

**OREGON ECONOMIC & COMMUNITY DEVELOPMENT DEPARTMENT  
WILLIS CREEK/RICE CREEK AREA, DOUGLAS COUNTY,  
HOUSEHOLD INCOME SURVEY**

**METHODOLOGY AND RESULTS**

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**INTRODUCTION**

This document reports the methodology and results of a telephone survey of adults in the Willis Creek and Rice Creek area of Douglas County, Oregon, conducted January 5<sup>th</sup> to 11<sup>th</sup>, 2000. The survey's purpose was to assess family low-moderate income thresholds in that community and to provide information on inclusion in the local water improvement district. Working closely with Lana Holman, formerly of the Oregon Economic & Community Development Department (OECDD), OSRL planned, devised, pre-tested, and implemented this survey.

**SURVEY METHODOLOGY**

**Survey Instrument:** The survey goals were to obtain valid and reliable information from adults in the Willis Creek/Rice Creek community 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 OECDD, treating multiple families within the same household separately;
3. **Membership in the local improvement district** for water.

In designing the survey instrument, we drew from OSRL's survey archives for the key household composition and family income survey questions related to OECDD's and the Willis Creek/Rice Creek community's needs. We replicated the questions that we have used successfully in all previous OECDD household income surveys. OSRL pre-tested individual questions and the entire survey instrument with members of the survey population, professionals, survey experts, and potential users of the data from OECDD.

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, with embedded number and percentage frequency results. All interviews were completely anonymous, and human subjects approval was obtained.

**Sample:** In communities as small as the Willis Creek/Rice Creek area, random digit dialing (RDD) is a very inefficient sampling tool, for many telephone calls and screening interviews are needed to locate residents. As an alternative, members of the Willis Creek/Rice Creek community provided OECDD and OSRL with a detailed list of properties in that area. Many of the listed properties, however, had no dwellings, and many of those with dwellings apparently had neither residents nor telephone numbers.

Altogether, the community provided OSRL with telephone numbers on 113 properties in the Willis Creek/Rice Creek area. For this number of households, the minimum sample size needed to achieve 95% confidence intervals in the sample data is  $n=87$  (see <http://darkwing.uoregon.edu/~osrl/miscpapers/sampler.html>). However, 32 of the telephone numbers provided were ineligible, because the number was disconnected, not working, nonresidential, duplicate, or not in the community.

From the remaining 81 numbers, OSRL completed 67 interviews, which is the minimum needed to obtain 95% confidence intervals. Five households refused to participate, and 9 households were never reached, despite as many as 35 dial attempts. Altogether, OSRL interviewers made 299 telephone calls to achieve a 91.7% CASRO response rate and a 6.8% CASRO refusal rate.<sup>1</sup> See Section 4 for the sample and response rate report. The average length of the interviews was 3.5 minutes.

Survey sampling errors are calculated to assist data users in assessing how much confidence to place in a particular survey result. Large samples 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 67 households, the sampling error is  $\pm 5.0$  percentage points on a variable with a 50/50 proportional split (at the 95%

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<sup>1</sup> CASRO = Council of American Survey Research Organizations. CASRO's standard for calculating response rates and refusal rates is the strictest.

confidence level). For a variable with a 5/95 proportional split, the sampling error is  $\pm 2.0$  percentage points. Below, we present specific sampling errors on results where warranted.

**Data Collection:** Interviewer training was conducted on January 4, 2000; see Section 3 for the interviewer instruction summary. Interviewing was conducted at all times of the day January 5-11, 2000 until the target sample size of 67 completed interviews with adults age 18 and over was achieved.

One screening question ensured that all survey respondents resided in Willis Creek/Rice Creek area:

*Do you live in the Willis Creek or Rice Creek area (of Douglas County)?*

All respondents, by definition, had to say “yes” to be eligible to answer the survey. Thus, nonresident property owners were not interviewed.

## **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 banner tables in Section 6 for more detail.<sup>2</sup> In the banner tables, all questions asked in the survey were cross-tabulated with five key variables: 1) Property included in the local improvement district, 2) income for single-person households, 3) income for families in single-family households, 4) income for families in multiple-family households, and 5) a summary measure of 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, 2.43 persons per household in the Willis Creek/Rice Creek area survey sample. These were distributed as 14.9% in one-person households, 41.8% in two-

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<sup>2</sup> At OECD'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>.

person households, 23.9% in three-person households, 10.5% in four-person households, 6.0% in five-person households, and 3.0% in six-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.*

All but one household in the Willis Creek/Rice Creek area contained one family only (98%; see Banner Table 2). The average number of persons in one-family households was 2.59. Just one of the households contacted contained more than one family (2%). The average number of persons in multi-family households was 2.0. The single multi-family household in the sample contained one other family besides the respondent’s, probably in a roommate situation (Table 3).

**Family Income Threshold:** In the telephone survey, respondents were asked: “Will your total family income before taxes from all sources in 1999 be above or below \_\_\_\_\_,” a specified amount, which was contingent upon family size. In a probe to respondents, the survey 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 Douglas County, Oregon, the low-to-moderate family income thresholds by family size were defined by OECDD as:

Family Income	Family Size
\$21,000	1
\$24,000	2
\$27,000	3
\$30,000	4
\$32,400	5
\$34,800	6
\$37,200	7
\$39,600	>7

The skip logic in the telephone survey insured that each family respondent was asked one income question only and they were asked the correct threshold level, contingent upon family size. The three income questions (INCOME1, INCOME2, INCOME3) were indexed

into a single measure labeled INCOME4. Note that this summary measure applies to *families* within households. It is shown as the last “stub” variable on each banner table and is provided in Banner Table 7.

