OREGON ECONOMIC DEVELOPMENT DEPARTMENT
LAFAYETTE COMMUNITY SURVEY

SURVEY METHODOLOGY AND RESULTS

by Patricia A. Gwartney, Ph.D., OSRL Founding Director

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OREGON SURVEY RESEARCH LABORATORY
5245 UNIVERSITY OF OREGON
EUGENE, OR 97403-5245
telephone: 541-346-0824
fax: 541-346-5026
email: osrl@oregon.uoregon.edu
www: darkwing.uoregon.edu/~osrl

INTRODUCTION

This document reports the results of a random sample telephone survey of 310 adults in the City of Lafayette, Oregon, conducted November 30 – December 20, 1998. The survey's purpose was to assess low-moderate income thresholds in Lafayette and to provide the community with public opinion data on current policy issues related to their fire department.

Working closely with Lana Holman of the Oregon Economic Development Department (OEDD) and Robert Willoughby, City Administrator of Lafayette, OSRL planned, pretested and implemented this survey. This report summarizes the survey methodology and results.

SURVEY METHODOLOGY

Survey Instrument: The goals of the survey were to obtain valid and reliable information from adults in the City of Lafayette, Oregon on the following topics:

1. **Household and family size,** including the presence of multiple families within households;
2. **Family income threshold**, with family income from all sources falling above or below specified levels contingent on family size, as provided by OEDD, treating multiple families within the same household separately;

3. **Opinions on the Lafayette volunteer fire department**, including awareness, quality rating, opinion on whether Lafayette needs a new fire department, and how much respondents would be willing to pay for a new fire department;
4. **Registered voter** status.

In designing the survey instrument, OSRL used a multi-path approach which included: drawing from OSRL's survey archives and professional networks for questions related to OEDD's and the City of Lafayette's needs; creating original survey questions; and extensively pretesting individual questions and the entire survey instrument with members of the survey population, professionals, survey experts, and potential users of the data from OEDD. The key income and household composition survey questions are OSRL originals, repeated in all community income surveys we conduct with OEDD.

The survey instrument was programmed into OSRL's computer-aided telephone interviewing (CATI) system and further pretested. A facsimile of the survey instrument is provided in Section 2 of this documentation. All interviews were completely anonymous, and human subjects approval was obtained.

Sample: Lafayette's official estimated population is 2,140 residents in approximately 834 households.[1] For this number of households, the minimum sample size necessary to achieve 95% confidence intervals in the data is n=263. OSRL completed 310 interviews, but there were 23 refusals on the key income question, for n=287.

In communities as small as Lafayette, random digit dialing (RDD) is an inefficient sampling tool, for many calls and screening interviews are needed to locate residents. An alternative telephone sampling methodology is to purchase a list from a well-respected vendor. In such cases, OSRL works with Genesys Sampling Systems (the principle sample provider to the U.S. Census Bureau). Such lists are compiled from multiple sources, such as telephone directories and utility listings. The main potential drawback to a sample from these sources is that they may under-represent new residents and over-represent continuing residents.

For this study, we decided that the most efficient approach, that would give both new and old households in the geographic area an equal chance of being selected, would be a combination list and RDD sample. Thus, OSRL purchased a list of Lafayette residents' telephone numbers from Genesys Sampling Systems and we supplemented that list with an RDD sample generated in-house. Altogether, 255 interviews came from the list sample and 47 came from the RDD sample. An additional 8 interviews came from multiple families within households.

It is important to note that households without telephones are necessarily excluded from the sample. According to the 1990 U.S. Census, those without telephones were 5.2% in Yamhill County (see http://venus.census.gov/cdrom/lookup/914976490) and 12.3% in Lafayette (http://venus.census.gov/cdrom/lookup/915054213). The 1990 figure, however, is based upon

[1] "Preliminary Population Estimates July 1, 1998," Center for Population Research and Census, Portland State University, November 16, 1998.

448 households, and the number of households in Lafayette has nearly doubled in the intervening 8 years to 834.

Survey sampling errors are calculated to assist data users in assessing how much confidence to place in a particular survey result. Large random samples, as in this study, reduce sampling error. Results for survey questions in which there is low variability also have less sampling error; for example, a variable with a 50/50 proportional split has wider confidence intervals than a variable with a 5/95 proportional split. For this study of 310 households, the sampling error is ±4.41 percentage points on a variable with a 50/50 proportional split (at the 95% confidence level). For a variable with a 5/95 proportional split, the sampling error is ±2.65 percentage points. Below, we present specific sampling errors on results where warranted.

