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DEPARTMENT OF
PUBLIC WORKS

SOLID WASTE DIVISION

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September 20, 1988

Transportation and Community Development/
Budget and Finance Committees
Sacramento, California

Honorable Members in Session:

SUBJECT: RESIDENTIAL GARBAGE COLLECTION CUSTOMER SATISFACTION SURVEY

SUMMARY

In March 1988, the joint Budget and Finance/Transportation and Community Development Committees directed staff to include a customer satisfaction survey in its reports regarding residential garbage collection. J. D. Franz Research, a local firm, was selected to perform a telephone survey. The survey interviews were conducted in July, 1988. Findings of the survey indicate that 94.8% of City residents are satisfied with their garbage collection service, and 92.1% believe the City is doing an "excellent" or "good" job at handling the garbage collection. The consultant's final report is attached for Committee acceptance and to forward to the City Council for information.

BACKGROUND

In March 1988, the joint Budget and Finance/Transportation and Community Development Committees directed staff to include a customer satisfaction survey in its reports regarding residential garbage collection. On May 24, 1988 a status report was presented to the joint committees. Proposals were solicited from eight local firms who specialize in public opinion surveys and market research. Six proposals were received, and three firms were interviewed. J. D. Franz Research was selected to perform a telephone survey to determine the extent to which City residents are satisfied with their regular garbage collection service.

Based on information provided by the Public Works Department, the consultant designed a draft survey interview which was distributed to City Council members, the City Manager's office and the Public Information Officer for review. Several comments were received and the survey instrument was modified appropriately. Telephone interviews were conducted in mid July, 1988. The sample for the survey was a computer-generated random digit dialing sample designed to obtain responses which could be generally applied to City residents as a whole within predetermined statistical limits. Over 1,000 interviews were completed which allows the findings to have a 95% chance of being within three percentage points of the findings one would obtain if every Sacramento City resident were interviewed.

SURVEY FINDINGS

The survey methods, findings, and conclusions are presented in the Final Report on Customer Satisfaction Survey prepared by J. D. Franz Research. A copy of the Final Report is attached. The survey findings indicate that:

1. Two thirds of City residents are very satisfied with their garbage collection service and another quarter are satisfied. The combined satisfied and very satisfied customers represent 94.8% of all residents. Of those surveyed, 92.1% said that the City is doing an "excellent" or "good" job at garbage collection services. Cross tabulations of the data with respondent demographics showed no statistically significant subgroup differences.
2. Residents with 90 gallon container automated collection service are more likely to be very satisfied than those with the traditional service.
3. Of the 30.2% of residents who have had occasion to call the City about garbage service, over three quarters were satisfied with the outcomes of the calls and said the customer assistance person was courteous and took appropriate action.
4. In the last year 4.5% of residents have experienced 2 or more pickup misses. Over one quarter of these pickup misses were attributed to the residents and not the City. [It is unknown how many of these misses are attributable to the service day and route changes of implementing the 90 gallon container automated collection service.]
5. Three specific areas are problematic according to residents. One is the pick-up failure rate. Follow-through failures for missed pick-ups and special pick-ups is another. And, there are some mixed messages about the collectors leaving a mess. [It is noteworthy that many respondents who noted messes referred to "clippings" left behind. It is likely that this relates to the un-containerized garden refuse collection and not to garbage collection.]

In conclusion, the results of this survey show that more than nine tenths of the residential customers are approving of the garbage collection services currently provided. In other words, the City has been given a grade of A- in the area of residential garbage collection. Specific areas identified by the survey as reasons for dissatisfaction will assist staff in identifying and correcting the few problem areas. The Department of Public Works will be studying these and taking appropriate action in the coming weeks and months.

FINANCIAL

This report requires no financial decision.

RECOMMENDATION

Staff recommends the Joint Committees accept the Final Report on Customer Satisfaction Survey prepared by J.D. Franz Research and forward it to the full City Council for its information.