The results show that 55.2% of *families* were above the low-to-moderate income threshold, 37.3% were below, and 7.5% refused or did not know. Excluding refusals and don’t know answers, 40.3% of families were below the threshold.

OECD, however, requires income information on *persons within families*. OSRL extracted the needed data from banner tables and specially-constructed cross-tabulations. These data are presented in Figure 1 on the following page. Income information in the 67 completed interviews covered 163 persons in families in the Willis Creek/Rice Creek area (see the bottom row of Figure 1), plus 9 persons in families in which respondents did not know or refused the income question. More specifically, income data were collected on 9 persons in one-person families and 154 persons in one-family households (see the column labeled “total persons in families”). Those not knowing or refusing were: 1 respondent in a 1-family household, 2 respondents in 2-person families, 1 respondent in a 3-person family, and 1 person in the respondent’s own family in a multi-family household (see the column labeled “number respondents don’t know/refuse”).<sup>3</sup>

Figure 1’s results show that **38.7% of all persons in families in Willis Creek/Rice Creek area had family incomes below the low-to-moderate thresholds in 1999** (63 persons out of 163). The confidence interval for this percentage is  $\pm 5.0$  percentage points. Taking into account the confidence interval, we can be 95% sure that the true population result (if we had interviewed all families in Willis Creek/Rice Creek area) would be between 33.7% and 43.7%. Even taking into account confidence intervals, all figures are below the 50% level required to qualify for desired OECD loans or grants.

Could this result be biased due to the exclusion of don’t know and refusal answers? 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 an exceptional scenario, for the methodological literature in survey research indicates that high socioeconomic status respondents are more likely to refuse income questions than low socioeconomic status respondents are. Altogether 5 respondents refused or did not know the answer to the income question (Figure 1), and they represent 9 persons in families<sup>4</sup>. If all 9 persons fell below the family income threshold, we would have a new total of 72 persons in families below (63+9) and a new total of 172 persons in families (163+9). The new final result would be 41.9% (+/- 5.0 percentage points). This still would not qualify for OECD assistance. This indicates that the final result – fewer than 50% below the low-to-moderate income threshold – is a robust and unbiased finding.

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<sup>3</sup> Those who refused to report or did not know their family income are excluded in the final figures.

<sup>4</sup> 9 = (1 respondent in a 1-family household) + (2 respondents in 2-person families) + (1 respondent in a 3-person family) + (1 person in the respondent’s own family in a multi-family household).

**Figure 1: Persons Below Low-Moderate Income Thresholds, Willis Creek/Rice Creek Area, Douglas County, Oregon, January 2000**

	Number Survey Respondents	Low-Moderate Income Threshold	Number Persons in Family	Number Persons Above	Number Persons Below	Total Persons in Families	% Below Thresholds in Families	Number Respondents Don't Know/Refuse
INCOME 1, One-Person Family (n=10)	10	\$21,000	1	4	5	9	55.6%	1
INCOME 2, One-Family Household (n=56)	28	\$24,000	2	34	18	52	34.6%	2
	15	\$27,000	3	24	18	42	42.9%	1
	7	\$30,000	4	12	16	28	57.1%	0
	4	\$32,400	5	20	0	20	0.0%	0
	2	\$34,800	6	6	6	12	50.0%	0
	0	\$37,200	7	0	0	0	-	0
	0	\$39,600	>7	0	0	0	-	0
INCOME 3, Respondent's Family in Multiple-Family Household (n=1)	1	\$24,000	2	0	0	0	-	1
	0	\$27,000	3	0	0	0	-	0
	0	\$30,000	4	0	0	0	-	0
	0	\$32,400	5	0	0	0	-	0
	0	\$34,800	6	0	0	0	-	0
	0	\$37,200	7	0	0	0	-	0
	0	\$39,600	>7	0	0	0	-	0
<b>Total</b>	<b>67</b>			<b>100</b>	<b>63</b>	<b>163</b>	<b>38.7%</b>	<b>5</b>

**Local Improvement District:** At the end of the survey, respondents also were asked:

*Is your property (in the Willis Creek or Rice Creek area of Douglas County) included in the local improvement district for water?*

The survey results show that fully 88% of those interviewed live on properties included in the local water improvement district (see Banner Table 8). Respondents whose family incomes are above the low-to-moderate income threshold were more likely to have their properties included in the district, at 95%, compared to 84% of those whose families' incomes are below the threshold.

## CONCLUSIONS

This survey's main purpose was to assess low-to-moderate family income levels in the Willis Creek/Rice Creek area of Douglas County, Oregon for OECDD. As a courtesy to the community, an additional question about the local water improvement district was also included.

The results indicate that the community does not meet the 50% low-to-moderate family income level required to qualify for desired OECDD loans or grants. Even if persons who refused the income question or did not know the answer to it were included, the results show that the final result would not have been different.

This is the fourth income survey conducted by OSRL for OECDD. The results continue to indicate that telephone 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.