Swanson 2005).

A Mathematical Description of the Allocation Process

Here is a mathematical description of the allocation process for the upcoming 2010 Census-based sample design. Let

$$p_i = \text{population of the } i\text{-th index area,}$$
$$r_i = \text{participation rate of the } i\text{-th index area } (0 \le r_i \le 1), \text{ and}$$
$$n_i = \text{number of addresses allocated to the } i\text{-th index area.}$$

We assume the p_i's and r_i's are given, and we want to find the n_i's that minimize CE's nationwide variance. The n_i's add up to 12,000. As mentioned above, the CESMD/DSMD research showed that allocating the nationwide sample to individual PSUs directly proportional to the populations they represent (their stratum populations) is a simple and effective way of producing expenditure estimates with small variances at the nationwide level. This suggests solving the following constrained least squares problem:

Given values of p_i and r_i for every index area i, find the values of n_i that…

$$\text{Minimize} \quad \sum_{i \in USA} \left(\frac{n_i r_i}{NR} - \frac{p_i}{p} \right)^2$$

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[1] The 41 index areas consist of the 23 self-representing PSUs plus the 18 non-self-representing division-size classes (9 Census divisions x 2 size classes). The 2010 sample design brought about a change in the geographic areas used to stratify PSUs (from four Census regions to nine Census divisions) and the number of size classes (from four to three). The first three characters of a PSU code (the size class, the Census region, and the Census division) identify the index area. For example, the PSU codes N12C, N12D, N12E, and N12F all have the same first three characters and hence belong to the same index area, N120. In the 2000 design, only the first two characters are required to identify the index area. For more information on the differences in the PSU codes in the 2000 and 2010 design, refer to Ryan (2012).

$$\text{Subject to:} \quad \sum_{i \in USA} n_i = 12{,}000$$

$$n_i r_i \geq 80 \qquad \text{for all } i \in urban \text{ index areas}$$

$$n_i r_i \geq 40 \qquad \text{for all } i \in rural \text{ index areas}$$

Here $p = \sum_{i \in USA} p_i$ is the total U.S. population; $n_i r_i$ is the expected number of interviewed households in the i-th index area; and $NR = \sum_{i \in USA} n_i r_i$ is the expected number of interviewed households nationwide. The ratio p_i/p is the i-th index area's proportion of the total population, and the ratio $n_i r_i/NR$ is the i-th index area's proportion of the total number of interviewed households. Minimizing the sum of squared differences produces an allocation as close to population proportionality as possible.

The minimum required sample size for rural index areas is smaller than the rest of the index areas in order to avoid over allocating to these index areas as well as have their sample sizes more in-line with their populations.

Computing the participation rates

Participation rates ($0 \leq r_i \leq 1$) are required in the optimization problem in order to determine the expected number of interviewed households in the i-th index area ($n_i r_i$). The participation rate is the eligibility rate times the response rate. It is the percent of sample addresses from which usable interviews are collected.

Computing the response rates

The response rate is the number of interviews divided by the number of eligible cases,

$$Response\,Rate = \frac{Interviews}{Eligible\,cases}$$

where Eligible cases = Interviews + Type A non-interviews.

DSMD computed the response rates for each index area using interview outcomes of the past five years (2008 – 2012), and selecting unit frame cases located in the counties for the 2010 sample design. The Interview survey response rates include interviews one to five. The Diary survey response rate is per household unit and not per interview since *addresses* are allocated instead of *usable interviews*. Since response rates have been decreasing over time, the 5-year historical response rates are reduced by 5 percentage points in order to account for this downward trend.

Some counties in sample for the 2010 design do not have historical data, this is because some of the counties selected are new for the 2010 sample design and are not in the current sample design. For such instances, the response rate is computed using data from counties within the

same index area, and are also in the current sample design. For example, the 2010 sample design includes only Addison County, Vermont for the index area R110. This county is not in the current sample design and therefore has no historical data. However, Somerset County, Maine is in the same index area and is in the current sample design. Hence, the response rate for index area R110 uses historical data from Somerset County, Maine.