Respectfully submitted,



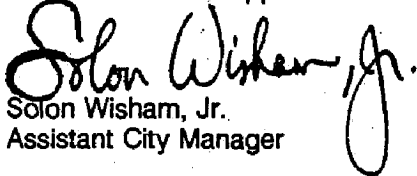
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Approved:



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Recommendation Approved:



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September 20, 1988
All Districts

CITY OF SACRAMENTO
DEPARTMENT OF PUBLIC WORKS
SOLID WASTE DIVISION
CUSTOMER SATISFACTION SURVEY
Final Report

**JDFERANZ
RESEARCH**

CONTENTS

EXECUTIVE SUMMARY	i
I. INTRODUCTION	1
II. METHODS	2
III. FINDINGS	11
IV. CONCLUSIONS	31
APPENDIX A: SURVEY INSTRUMENT	
APPENDIX B: ZIP CODE MAP	

EXECUTIVE SUMMARY

Introduction

- . The survey of Sacramento city residential garbage customers that is the subject of this report was commissioned by the City's Department of Public Works, Solid Waste Division, from the Sacramento-based public opinion and marketing research firm of J.D. Franz Research.
- . The primary purpose of the survey was to determine the extent to which residents are satisfied with their regular garbage collection service.
- . The survey was conducted between July 6 and July 18, 1988. A total of 1,073 interviews were completed.

Methods

- . The instrument that was used in conducting the survey was designed by J.D. Franz Research on the basis of questions posed by representatives of the Solid Waste Division.
- . The sample for the survey was a computer-generated random digit dialing sample designed to obtain responses generalizable to City residents as a whole within predetermined statistical limits.
- . Potential respondents were screened for City residence and for responsibility for their own garbage. Within eligible households, the individual to be interviewed was selected via the "youngest male adult - youngest female adult" technique.
- . All of the interviewers who administered the survey underwent intensive training and briefing prior to conducting any actual interviews.
- . Calling for the survey was conducted from a central location under continuous supervision. In order to ensure that working people were adequately represented, all calls were placed during the evening and on weekends.
- . Approximately half of the surveys were completed using up to three attempts to reach an eligible respondent at each number in the sample. When this approach was found to be minimally productive, the remaining interviews were completed using a two-call design.

Closed-ended questions were coded by interviewers, while open-ended questions were coded by an experienced team working in pairs and as a group.

The data were tabulated and analyzed using SPSS/PS+.

The findings are generalizable to all telephone-owning households at the 95 percent confidence level with a tolerance interval or margin of error of ± 3 percent.

Comparisons of the sample demographics to population characteristics as developed by the United States Census indicate close or virtual congruence on all measures except income. While the disparity probably reflects actual income change since 1980, no data are presently available to substantiate this contention.

Findings

Close to two-thirds of residents are very satisfied with their garbage collection service, and another somewhat over a quarter are somewhat satisfied. When these two values are summed, satisfied customers represent over nine-tenths of the total. No statistically significant differences exist among population subgroups on this issue.

By far the largest group of satisfied customers simply gave "no complaints" as their reason, with the second-largest group indicating that garbage pick-ups are made on time.

Among dissatisfied customers, the predominant reasons were that the service is too expensive and that the garbage collectors leave a mess.

Somewhat over two-thirds of residents have 90-gallon garbage cans. Of these, roughly a third each have had the cans less than six months, six months to a year, and more than a year. Those with 90 gallon cans are more likely to be very satisfied than those with regular cans.

By far the majority of residents have never experienced a failure of the City to pick up their garbage on their regular collection day. There are no statistically significant differences on this matter by size of garbage can.

Among those who have experienced a pick-up failure, the largest group has experienced a single failure. This finding applies both to the last five years and to the past year.

