

“Missing Meals” in San Francisco and Marin

May, 2016

Christopher Wimer, *Columbia University*
Lucas Manfield, *Independent Consultant*



Contents

Introduction	2
Data.....	2
Methods	3
Meals Needed.....	3
Meals Afforded	4
Taxes:	6
Child Care:	6
Shelter:.....	6
Food:.....	7
Government Meals.....	7
CalFresh:	8
Women, Infants, and Children (WIC):	8
School Nutrition Programs (SNP):.....	8
Child and Adult Care Food Program (CACFP):.....	8
Senior Meals:	8
Fresh Fruit and Vegetable Program (FFVP):.....	9
Non-Profit Meals.....	9
Results	10
Graph 1: Missing Meals in San Francisco and Marin, 2007-2014	11
Graph 2: Missing Meals in San Francisco and Marin, 2014.....	11
Graph 3: Missing Meals in San Francisco, 2007-2014	12
Graph 4: Missing Meals in San Francisco, 2014	12
Graph 5: Missing Meals in Marin, 2007-2014	13
Graph 6: Missing Meals in Marin, 2014	13
Table 1: Meals in San Francisco and Marin, 2007 – 2014	14

Introduction

This document provides an update to the San Francisco and Marin Food Bank (SFMFB) on our annual analysis of “Missing Meals” in San Francisco and Marin, California. The Missing Meals measure is designed to provide a rigorous assessment of trends in the food landscape in both San Francisco and Marin Counties, as well as the role of government and nonprofit food providers in meeting ongoing food needs. In simple terms, the Missing Meals measure compares the number of meals needed by low and moderate income families in San Francisco and Marin, and subtracts from that the number of meals people can afford for themselves, the number of meals provided by government programs, and the number of meals provided by SFMFB and its partners to arrive at the number of meals that are “missing.” In the first section of the report, we outline the current methodology used to create our Missing Meals estimates. In the second section, we turn to what happened in 2014, and how that compares to prior years’ estimates.

Data

The primary data source underlying the Missing Meals measure is the United States Census Bureau’s American Community Survey (ACS). The ACS is essentially what used to be the long form of the decennial census, which is now collected annually from a very large sample of Americans. In California, for instance, the ACS currently collects surveys each year covering over 360,000 individuals. Because of its large sample size, it can be used to study smaller geographic areas not represented in many other large national surveys, such as San Francisco and Marin counties. As a first step in our analyses, we use data from the most recent ACS processed and harmonized by the University of Minnesota’s Integrated Public Use Microdata Series (IPUMS).¹ From this dataset we restrict our analyses to

¹ Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2010.

households residing in either San Francisco or Marin Counties in a given year. In 2014, we decided to construct Marin estimates using a 3-year moving average. This was due to observed year-to-year sampling variability that appeared too large given the relatively small sample size of low-income families in Marin in any given sample year. The three-year averaging helps smooth this year-to-year variability, providing more stable estimates over time.

Methods

Each year, Missing Meals is calculated using the following formula:

$$\text{Missing Meals} = \text{Meals Needed} - \text{Meals Afforded} - \text{Government Meals} - \text{Non-Profit Meals}$$

Where meals afforded is our estimate of the number of meals low- and moderate-income families should be expected to be able to afford for themselves, government meals is an estimate of the number of meals provided by government food programs like CalFresh (formerly known as Food Stamps) or the School Lunch Program, and non-profit meals is an estimate of the number of meals provided by SFMFB and its partners. We describe how we calculate each of these parameters in turn.

Meals Needed

The number of meals needed by low- and moderate-income families in San Francisco and Marin is perhaps the most straightforward of the parameters necessary for estimating the equation described above. We first estimate the total number of people in the ACS who are low- or moderate-income and therefore may be in need of assistance for covering the cost of their food. To define this population, we use 200% of the federal poverty line (FPL), a common cutoff point used to define eligibility for various food and other assistance programs. For a family of four, this equates to about \$47,700 in 2014. After estimating the number of people falling under this threshold in each county, we simply

assume each person needs three meals a day for 365 days per year to arrive at our parameter of meals needed.