Attachment C shows the 5-year historical response rates per index area, without the reduction of 5 percentage points.

Computing the eligibility rates

The eligibility rate is the percent of addresses with occupied housing units,

$$Eligibility\, rate = \frac{Eligible\, cases}{Total\, cases \in the\, sample}$$

where Eligible cases = Interviews + Type A non-interviews.

For the 2010 sample redesign, CE will be using a frame based on the Census Bureau's Master Address File (MAF); hence, the eligibility rates reflect the MAF and not historical CE interviews. As a result, DSMD computed the eligibility rates from the American Community Survey (ACS) sample, which uses the MAF as its frame. The computation is based on five years of ACS control files (2008-2012), and applies ACS base weights and CAPI sub sampling factors. The eligibility rate per index area is the weighted average of the PSU eligibility rates.

The Sub-Allocation Process

After allocating the nationwide sample of 12,000 addresses to the 41 index areas, the next step is sub-allocating to the individual PSUs in the index area. It is done directly proportional to each PSU's share of the index area's population. For example, index area N120 represents 15,036,701 people and Pittsburgh represents 27.04% of the index area's population so it is given 27.04% of its sample. Likewise, Buffalo represents 23.16% of N120's population so it is given 23.16% of its sample, Rochester is given 26.10% of its sample, and Reading is given 23.69% of its sample.

Index Area	PSU Code	PSU Name	Stratum Population	Percent of Total
N120	N12C	Pittsburgh, PA	4,065,877	27.04%
N120	N12D	Buffalo-Cheektowaga-Niagara Falls, NY	3,483,174	23.16%
N120	N12E	Rochester, NY	3,925,318	26.10%
N120	N12F	Reading, PA	3,562,332	23.69%
N120	**—**	**Total**	**15,036,701**	**100.00%**

Attachment B shows the results of the sub-allocation.

Number of addresses that need to be sampled

DSMD draws a single sample of addresses for both surveys, with the even-numbered addresses going to the Interview survey and the odd-numbered addresses going to the Diary survey. The number of addresses that need to be sampled is the larger of the two sample sizes. For example, the allocation results in Attachment B show that the Boston PSU (S11A) needs 171 addresses for the Interview survey and 161 addresses for the Diary survey. DSMD draws the larger of the two sample sizes, which is the Interview survey's 171 addresses, for both surveys. Then a sample reduction process removes ten random addresses from the Diary survey.

The expected number of usable interviews is the number of sampled addresses times the eligibility rate, times the response rate (after the five percentage point reduction).

The take-every is the total household units in the MAF divided by the number of addresses that need to be sampled.

Results

Attachments A and B show the allocation results of this memo. Attachment A shows the number of addresses and the expected number of usable interviews in the 41 *index areas*, and Attachment B shows the same numbers for the 91 *PSUs*. Attachment C shows the participation rates.

References

Johnson-Herring, S. (2001). Bureau of Labor Statistics memorandum, "CE Minimum Within-PSU Sample Size," from Sylvia Johnson-Herring to David Swanson, dated December 14, 2001.

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Attachments

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Number of Sample Addresses and
Expected Number of Usable Interviews in the 41 Index Areas

This is the nationwide sample of 12,000 addresses allocated to the 41 index areas along with the expected number of usable interviews.