- . Multiple pick-up failures have been experienced by 9.3 percent of residents over the last five years and by 4.5 percent of residents over the past year.
- . Most residents do not know any particular reason why their garbage was not picked up. It is worth noting, however, that over a quarter of the most recent failures can be attributed to the customers rather than to the City.
- . Most residents called the City when their garbage was not picked up. The City followed through by picking up the garbage when they said they would in somewhat over three-quarters of these cases. The extent to which the City followed up is not statistically related to size of garbage can.
- . Virtually all residents find their garbage cans generally placed back where they put them out for collection.
- . The vast majority find that the garbage collectors either "never" or "rarely" leave a mess. Residents with 90-gallon cans are slightly less likely to experience messy pick-ups.
- . Most residents evaluate the appearance of the City's garbage trucks as either "excellent" or "good." The extent to which residents are very satisfied with their garbage collection service increases with the positiveness of their evaluations of the garbage trucks' appearance.
- . Close to a third of residents have had occasion to call the City's garbage collection service on the telephone. When they did call, most residents were "very satisfied" with the outcome. Those who were dissatisfied tended to have problems getting through, not to get what they wanted, or not to have their garbage picked up.
- . Assessments of the individuals with whom customers spoke on the phone were very positive. Strong majorities found the telephone answerer courteous, willing to listen, able to answer questions, and capable of following through. The most negative reactions arose with respect to follow-through, which is not statistically related to size of garbage can.
- . The vast majority of residents have not asked the City for a special garbage pick-up. The types of pick-ups that have been requested are roughly evenly divided between extra garbage on the customer's regular collection day and garbage on a day other than the regular collection day.
- . In most instances, the City followed through and made the special pick-up when it said it would. However, ten percent

of those who made requests said the City did not make the special pick-up as agreed. This finding is not statistically related to size of garbage can.

- . By far the majority of residents can be said to approve of the job the City is doing in collecting customers' garbage. The total approval rating ("excellent" and "good" ratings combined) is in excess of nine-tenths of residents.

- . Middle-aged respondents (those aged 35-54) and those with higher incomes are more likely to approve of the City's service than young adults, older adults, and those with low incomes.

Conclusions

- . Residents of the City of Sacramento are clearly satisfied with their garbage collection service.
- . Those with 90-gallon cans tend to be more satisfied than those with regular cans.
- . Three specific areas may merit further attention. These include what seems to be a relatively high pick-up failure rate, problems with follow-through, and the extent to which the garbage collectors leave a mess.
- . There is, in fact, a relationship between customer satisfaction and perceptions of the appearance of the garbage trucks. Because the relationship does not indicate causality, however, additional study may be called for before any action is taken.

I. INTRODUCTION

The survey of Sacramento City residential garbage customers that is the subject of this report was commissioned by the City's Department of Public Works, Solid Waste Division, from the Sacramento-based public opinion and marketing research firm of J.D. Franz Research on June 3, 1988. The primary purpose of the survey was to determine the extent to which residents are satisfied with their regular garbage collection service. Other objectives included assessing the City's responsiveness to requests for special pick-ups, evaluating the manner in which Solid Waste Division staff handle telephone inquiries, and determining the extent to which there is a relationship between customer satisfaction and the appearance of the City's garbage trucks.

Planning for the surveys took place in early June, 1988, and involved the Director of the Solid Waste Division, the Division's Administrative Assistant, the Deputy Director of Public Works, and the President of J.D. Franz Research. Survey design and pretesting were completed by late June. Actual dates for the survey interviews, which were conducted by telephone, were July 6-18. A detailed discussion of the methods used in conducting the survey can be found in Section II of this report.

Following this Introduction and the above-mentioned Methods section, the report is divided into two additional sections. Section III contains the survey Findings, and Section IV presents the research firm's Conclusions and Recommendations.

II. METHODS

Instrument Design

The instrument that was used in conducting the survey was designed by the President of J.D. Franz Research on the basis of questions posed by representatives of the Solid Waste Division. Revisions were made as a result of reviews by Division staff, City Council Members, the City Manager, the Assistant City Manager, and the City's Public Information Officer. A final draft was then pre-tested among a random sample of City residents, further minor modifications were made, and the instrument was submitted to the Division for approval. A copy of the instrument as approved can be found in Appendix A.