Meals Afforded

While meals needed may be the simplest parameter to estimate for our equation, the number of meals afforded by low- and moderate-income families is undoubtedly the most difficult. So how might we arrive at such an estimate? One approach might be to look at people's expenditure patterns. That is, if we knew that low-income people spent, on average, 20 percent of their incomes on food, then we could theoretically calculate the number of meals that could be afforded using 20 percent of that family's income.

At first blush, this seems a reasonable enough approach to take. Its main problem, however, is that if you look at actual consumer expenditure data, many low-income people, and especially very low-income people, spend an inordinate amount of their income on food, and this percentage increases the lower you go down the income ladder. For example, the 2008 Consumer Expenditure Survey (CEX) – our main data source on people's expenditure patterns – shows that people making between \$5,000 and \$10,000 annually spent nearly 39 percent of their income on food. If we accepted this 39 percent as the amount of food people in this income bracket could provide for themselves, we would wind up concluding that low-income people can afford to cover almost all of their necessary meals themselves.

But a closer examination of the data reveals a less rosy picture. Take that same income bracket, those making between \$5,000 and \$10,000 dollars: while the CEX shows their total after-tax income for the year to be, on average, \$8,214, the data also shows that their total expenditures over the course of the year come in at much more. To put it another way, it appears that low-income households spend more than they can really afford on food, likely because food is so necessary for basic survival. Imagine you are a single parent of two children living in extreme poverty in San Francisco. You are trying to meet a number of needs for your family in order to get by with your annual income of, say,

\$10,000. You might spend a bigger percent of your budget on essential necessities like food and shelter, but forego other essentials that would be required to meet a minimally adequate living standard. You might select substandard housing that is tainted with lead paint, as the rent is cheaper. You might skip necessary medical care because the costs are too high. You might leave your children without adequate childcare when you're at work because you have no room left in your budget, after providing food and shelter, to pay someone to watch the children. For all these reasons (and more) simply taking the percentage of expenditures at face value is an inadequate method for calculating how many meals the low-income population can provide for themselves.

So what we really need is the percentage of income that low-income people should reasonably be expected to devote toward food. To arrive at such a figure, we first want to identify those families that are able to meet a minimally adequate living standard. Conceptually, these are families at or above the poverty line. That is, if the poverty line for a family of four is, say, \$25,000 a year, we can theoretically say that a family making \$25,001 is able to maintain a minimally adequate living standard in contemporary America. We can then ask what percentage of income do those people devote toward food? Let's say the answer to that question is 20 percent. We know that a family just barely getting by in America devotes 20 percent of their budget to food, or about \$5,000. For the family making half of that amount, or \$12,500, we can say that they should reasonably be expected to pay about 20 percent of their income to food, or \$2,500. This is because we know for the family just getting by, 80 percent of their income must be reserved for other necessities. Essentially, we are saying that it is not fair to expect families making less than what it takes to get by to devote relatively more of their budget to food than we expect of people just making it.

So where do we derive estimates of this percentage for people just getting by? Here we turn to poverty thresholds recommended by the National Academy of Sciences (Citro, 1995) and produced by the United States Census Bureau (see Garner and Short, 2010). These thresholds find the amount of money it takes to cover five major categories of essential expenses: food, clothing, shelter, utilities, and medical care (plus a little extra to

cover other essentials like toiletries, non-work related travel, etc.). These thresholds are produced each year, and can therefore be broken down into the percent going toward each category, including food. It turns out that this share is typically approximately 25% each year. Thus, it makes sense to assume that low-income people in our universe can afford to spend roughly a quarter of their income on food. Before proceeding, however, we make a number of key adjustments to both the percentage available for food and the amount of income to which this percentage applies. These adjustments are as follows:

Taxes:

The ACS only reports pretax income. For many poor, working families, the tax system boosts available income through programs like the Earned Income Tax Credit, the Child Tax Credit, and San Francisco's Working Families Credit. For families on the higher end of the income distribution (toward 185 percent of the poverty line), the tax system may reduce available income through payroll and income taxes. Thus, it is important to transform our measure of pretax income into a measure of post-tax income. To accomplish this, we put each of our ACS families through the National Bureau of Economic Research's publicly available tax calculator software. This results in a new measure of each family's available income after taxes.