	Index Area	Population	# Addresses		# Usable Interviews	
			Interview	Diary	Interview	Diary
1.	N110	9,239,719	318.79	284.73	193.44	192.90
2.	N120	15,036,701	547.82	548.02	314.49	316.01
3.	N230	28,676,810	1,062.20	1,071.07	647.83	696.45
4.	N240	12,053,008	445.41	434.97	244.21	254.72
5.	N350	33,959,783	1,256.04	1,249.31	742.70	725.20
6.	N360	15,382,945	560.48	553.92	322.22	338.03
7.	N370	21,047,585	765.99	754.20	409.25	367.93
8.	N480	13,999,691	511.35	512.59	289.59	288.92
9.	N490	19,359,051	700.29	699.69	450.69	460.41
10.	R110	652,744	69.65	71.73	40.00	40.00
11.	R120	825,870	131.25	150.28	56.08	60.32
12.	R230	2,957,143	146.64	140.06	74.30	72.79
13.	R240	3,385,874	137.69	147.88	74.84	78.47
14.	R350	3,396,724	72.09	101.68	46.18	61.08
15.	R360	2,974,706	207.86	187.85	83.93	83.15
16.	R370	2,903,346	64.04	103.21	40.00	59.02
17.	R480	1,328,391	92.20	158.52	46.63	65.15
18.	R490	714,395	101.75	80.57	47.27	40.00
19.	S11A	4,552,402	171.73	161.92	95.50	93.08
20.	S12A	19,567,410	714.41	714.35	387.89	391.80
21.	S12B	5,965,343	233.67	229.30	125.32	125.48
22.	S23A	9,461,105	323.62	310.72	198.85	200.24
23.	S23B	4,296,250	156.49	144.88	88.51	85.00
24.	S24A	3,348,859	119.03	116.31	80.00	80.00
25.	S24B	2,787,701	147.78	129.38	80.00	80.00
26.	S35A	5,636,232	199.28	195.39	114.86	114.48
27.	S35B	5,564,635	183.45	169.22	109.78	105.69
28.	S35C	5,286,728	174.02	150.93	103.83	96.04
29.	S35D	2,783,243	142.00	127.31	80.00	80.00
30.	S35E	2,710,489	154.90	202.57	80.00	92.61
31.	S37A	6,426,214	221.28	240.72	130.41	134.00
32.	S37B	5,920,416	234.19	237.15	124.64	125.53
33.	S48A	4,192,887	180.48	183.13	94.00	95.08
34.	S48B	2,543,482	131.52	118.56	80.00	80.00
35.	S49A	12,828,837	467.90	470.51	265.98	264.28
36.	S49B	4,335,391	169.42	167.19	106.18	92.56
37.	S49C	4,224,851	175.48	162.48	93.17	90.16
38.	S49D	3,439,809	117.98	115.95	80.00	80.00
39.	S49E	3,095,313	127.49	128.72	80.00	80.00
40.	S49F	1,360,301	127.31	134.08	80.00	80.00
41.	S49G	523,154	135.02	138.95	80.00	80.00
	Total	**308,745,538**	**12,000.00**	**12,000.00**	**6,882.57**	**6,946.58**

Number of Sample Addresses and
Expected Number of Usable Interviews in the 91 PSUs

This is the nationwide sample of 12,000 addresses allocated to the
91 PSUs along with the expected number of usable interviews.