Data Collection: Interviewer training was conducted on November 23, 1998; see Section 3 for the interviewer instruction summary. Interviewing was conducted at all times of the day November 30 – December 20, 1998 until the target sample size of 310 completed interviews was achieved. Altogether, OSRL interviewers made 4,090 telephone calls to complete 310 interviews with adults age 18 and over. Up to 20 calls were made to each valid telephone number.

Two screening questions ensured that all survey respondents resided in Lafayette:

> *Do you live inside the city limits of Lafayette? (PROBE: Your residence must be inside the city limits. Can you vote in city elections, such as voting for city council members or mayor?)*

and

> *What is your zip code?*

All zip codes other than 97127 were disqualified.

The net response rate for the Lafayette Community survey was 76.4% and the refusal rate was 5.4%; see Section 4 for the sample and response rate report. The average length of the interviews was 4.5 minutes. Eight interviews were conducted in Spanish.

SURVEY RESULTS

The presentation of the survey results is organized around the subject areas identified on pages 1 - 2. Readers of this report may refer to the 12 banner tables in Section 6 for more detail.[2] In the banner tables, all questions asked in the survey were cross-tabulated with 7 key variables: Aware of Lafayette's fire department, quality rating of the fire department, whether Lafayette needs a new fire station, the amount citizens will pay for a fire station, registered voter status, whether the interview was conducted in Spanish, and a summary measure of

[2] At OEDD's request, the banner tables also may be placed at OSRL's World Wide Web site for greater public usage: http://darkwing.uoregon.edu/~osrl.

family income above or below the low-to-moderate income threshold. The banner table data include counts and percentages for each question overall, and counts and percentages for each row and column of the cross-tabulation. Instructions on how to read banner tables are provided in Section 5.

Household and Family Size: Respondents were asked: "How many people live in your household at this point in time, including yourself?" Interviewers typed in the exact number. Interviewers defined household members using standard U.S. Census conventions, that is:

> *Include everyone who usually lives there half time or more, including: family, boarders, roommates, foster children, live-in employees, newborn babies still in the hospital, children at boarding school, persons with no other home who stay there, persons temporarily away (business, vacation, military service, or in a general hospital)*

There were, on average, 3.07 persons per household in the Lafayette survey sample. These were distributed as 13.6% in one-person households, 33.2% in two-person households, 15.2% in three-person households, 16.8% in four-person households, 15.2% in five-person households, 4.2% in six-person households, and 1.9% in seven- and eight-person households (see banner Table 1).

Respondents were asked: "Are all of these people in your household members of your family?" or, if only one other person was in the household, "Is the other person in your household a member of your family?" For respondents who asked, interviewers defined family as follows:

> *A family is defined as people who are related by blood or marriage.*

Ninety-three percent of Lafayette households contained one family only (Table 2). The average number of persons in one-family households was 3.51. Seven percent of the households contacted contained more than one family. The average number of persons in multi-family households was 4.11. Among multi-family households, 79% contained just one family other than the respondent's, 16% contained two other families, and 5% contained three (Table 9).

Family Income Threshold: In the telephone survey, respondents were asked: "Will your total family income from all sources in 1998 be above or below _____," a specified amount, which was contingent upon family size. Interviewers defined family income as:

> *Money from jobs (wages, salary, tips, bonuses), interest, dividends, child support, alimony, welfare, social security, disability and retirement payments, net income from a business, farm or rent, or any other money income received by members of your family. Do not include lump-sum payments, such as money from an inheritance or sale of a home.*

For Yamhill County, Oregon, the low-to-moderate family income thresholds by family size were defined by OEDD in a memorandum dated February 1, 1998 as:

Family Income	Family Size
$27,800	1
$31,750	2
$35,700	3
$39,700	4
$42,850	5
$46,050	6
$49,200	7
$52,400	>7

Note that the family income threshold levels provided in banner Table 12 and as the last "stub" variable on each banner table applies to ***families*** within households. The results show that 46.8% of families were above the low-to-moderate income threshold, 45.8% were below, and 7.4% refused or did not know. Excluding refusals and don't know answers, 49.5% of families were below the threshold.

In analyses not shown here, we also find that families in the list sample were somewhat more likely to fall below the income threshold than those in the RDD sample: 45.9% in the list sample (excluding refusals and don't know answers, 49.8%) and 45.8% in the RDD sample (excluding refusals and don't know answers, 45.5%). If list samples represent more stable residents and RDD samples better represent new residents, as widely believed, these results indicate that long-time families in Lafayette are more likely to be poor than new families in Lafayette. Of the 8 families residing in multi-family households, 62.5% fell below the income threshold (with zero refusals and don't know answers).