Child Care:

In addition to food, clothing, shelter, utilities, and medical care, the NAS poverty measurement procedures subtract out-of-pocket child care costs from families' income. We use the Census Bureau's estimates of childcare costs for different income groups to subtract out available income for families in the ACS where all parents in the household are working and there are children present under the age of 15.

Shelter:

San Francisco and Marin are notorious for their high housing costs. Since the proportion of the NAS poverty threshold going to shelter is based on national averages, it is important to adjust this proportion to account for the fact that shelter costs are much higher in San Francisco. We thus take data on Fair Market Rents published by the U.S. Department of Housing and Urban Development for San Francisco (including Marin) and create a ratio of these costs to Fair Market Rents in the nation as a whole. We then inflate

the proportion of the poverty threshold necessary to meet shelter expenses by this ratio, reducing the amount left over to pay for food.

Food:

It is not only shelter that costs more in San Francisco, but also food. For each family in the ACS, we derive an average cost-per-meal based on U.S. Department of Agriculture guidelines for its “Low Cost Food Plan,” which roughly corresponds to the costs of adequately nutritious meals for families in the second quartile of the American income distribution. These costs-per-meal average approximately \$2. We further adjust these costs-per-meal to reflect the higher than average costs of food in San Francisco. More specifically, we use Regional Price Parities for food goods (as opposed to services) in the San Francisco metro area, and create a ratio of this index to the same index for the nation as a whole. These adjustments raise the cost of a meal for San Franciscans by about 14 percent per year.

Ultimately, these adjustments reduce the percentage of income available for food to a bit under 20%. Perhaps not coincidentally, this is roughly in line with what the two income brackets around the federal poverty line report in the CEX report that they spend on food, 19.9 percent and 16.6 percent for families making \$15,000-\$19,999 and \$20,000-\$29,999 per year, respectively.

Government Meals

The Federal, State, and Local governments administer a number of food assistance programs in San Francisco and Marin Counties. Thus, we compiled data on either the number of dollars flowing into San Francisco and Marin each year from these programs or the number of meals distributed by these programs in those same years. All data were compiled from the relevant administrative agencies. When administrative data were provided in dollars, we converted those figures into meals using the average meal-cost across our low-income population in the ACS data. The major programs factored into our analysis are:

CalFresh:

The CalFresh program, commonly known as food stamps (or Supplemental Nutrition Assistance Program [SNAP] nationally), is the largest program providing food assistance to low-income households. Administrative data for each year were obtained from the California Department of Social Services.

Women, Infants, and Children (WIC):

WIC provides targeted food assistance for specific types of foods (e.g., milk, peanut butter) to pregnant women and women with infants and young children. Administrative data for each year were obtained from WIC Program Coordinators in San Francisco and Marin Counties.

School Nutrition Programs (SNP):

SNP is provided in the public schools, and provides free and reduced cost meals (breakfast and lunch) to low-income children. Administrative data for each year were obtained from the California Department of Education. The number of Summer Meal Service (SMS) meals, which are provided through the same program but during the summer months when school is not in session, were also obtained from the same administrative source.

Child and Adult Care Food Program (CACFP):

CACFP provides meals typically through child care and adult care (typically elderly) providers. Administrative data for each year were obtained from the California Department of Education.

Senior Meals:

There are two primary programs providing meals to low-income seniors outside of the CACFP program. These are the Congregate Meals Program, which provides meals in community dining programs, and Home-Delivered Meals, which provides meals to home-bound seniors. Administrative data on these programs was provided by the Department of Aging and Adult Services in San Francisco and the Division of Aging & Adult Services in Marin County. For San Francisco, where many of the meals provided by DAAS are funded by CBO's, we use data provided by DAAS on this funding breakdown to apportion some meals to the government side of the ledger and some to the nonprofit side of the ledger.