	Index Area	PSU Code	PSU Name	Population	# Addresses Interview	# Addresses Diary	# Usable Interviews Interview	# Usable Interviews Diary	MAF HU counts	Take Every*
1	N110	N11B	Hartford-West Hartford-East Hartford, CT	5,005,793	172.71	154.26	104.80	104.51	515,994	2,987.58
2	N110	N11C	Springfield, MA	4,233,926	146.08	130.47	88.64	88.39	258,410	1,768.94
3	N120	N12C	Pittsburgh, PA	4,065,877	148.13	148.18	85.04	85.45	1,128,340	7,614.44
4	N120	N12D	Buffalo-Cheektowaga-Niagara Falls, NY	3,483,174	126.90	126.95	72.85	73.20	529,995	4,174.93
5	N120	N12E	Rochester, NY	3,925,318	143.01	143.06	82.10	82.50	478,996	3,348.18
6	N120	N12F	Reading, PA	3,562,332	129.78	129.83	74.51	74.87	167,922	1,293.38
7	N230	N23C	Cincinnati, OH-KY-IN	3,395,853	125.78	126.83	76.71	82.47	933,932	7,363.41
8	N230	N23D	Cleveland-Elyria, OH	3,257,953	120.68	121.68	73.60	79.12	972,718	7,993.82
9	N230	N23E	Columbus, OH	3,758,510	139.22	140.38	84.91	91.28	847,347	6,036.12
10	N230	N23F	Milwaukee-Waukesha-West Allis, WI	3,256,494	120.62	121.63	73.57	79.09	682,307	5,609.73
11	N230	N23G	Dayton, OH	3,924,320	145.36	146.57	88.65	95.31	373,576	2,548.75
12	N230	N23H	Flint, MI	3,911,189	144.87	146.08	88.36	94.99	194,997	1,334.85
13	N230	N23I	Janesville-Beloit, WI	3,745,126	138.72	139.88	84.61	90.96	69,174	494.53
14	N230	N23J	Frankfort, IN	3,427,365	126.95	128.01	77.43	83.24	13,529	105.69
15	N240	N24C	Omaha-Council Bluffs, NE-IA	2,974,017	109.90	107.33	60.26	62.85	377,695	3,436.63
16	N240	N24D	Wichita, KS	2,842,770	105.05	102.59	57.60	60.08	275,971	2,626.98
17	N240	N24E	Lincoln, NE	3,288,318	121.52	118.67	66.63	69.49	132,440	1,089.89
18	N240	N24F	Wahpeton, ND-MN	2,947,903	108.94	106.38	59.73	62.30	10,798	99.12
19	N350	N35F	Charlotte-Concord-Gastonia, NC-SC	3,035,149	112.26	111.66	66.38	64.81	975,700	8,691.57
20	N350	N35G	Orlando-Kissimmee-Sanford, FL	2,642,941	97.75	97.23	57.80	56.44	974,388	9,967.96
21	N350	N35H	Richmond, VA	3,027,856	111.99	111.39	66.22	64.66	527,383	4,709.26
22	N350	N35I	Raleigh, NC	2,549,176	94.28	93.78	55.75	54.44	491,815	5,216.31
23	N350	N35J	Greenville-Anderson-Mauldin, SC	3,094,518	114.45	113.84	67.68	66.08	375,761	3,283.07
24	N350	N35K	Winston-Salem, NC	2,637,083	97.54	97.01	57.67	56.31	295,307	3,027.69