Sample Selection

The sample for the survey was a computer-generated random digit dialing sample designed to obtain responses generalizable to the City as a whole within predetermined statistical limits. Random digit dialing, the most sophisticated and accurate method of telephone interview sample selection, has the advantage over directory sampling of including households with unlisted, too new to be listed, or inaccurately listed numbers. This approach permits the results to be generalized to all telephone-owning households in the designated areas.

Prefixes for the sample (the first three digits of a telephone number) were selected by the Solid Waste Division's Administrative Assistant to include all residences in the city. These prefixes were then randomly assigned the remaining four digits of a telephone number by computer, and the resulting seven-digit numbers were printed out onto call record sheets designed to facilitate interviewers' recording of their progress toward full sample implementation.

Potential respondents at the numbers thus selected were further screened for residence within the City limits and responsibility for their own garbage. A total of four screening questions was used to ensure that residents of the unincorporated area surrounding the City and those whose garbage is handled by a landlord or property manager were excluded from the sample.

Within households, the individual to be interviewed was selected via the "youngest male adult - youngest female adult" technique. This respondent selection technique is relatively simple for interviewers to implement and has been demonstrated to achieve an age-sex distribution that approximates population parameters. In implementing this technique, the interviewer merely concludes the introduction to the survey by asking to interview the youngest male of a specified age (or older) who is at home. If there is no male in residence or available, the interviewer asks to interview the youngest female within the specified age parameters who is at home. The extent to which use of this technique during the garbage collection survey achieved its purpose is discussed in the subsection entitled "Generalizability of the Findings" beginning on page 6.

Interviewer Training

All of the interviewers who administered the survey underwent intensive training and briefing prior to conducting any actual interviews. Training included instruction in interviewing techniques, orientation to the mechanics of sample selection and recording, and extensive practice with the survey instrument as well as with a systematic approach to answering respondents' inquiries. The briefing specific to this particular survey was conducted by the President of J.D. Franz Research.

Survey Implementation

Calling for the survey was conducted from a central location under continuous supervision. Upon completion of each interview, a supervisor immediately checked it for accuracy, clarity, and completeness so that any problem areas could be discussed with the interviewer while the conversation was still remembered. In order to ensure that working people were adequately represented, all calls were placed between the hours of 5-9 p.m. Monday through Thursday, 10 a.m. - 6 p.m. on Saturday, and 2-9 p.m. on Sunday.

Through July 12, when 545 surveys had been completed, up to three attempts were made to reach an eligible respondent at each of the numbers in the sample. Analysis of third-call results at that time indicated an additional completion rate of only 3.51%, however, and the City and the research firm therefore agreed to implement the remainder of the sample with only one call-back attempt. Callbacks to any given number were made on different days of the week and at different times of day in order to maximize the probability of finding an eligible individual at home. The results of the calling for all numbers in the sample are portrayed in Figure 1 on the following page.

FIGURE 1
RESULTS OF CALLING

TOTAL NUMBERS DIALED ONE OR MORE TIMES = 10,311

Less:

Numbers Not Assigned Or Not Working	= 3481	
Business Numbers	= 683	}
Numbers Not In Target Population	= 1312	

Equals:

Potentially Usable Numbers = 4835

Less:

Numbers At Which There Was No Appropriate Contact At Up to Three Attempts

No Answer, Busy Signal, Answering Machine	= 2783	
No Adult At Home	= 526	}
Communication Barrier (Foreign Language; Hearing Impaired)	= 79	
Scheduled Callback - No Answer	= 154	

Equals:

Numbers At Which Appropriate Contact Was Made = 1293

Less:

Refusals	= 138	
Interviews Terminated In Progress	= 82	}

Equals:

Completed Interviews = 1073

Completed Interviews As A Percentage Of Appropriate Contacts = 83%

Refusals And Terminations As A Percentage Of Appropriate Contacts = 17%

Data Coding and Analysis

Coding of the survey's closed-ended questions was accomplished by the interviewers as they conducted the interviews. A coding team, comprised of the Interviewing Supervisor and experienced interviewing staff then coded the survey's three open-ended questions following the completion of all survey interviews. In order to achieve consistency, the coding team worked in pairs and as a group, checking each others' work and fully discussing any debatable responses prior to coding them.