Fresh Fruit and Vegetable Program (FFVP):

The FFVP is administered nationally by the USDA, and provides grants to states, primarily through state Departments of Education. San Francisco schools began receiving its first FFVP grants in 2008, and Marin schools in 2009. The program provides free fresh fruit and vegetables to children in their schools. Administrative data on FFVP was obtained from the California Department of Education.

Non-Profit Meals

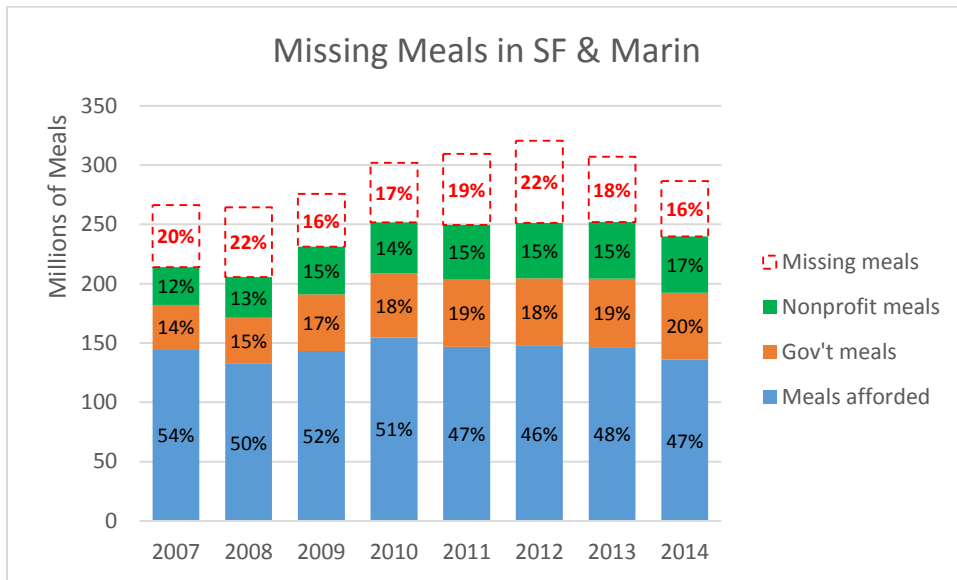
The primary non-governmental providers of food assistance in San Francisco and Marin are the San Francisco and Marin Food Bank (SFMFB). SFMFB provided us with the total number of pounds of food that they sent out of their doors in each year. These pounds were converted to meals assuming that one meal equals 1.3 pounds, the conversion factor recommended by Feeding America based off of data compiled by the USDA.

SFMFB also works with a network of approximately 500 food providers to which it distributes food. Some of these providers receive 100 percent of their food from SFMFB, while others receive some portion of the food they distribute from SFMFB, and collect and distribute more food on their own. Unfortunately, there is no central database of all of these providers and exactly how much food they provide. But the SFMFB has collected information from each provider in its network on what percentage of their food they receive from SFMFB. Because of SFMFB's centrality in the food provision network in San Francisco, we assume that only a negligible number of providers are not represented in SFMFB's provider network. Using the percentages reported by network members, we are able to calculate how many non-SFFB meals are provided by network members, which becomes our estimate of non-governmental food provision by nonprofit organizations other than the Food Bank.