25	N350	N35L	Cape Coral-Fort Myers, FL	3,091,153	114.33	113.72	67.60	66.01	381,948	3,340.76
26	N350	N35M	Ocala, FL	2,568,744	95.01	94.50	56.18	54.85	169,498	1,784.04
27	N350	N35N	Gainesville, FL	2,913,140	107.75	107.17	63.71	62.21	123,267	1,144.06
28	N350	N35O	Wilmington, NC	2,736,321	101.21	100.66	59.84	58.43	132,731	1,311.50
29	N350	N35P	Jacksonville, NC	3,100,604	114.68	114.06	67.81	66.21	79,571	693.86
30	N350	N35Q	Big Stone Gap, VA	2,563,098	94.80	94.29	56.05	54.73	28,745	303.22
31	N360	N36A	Louisville/Jefferson County, KY-IN	2,529,624	92.17	91.09	52.99	55.59	555,975	6,032.19
32	N360	N36B	Birmingham-Hoover, AL	2,483,606	90.49	89.43	52.02	54.58	524,219	5,793.03
33	N360	N36C	Chattanooga, TN-GA	2,620,595	95.48	94.36	54.89	57.59	242,424	2,538.93
34	N360	N36D	Huntsville, AL	2,801,399	102.07	100.87	58.68	61.56	195,582	1,916.15
35	N360	N36E	Florence-Muscle Shoals, AL	2,550,408	92.93	91.84	53.42	56.04	72,916	784.67
36	N360	N36F	Meridian, MS	2,397,313	87.35	86.32	50.22	52.68	49,690	568.88
37	N370	N37C	San Antonio-New Braunfels, TX	2,436,095	88.66	87.29	47.37	42.59	899,396	10,144.60
38	N370	N37D	Oklahoma City, OK	2,812,948	102.37	100.80	54.69	49.17	573,736	5,604.39
39	N370	N37E	Baton Rouge, LA	2,543,610	92.57	91.15	49.46	44.46	350,744	3,788.94
40	N370	N37F	Lafayette, LA	2,444,837	88.98	87.61	47.54	42.74	210,467	2,365.44
41	N370	N37G	Brownsville-Harlingen, TX	2,581,037	93.93	92.49	50.19	45.12	152,513	1,623.64
42	N370	N37H	Amarillo, TX	2,756,117	100.30	98.76	53.59	48.18	107,779	1,074.52
43	N370	N37I	Russellville, AR	2,620,998	95.39	93.92	50.96	45.82	36,687	384.61
44	N370	N37J	Paris, TX	2,851,943	103.79	102.19	55.45	49.85	23,670	228.05
45	N480	N48C	Las Vegas-Henderson-Paradise, NV	3,227,960	117.90	118.19	66.77	66.62	870,033	7,361.34
46	N480	N48D	Provo-Orem, UT	3,724,271	136.03	136.36	77.04	76.86	161,723	1,185.99
47	N480	N48E	Yuma, AZ	3,840,701	140.29	140.62	79.45	79.26	90,593	644.22
48	N480	N48F	St. George, UT	3,206,759	117.13	117.41	66.33	66.18	61,470	523.54
49	N490	N49H	Portland-Vancouver-Hillsboro, OR-WA	5,208,366	188.41	188.25	121.26	123.87	955,334	5,070.59
50	N490	N49I	Santa Rosa, CA	5,163,670	186.79	186.63	120.21	122.81	207,317	1,109.89