OEDD, however, requires income information on ***persons within families***. OSRL extracted the needed data from banner tables and specially-constructed cross-tabulations. These data are summarized below in Figure 1. Income information in the 310 completed interviews covered 853 persons in families in the City of Lafayette (see the bottom row of Figure 1). More specifically, data were collected on 49 persons in one-person families, 777 persons in one-family households, and 27 persons in the respondent's own family in multi-family households[3] (see the column labeled "total persons").

Figure 1's results show that 47.48% of all persons in families in Lafayette had family incomes below the low-to-moderate thresholds in 1998 (405 persons out of 853). The confidence interval for this percentage is $\pm$2.60 percentage points, based upon a sample of 853 persons and a population of 2,140 persons. Taking into account the confidence interval, we

[3] Those who refused to report or did not know their family income are excluded.

Figure 1: Persons Below Low-Moderate Income Thresholds, Lafayette, Oregon, December 1998

	Low-Moderate Income Threshold	Number Persons in Family	Persons Above	Persons Below	Total Persons	% Below	DK/NA/Ref	Number Survey Respondents
INCOME 1, One Person Family (n=52)	$27,800	1	16	33	49	67.35%	3	52
INCOME 2, One Family Household (n=249)	$31,750	2	92	90	182	49.45%	9	100
	$35,700	3	75	42	117	35.90%	6	45
	$39,700	4	108	60	168	35.71%	3	45
	$42,850	5	105	95	200	47.50%	1	41
	$46,050	6	24	48	72	66.67%	1	13
	$49,200	7	14	24	38	63.16%	0	5
	$52,400	>7	0	0	0	-	0	0
INCOME 3, Respondent's Family in Multiple-Family Household (n=9)	$31,750	2	0	4	4	100.00%	0	2
	$35,700	3	6	9	15	60.00%	0	5
	$39,700	4	8	0	8	0.00%	0	2
	$42,850	5	0	0	0	-	0	0
	$46,050	6	0	0	0	-	0	0
	$49,200	7	0	0	0	-	0	0
	$52,400	>7	0	0	0	-	0	0
Total			448	405	853	47.48%	23	310

can be 95% sure that the true population result (if we had interviewed all families in Lafayette) would be between 44.88% and 50.08%. Forty-seven percent is below the 50% level required to qualify for desired OEDD loans or grants, even taking into account confidence intervals.

Could this result be biased? More specifically, could the exclusion of households without telephones bias the survey results so substantially as to prevent receipt of needed OEDD assistance? Alternatively, could the exclusion of don't know and refusal answers affect the results? These issues are explored in greater detail below. Our conclusion is that it is unlikely that OSRL's family income findings are systematically biased by these factors.

As mentioned above, the 1990 U.S. Census found that 12.3% of the 448 households in Lafayette lacked telephones. It is not reasonable to expect that 12.3% of the estimated 834 households in Lafayette in 1998 lacked telephones, for telephone subscribership has become more prevalent, not less, in the ensuing eight years, particularly in newly developing areas, like Lafayette, than in surrounding rural areas. What would happen to the survey results if the statewide figure of 4.5% lacking telephones applied to families in the City of Lafayette, and if all those families were below the low-to-moderate family income threshold? This is an exceptional scenario for the reasons above, but it provides a strict test for potential bias in the survey results.

If we added 4.5% more families to the data, it would result in approximately 49 more persons[4], for a new total of 902 persons (853 + 49). If all of these 49 persons were below the family income threshold, the result would be 50.3% below the low-to-moderate income threshold (454/902). This barely achieves the desired threshold, and it only does so when we assume that all persons in families estimated to not have telephones in the City of Lafayette in 1998 fall below the low-to-moderate family income threshold, an exceptional scenario. Thus, even this strict test suggests that households without telephones are unlikely to have affected the final result.

What about missing data? What if all respondents who refused to answer the income threshold question, and those who did not know, fell below the low-to-moderate family income threshold? This is another exceptional scenario, for the methodological literature in survey research indicates that high socioeconomic status respondents are more likely to refuse income questions than low. Altogether 23 respondents refused or did not know the answer to the income question (Figure 1), and they represent 81 persons in families[5]. If all 81 persons fell below the family income threshold, we would have a new total of 486 persons in families below (405+81) and a new total of 934 persons in families (853+81). The new final result would be 52.0%. This would qualify for OEDD assistance. But it is not reasonable to believe that all persons who were refusals or don't knows on the income question would fall below the low-to-moderate income threshold. It would be far more reasonable to assume that half or fewer of the refusals and don't know respondents were below the threshold. In this more

[4] 49 = [(.045 * 310 families) * 3.51 persons per family)].
[5] 81 = (23 families * 3.51 persons per family).

reasonable scenario, 48% or fewer of persons in families would fall below the low-to-moderate income threshold.