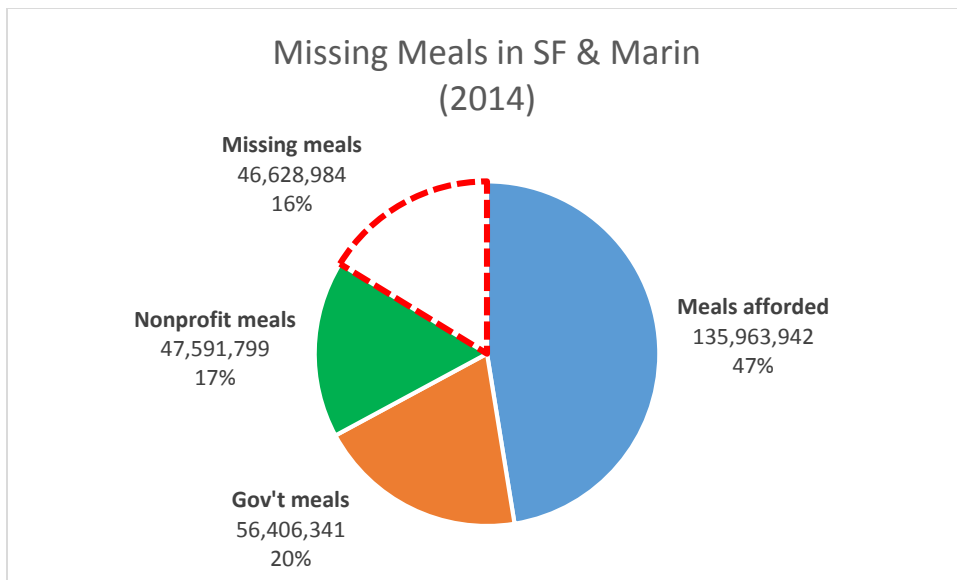
Results

2014 saw a substantial reduction in the number of “missing meals” relative to 2013. Missing meals dropped from about 55 million in 2013 to 47 million meals in 2014 across the two counties combined. This was driven by a large reduction in the total number of meals needed, from 307 million to 287 million, which was likely driven by a drop in the number of low-income families in the two counties as the wider economy continued to improve. Though fewer people overall found themselves in need, both government and non-profit food assistance held strong, essentially filling a larger share of a smaller gap. In 2013, government and non-profit assistance combined to fill about 34% of the total meals needed among the low-income population in SF and Marin. In 2014 this jumped to over 36 percent of the total needed meals. Our analysis suggests that the roughly 47 million missing meals in the two counties consists of 35.5 missing meals in San Francisco and 11.2 million missing meals in Marin.

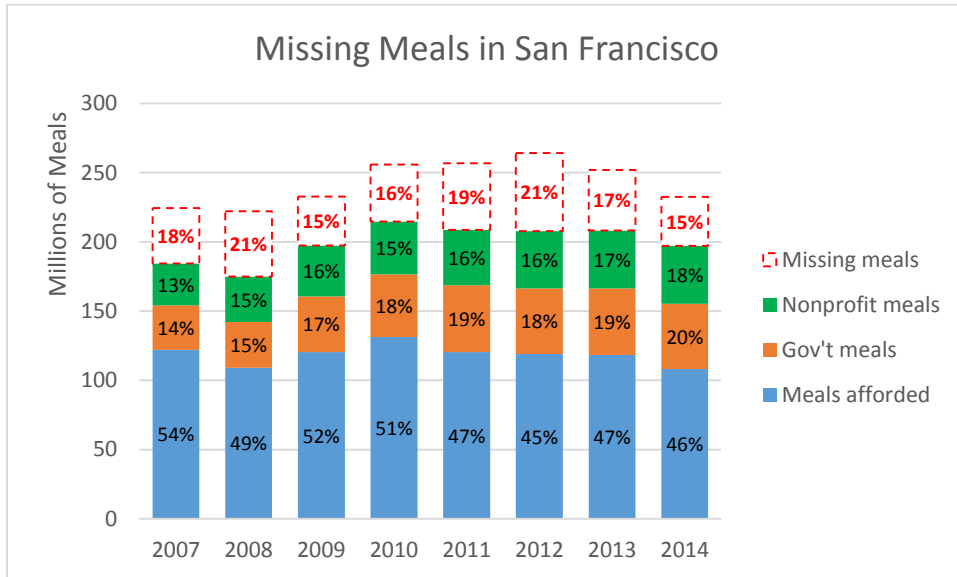
Graph 1: Missing Meals in San Francisco and Marin, 2007-2014