*The Take Everys will need to be divided by two when the final redesign file is created in order to take
twice as much sample to account for both CED and CEQ being selected at the same time.

	Index Area	PSU Code	PSU Name	Population	# Addresses Interview	# Addresses Diary	# Usable Interviews Interview	# Usable Interviews Diary	MAF HU counts	Take Every*
51	N490	N49J	Chico, CA	4,623,339	167.24	167.10	107.64	109.96	97,357	582.13
52	N490	N49K	Moses Lake, WA	4,363,676	157.85	157.72	101.59	103.78	36,615	231.96
53	R110	R11D	Addison, VT	652,744	69.65	71.73	40.00	40.00	17,271	240.77
54	R120	R12G	Northeast Pennsylvania	825,870	131.25	150.28	56.08	60.32	56,812	378.05
55	R230	R23K	Northern Michigan	1,605,685	79.62	76.05	40.34	39.52	39,430	495.22
56	R230	R23L	Holmes, OH	1,351,458	67.01	64.01	33.95	33.27	14,268	212.91
57	R240	R24G	Northern Missouri	1,838,073	74.75	80.28	40.63	42.60	20,862	259.87
58	R240	R24H	Northeast Nebraska	1,547,801	62.94	67.60	34.21	35.87	9,196	136.03
59	R350	R35R	Southern Virginia	1,543,021	32.75	46.19	20.98	27.75	64,826	1,403.43
60	R350	R35S	Southwest West Virginia	1,853,703	39.34	55.49	25.20	33.33	37,689	679.18
61	R360	R36G	Eastern Kentucky	1,567,733	109.55	99.00	44.23	43.82	91,078	831.40
62	R360	R36H	Western Tennessee	1,406,973	98.31	88.85	39.70	39.33	49,746	505.99
63	R370	R37K	Northeast Texas	1,315,398	29.02	46.76	18.12	26.74	60,280	1,289.17
64	R370	R37L	Northern Arkansas	1,587,948	35.03	56.45	21.88	32.28	45,063	798.32
65	R480	R48G	Ravalli, MT	481,660	33.43	57.48	16.91	23.62	20,117	350.01
66	R480	R48H	Lincoln, NM	399,341	27.72	47.65	14.02	19.59	18,341	384.89
67	R480	R48I	Gooding, ID	447,390	31.05	53.39	15.70	21.94	6,230	116.70
68	R490	R49L	Tillamook, OR	714,395	101.75	80.57	47.27	40.00	21,220	208.56
69	S11A	S11A	Boston-Cambridge-Newton, MA-NH	4,552,402	171.73	161.92	95.50	93.08	1,927,112	11,221.55
70	S12A	S12A	New York-Newark-Jersey City, NY-NJ-PA	19,567,410	714.41	714.35	387.89	391.80	7,971,063	11,157.47
71	S12B	S12B	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	5,965,343	233.67	229.30	125.32	125.48	2,497,308	10,687.38
72	S23A	S23A	Chicago-Naperville-Elgin, IL-IN-WI	9,461,105	323.62	310.72	198.85	200.24	3,865,594	11,944.90
73	S23B	S23B	Detroit-Warren-Dearborn, MI	4,296,250	156.49	144.88	88.51	85.00	1,922,500	12,285.44
74	S24A	S24A	Minneapolis-St. Paul-Bloomington, MN-WI	3,348,859	119.03	116.31	80.00	80.00	1,417,433	11,907.84
75	S24B	S24B	St. Louis, MO-IL	2,787,701	147.78	129.38	80.00	80.00	1,258,027	8,512.92
76	S35A	S35A	Washington-Arlington-Alexandria, DC-VA-MD-WV	5,636,232	199.28	195.39	114.86	114.48	2,311,536	11,599.64
77	S35B	S35B	Miami-Fort Lauderdale-West Palm Beach, FL	5,564,635	183.45	169.22	109.78	105.69	2,507,138	13,666.62
78	S35C	S35C	Atlanta-Sandy Springs-Roswell, GA	5,286,728	174.02	150.93	103.83	96.04	2,233,637	12,835.58
79	S35D	S35D	Tampa-St. Petersburg-Clearwater, FL	2,783,243	142.00	127.31	80.00	80.00	1,393,748	9,815.32
80	S35E	S35E	Baltimore-Columbia-Towson, MD	2,710,489	154.90	202.57	80.00	92.61	1,170,658	5,779.16
81	S37A	S37A	Dallas-Fort Worth-Arlington, TX	6,426,214	221.28	240.72	130.41	134.00	2,652,201	11,017.64
82	S37B	S37B	Houston-The Woodlands-Sugar Land, TX	5,920,416	234.19	237.15	124.64	125.53	2,437,679	10,279.24
83	S48A	S48A	Phoenix-Mesa-Scottsdale, AZ	4,192,887	180.48	183.13	94.00	95.08	1,846,989	10,085.41
84	S48B	S48B	Denver-Aurora-Lakewood, CO	2,543,482	131.52	118.56	80.00	80.00	1,110,175	8,441.29
85	S49A	S49A	Los Angeles-Long Beach-Anaheim, CA	12,828,837	467.90	470.51	265.98	264.28	4,548,636	9,667.52
86	S49B	S49B	San Francisco-Oakland-Hayward, CA	4,335,391	169.42	167.19	106.18	92.56	1,765,482	10,420.81
87	S49C	S49C	Riverside-San Bernardino-Ontario, CA	4,224,851	175.48	162.48	93.17	90.16	1,533,663	8,740.01
88	S49D	S49D	Seattle-Tacoma-Bellevue, WA	3,439,809	117.98	115.95	80.00	80.00	1,513,679	12,829.90
89	S49E	S49E	San Diego-Carlsbad, CA	3,095,313	127.49	128.72	80.00	80.00	1,182,963	9,190.01
90	S49F	S49F	Honolulu, HI	1,360,301	127.31	134.08	80.00	80.00	346,031	2,580.76
91	S49G	S49G	Anchorage, AK	523,154	135.02	138.95	80.00	80.00	159,502	1,147.91
			Total	**308,745,538**	**12,000.00**	**12,000.00**	**6,882.57**	**6,946.58**	**69,141,678**	**-**

*The Take Everys will need to be divided by two when the final redesign file is created in order to take twice as much sample to account for both CED and CEQ being selected at the same time.