The resulting data were key-entered into the data analytic software SPSS/PC+ using SPSS Data Entry and then computer-checked for accuracy, adherence to the pre-established coding scheme, and internal logic. Any erroneous data were compared to the original source documents before being corrected. Finally, tabulations and cross-tabulations were prepared and analyzed using SPSS/PC+.

Generalizability of the Findings

The total sample for this survey of n=1,073 permits the findings to be generalized at the 95 percent confidence level with a tolerance interval or margin of error of ± 3 percent. That is, the results can be said to have a 95 percent chance of being within three percentage points of the findings one would have obtained had one interviewed every Sacramento City resident.

Further evidence for the representativeness of the sample can be derived from comparisons of respondents' demographic characteristics to the characteristics of the City's population. These comparisons are portrayed in Tables 1, 2, 3, and 4. Considerable caution should be exercised in interpreting these data, as the City resident characteristics they reflect are substantially dated. They may, however, serve as indicators of the extent to which the sample

distribution is representative of the population distribution.

Insofar as respondents' and residents' ages are concerned (Table 1), the sample is within the margin of error for all but three subgroups. Those under the age of 30 may be underrepresented in the sample, and those between the ages of 35 and 44 may be overrepresented. It is quite possible, however, that these differences reflect differences between apartment-dwellers and those residing in single-family homes or duplexes rather than differences attributable to sampling.

Age Group	Distribution of Respondents		Distribution of Residents*
	Frequency	Percentage	
18 - 24 YEARS OLD	68	6.3%	17.7%
25 - 29 YEARS OLD	93	8.7%	12.8%
30 - 34 YEARS OLD	143	13.3%	10.6%
35 - 44 YEARS OLD	220	20.5%	13.5%
45 - 54 YEARS OLD	145	13.5%	13.2%
55 - 64 YEARS OLD	133	12.4%	14.2%
65 YEARS OLD OR OLDER	213	19.9%	18.0%
REFUSED	58	5.4%	-
TOTALS	1,073	100.0%	100.0%

* As percentages of those aged 18 and older.

Respondents' ethnicity as compared to residents' ethnicity (Table 2) is within the sample's margin of error for all but Hispanics and Blacks. Further, the differentials in the distributions of these groups between the sample and the population are not large, and they are of insufficient magnitude to affect the data. The fact remains, however, that Blacks and Hispanics are somewhat underrepresented in the sample.

TABLE 2

RESPONDENTS' ETHNICITY COMPARED
TO CITY RESIDENTS' ETHNICITY
ACCORDING TO THE 1980 UNITED STATES CENSUS

Ethnicity	Distribution of Respondents		Distribution of Residents
	Frequency	Percentage	
WHITE (NON-HISPANIC)	692	64.5%	62.3%
BLACK (NON-HISPANIC)	105	9.8%	13.1%
HISPANIC	91	8.5%	13.6%
ASIAN	80	7.5%	7.6%
AMERICAN INDIAN	15	1.4%	1.2%
FILIPINO	11	1.0%	1.1%
OTHER	33	3.1%	1.1%
REFUSED	46	4.3%	-
TOTALS	1,073	100.0%	100.0%

With respect to respondents' versus residents' incomes (Table 3), it is clear that substantial differences exist between the sample and the population. In all probability, these data have been significantly affected by household income increases since 1980. As no more current data appear to be available, however, this contention is impossible to document at the present time.