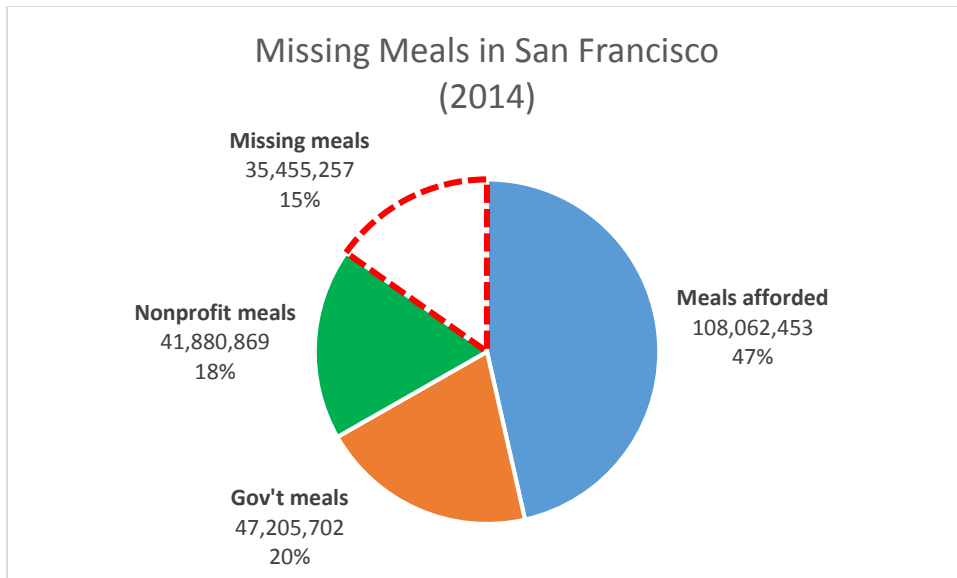
Graph 2: Missing Meals in San Francisco and Marin, 2014



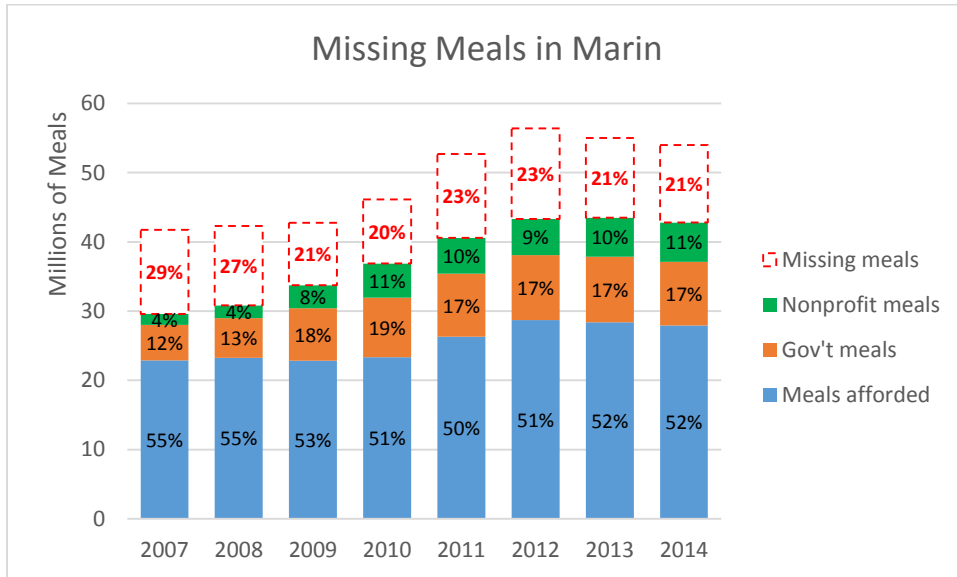
Graph 3: Missing Meals in San Francisco, 2007-2014