This detailed exploration of possible biases in the income results due to lack of telephones in a telephone survey and due to refusals and don't know responses to the income question indicate that the final result – fewer than 50% below the low-to-moderate income threshold – is a robust and unbiased finding.

Opinions on the Lafayette Volunteer Fire Department: The survey results show that fully 97% of those interviewed were aware of Lafayette's volunteer fire department (see banner Table 4). In rating the Lafayette fire department's quality, 21% said it was "excellent," 44% said it was "good,", 12% said it was "fair," and 6% said it was "poor," with 18% volunteering that they did not know (Table 5). (Interestingly, 40% of those who said they were not aware of the fire department were, nonetheless, willing to give opinions on it.)

Three-fifths of those interviewed believe Lafayette needs a new fire department (61%), while 24% said no, 13% don't know, and 2% volunteered that "it depends" (Table 6). To some extent, it is surprising that only 61% of the survey respondents said Lafayette needs a new fire department, for the survey question itself may have been regarded as leading:

> *Some people think Lafayette needs a new fire station because the existing one soon will be too small to serve the growing community, and because it is likely to collapse in an earthquake or natural disaster. Do you think Lafayette needs a new fire station?*

The question itself provides several reasons why a new fire station is needed, yet two-fifths of the respondents did not "buy" those reasons.

Quality ratings of the fire department vary directly with assessment of need for a new fire department: among those who say the fire department is "excellent," 69% believe a new one is needed, but among those among those who say the fire department is "poor," just 50% believe a new one is needed. Registered voters are less likely to believe a new fire station is needed, at 59% compared to 67% of those not registered to vote.

Those who believe a new fire station is needed (as well as those who volunteered "it depends" or "don't know") were read the following question :

> *To pay for a new fire department, the city thinks it will cost three-to-four dollars per one thousand in property value. So, people in a one hundred thousand dollar home would pay an extra three or four hundred dollars per year in property taxes for the fire station. How many dollars per thousand (in value on your home) would you be willing to pay for*

a new fire station?[6]

Of those who believe a new fire station is needed, one fifth are willing to pay $1 per thousand in value on their home for a new fire station (20%), one fifth would pay $2 per thousand (20%), 16% would pay $3 per thousand, 5% would pay $4, and 3% would pay $5 or more per thousand (Table 7). However, 14% of those asked this question are unwilling to pay anything for it. The unwilling-to-pay group is more likely to say the fire department does a "poor" job, to be unsure whether Lafayette really needs one, to be poor, to live in 1-2 person households, and to not be registered to vote. Another 21% could not answer the question or did not know how much they would be willing to pay. This group bears similar characteristics to those who are unwilling to pay. Six of the 8 Spanish speakers interviewed either could not or did not answer this question (also see Table 11).

Registered Voter Status: Fully 77% of the sample was registered to vote, 22% were not, and 1% did not know (see Table 8). Substantial portions of non-voters were likely to have no knowledge or opinion on the fire department issues in Lafayette. For example, 28% could not rate the fire department, 16% did not know if Lafayette needs a new one, and 23% did not know how much they could pay for a new fire department. Three-quarters of those interviewed in Spanish were not to registered to vote, compared to 21% of those interviewed in English. One quarter of those below the family income threshold were not registered to vote, compared to one-fifth of those above.

CONCLUSIONS

This survey's main purpose was to assess low-to-moderate family income levels in the City of Lafayette, Oregon for OEDD. As a courtesy to the community, a few questions about the fire department and registered voter status were also included.

The results indicate that the community does not meet the 50% low-to-moderate family income level required to qualify for desired OEDD loans or grants. Even if households without telephones were included, and even if persons who refused the income question or did not know the answer to it were included, our estimates suggest that the final result would not have been different.

This is the third income survey conducted by OSRL for OEDD. The results continue to indicate that RDD surveys are an efficient and valid means for assessing family income levels and providing information back to communities, even if the income results fall short. Our experience with the City of Lafayette continues to indicate, however, that each community must be assessed independently for bias on the basis of telephone subscribership and refusals.

[6] Persons who do not own their own homes were asked to speculate "*If you owned a home …*".