Response Rates and Eligibility Rates

The table below shows response rates and eligibility rates from the 5-year period 2008-2012 by index area. They range from 56.6% to 93.2% in the Interview survey, and from 56.9% to 89.1% in the Diary survey. Response rates have been decreasing over time, so the response rates used are the ones shown below minus 5 percentage points.

	Index Area	2008-2012 Interview Survey			2008-2012 Diary Survey			ACS	
		Interviews	Type A	Response Rate	Interviews	Type A	Response Rate	Eligibility rate	# HU
1	N110	1,165	465	71.5	263	69	79.2	91.3	76,950
2	N120	4,001	1,699	70.2	800	335	70.5	88.1	272,268
3	N230	4,643	1,518	75.4	1,029	257	80.0	86.7	438,235
4	N240	1,064	508	67.7	236	92	72.0	87.5	96,109
5	N350	4,406	1,227	78.2	911	274	76.9	80.8	412,396
6	N360	2,528	874	74.3	594	162	78.6	82.9	173,888
7	N370	3,082	1,311	70.2	594	327	64.5	82.0	243,644
8	N480	3,165	996	76.1	624	200	75.7	79.7	117,182
9	N490	1,888	514	78.6	382	94	80.3	87.4	126,049
10	R110	74	25	74.7	16	6	72.7	82.3	4,512
11	R120	445	169	72.5	93	43	68.4	63.3	14,560
12	R230	437	126	77.6	93	24	79.5	69.8	12,610
13	R240	830	247	77.1	159	52	75.4	75.4	8,886
14	R350	221	16	93.2	43	6	87.8	72.6	13,611
15	R360	43	33	56.6	8	5	61.5	78.3	17,335
16	R370	97	8	92.4	17	3	85.0	71.5	13,414
17	R480	173	59	74.6	40	25	61.5	72.7	5,530
18	R490	175	34	83.7	41	5	89.1	59.0	3,125
19	S11A	2,457	1,277	65.8	517	245	67.8	91.5	181,283
20	S12A	11,164	5,660	66.4	2,410	1,188	67.0	88.5	834,325
21	S12B	3,738	1,991	65.2	811	409	66.5	89.0	262,437
22	S23A	5,985	1,966	75.3	1,467	397	78.7	87.4	393,158
23	S23B	2,619	1,018	72.0	567	194	74.5	84.4	219,506
24	S24A	1,918	532	78.3	380	95	80.0	91.7	166,076
25	S24B	1,586	744	68.1	359	107	77.0	85.8	131,695
26	S35A	2,923	1,351	68.4	618	272	69.4	90.9	217,131
27	S35B	2,028	512	79.8	497	101	83.1	80.0	227,780
28	S35C	2,254	668	77.1	490	108	81.9	82.7	201,859
29	S35D	1,576	510	75.6	390	76	83.7	79.9	129,324
30	S35E	1,547	883	63.7	345	261	56.9	88.0	114,813
31	S37A	2,686	1,010	72.7	530	239	68.9	87.1	255,908
32	S37B	2,228	1,043	68.1	450	214	67.8	84.3	224,457
33	S48A	1,532	689	69.0	326	148	68.8	81.4	171,109
34	S48B	1,366	526	72.2	311	80	79.5	90.5	108,468
35	S49A	7,163	3,581	66.7	1,473	761	65.9	92.2	475,848
36	S49B	2,553	922	73.5	459	242	65.5	91.5	167,526
37	S49C	1,805	809	69.1	382	149	71.9	82.9	157,668
38	S49D	1,898	489	79.5	396	94	80.8	91.0	143,358
39	S49E	2,007	687	74.5	395	140	73.8	90.3	115,373
40	S49F	1,938	587	76.8	362	133	73.1	87.6	39,384
41	S49G	1,482	517	74.1	301	116	72.2	85.7	18,608
	Total	**94,890**	**37,801**	**71.5%**	**20,179**	**7,748**	**72.3%**	**86.7**	**7,007,398**