Graph 4: Missing Meals in San Francisco, 2014



Graph 5: Missing Meals in Marin, 2007-2014



Graph 6: Missing Meals in Marin, 2014

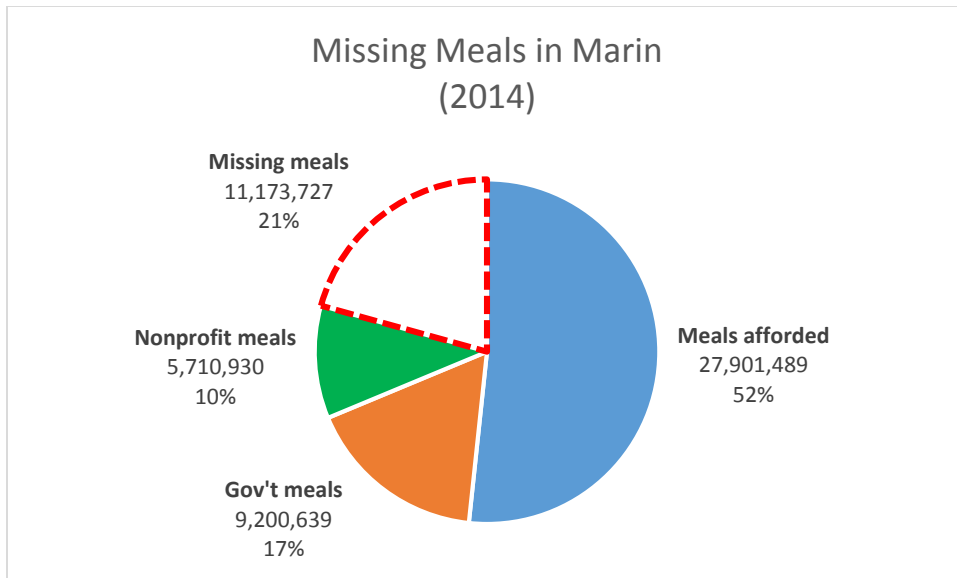


Table 1: Meals in San Francisco and Marin, 2007 – 2014

	2007	2008	2009	2010	2011	2012	2013	2014
Total (SF and Marin)								
Total # people < 200% FPL	242,936	241,417	251,613	275,620	282,477	292,647	280,192	261,619
Meals needed	266,145,225	264,458,925	275,632,305	301,959,390	309,461,235	320,579,865	306,962,445	286,591,065
Meals afforded	144,923,461	132,370,775	143,297,461	154,691,227	146,784,540	147,639,156	146,606,176	135,963,942
Gov't meals	37,122,737	38,851,617	47,805,448	53,896,744	57,295,885	56,899,943	57,674,833	56,406,341
Nonprofit meals	31,867,871	34,481,233	40,057,335	43,077,758	45,329,567	46,602,469	47,561,885	47,591,799
Missing meals	52,231,156	58,755,301	44,472,061	50,293,661	60,051,242	69,438,296	55,119,549	46,628,984
SF								
Total # people < 200% FPL	204,817	202,801	212,571	233,491	234,352	241,182	229,978	212,337
Meals needed	224,385,210	222,161,265	232,878,030	255,809,520	256,735,890	264,200,505	251,952,930	232,604,280
Meals afforded	122,048,490	109,099,621	120,458,609	131,372,200	120,498,177	118,916,837	118,244,476	108,062,453
Gov't meals	31,997,322	33,143,080	40,210,080	45,265,768	48,180,556	47,508,753	48,177,873	47,205,702
Nonprofit meals	30,287,855	32,634,486	36,741,402	38,154,007	40,149,257	41,379,734	41,900,196	41,880,869
Missing meals	40,051,543	47,284,078	35,467,939	41,017,545	47,907,900	56,395,181	43,630,384	35,455,257
Marin								
Total # people < 200% FPL	38,119	38,616	39,042	42,129	48,125	51,465	50,214	49,282
Meals needed	41,760,015	42,297,660	42,754,275	46,149,870	52,725,345	56,379,360	55,009,515	53,986,785
Meals afforded	22,874,971	23,271,154	22,838,852	23,319,027	26,286,363	28,722,319	28,361,700	27,901,489
Gov't meals	5,125,415	5,708,537	7,595,368	8,630,976	9,115,329	9,391,190	9,496,960	9,200,639
Nonprofit meals	1,580,016	1,846,747	3,315,933	4,923,751	5,180,310	5,222,735	5,661,689	5,710,930
Missing meals	12,179,613	11,471,223	9,004,122	9,276,116	12,143,342	13,043,115	11,489,165	11,173,727