TABLE 3

RESPONDENTS' HOUSEHOLD INCOMES COMPARED
TO CITY RESIDENTS' HOUSEHOLD INCOMES
ACCORDING TO THE 1980 UNITED STATES CENSUS

Income Level	Distribution of Respondents		Distribution of Residents
	Frequency	Percentage	
LESS THAN \$15,000	110	10.3%	51.1%
\$15,000 - \$24,999	137	12.8%	23.9%
\$25,000 - \$39,999	274	25.5%	17.4%
\$40,000 OR MORE	317	29.5%	7.5%
DON'T KNOW	32	3.0%	-
REFUSED	203	18.9%	-
TOTALS	1,073	100.0%	100.0%

The sex distribution of the sample (Table 4) is well within the margin of error relative to population characteristics. Women tend to have an edge, but it is slight.

TABLE 4

RESPONDENTS' SEX COMPARED
TO CITY RESIDENTS' SEX
ACCORDING TO THE 1980 UNITED STATES CENSUS

Sex	Distribution of Respondents		Distribution of Residents
	Frequency	Percentage	
MALE	491	45.8%	48.0%
FEMALE	582	54.2%	52.0%
TOTALS	1,073	100.0%	100.0%

The final demographic characteristic of respondents collected during this survey was ZIP Code, the distribution of which is displayed in Table 5. A ZIP Code map can be found in Appendix B.

TABLE 5

RESPONDENTS' ZIP CODES

Zip Code	Frequency	Percentage
95808	1	.1%
95813	1	.1%
95814	11	1.0%
95815	60	5.6%
95816	40	3.7%
95817	38	3.5%
95818	60	5.6%
95819	90	8.4%
95820	101	9.4%
95821	3	0.3%
95822	146	13.6%
95823	88	8.2%
95824	34	3.2%
95825	10	0.9%
95826	53	4.9%
95827	2	0.2%
95828	29	2.7%
95830	1	0.1%
95831	129	12.0%
95832	13	1.2%
95833	71	6.6%
95834	10	0.9%
95835	1	0.1%
95838	54	5.0%
95846	1	0.1%
95866	1	0.1%
95873	5	0.5%
95891	1	0.1%
DON'T KNOW	6	0.6%
REFUSED	13	1.2%
TOTALS	1,073	100.0%

III. FINDINGS

This section of the report presents the actual survey findings. For the reader's convenience in following the logic of the survey instrument and considering the precise phrasing of the inquiries, the data have been arranged in the same order as the survey questions.

Residents' general level of satisfaction with their garbage collection service is shown in Table 6. Close to two-thirds are very satisfied, and another somewhat over a quarter are somewhat satisfied. When these two values are summed, satisfied customers represent over nine-tenths (94.8 percent) of the total. Crosstabulations of the satisfaction data with respondent demographics (age, sex, ethnicity, and income) using chi-square analysis showed no statistically significant subgroup differences.

Response	Frequency	Percentage
VERY SATISFIED	700	65.2%
SOMEWHAT SATISFIED	318	29.6%
SOMEWHAT DISSATISFIED	39	3.6%
VERY DISSATISFIED	16	1.5%
TOTALS	1,073	100.0%

Residents' reasons for expressing satisfaction with their garbage collection service are displayed in Table 7, and their reasons for expressing dissatisfaction are displayed in Table 8. By far the largest group of satisfied customers simply gave "no complaints" as their reason, while the second-largest group indicated that garbage pick-ups are made on time. Other sizeable percentages of these respondents replied that they like the big (90-gallon) garbage cans, that the City does a good job, and that the garbage collectors never leave a mess.

TABLE 7

REASONS WHY CITY RESIDENTS ARE VERY OR SOMEWHAT SATISFIED WITH THEIR GARBAGE COLLECTION SERVICE

Reason	Frequency*	Percentage of Those Who Are Very or Somewhat Satisfied*
NO COMPLAINTS	494	48.5%
ON TIME - DAILY, WEEKLY	287	28.2%
LIKE BIG GARBAGE CANS	154	15.1%
DO A GOOD JOB	124	12.2%
NEVER LEAVE A MESS	108	10.6%
POLITE	56	5.5%
TOO EXPENSIVE	50	4.9%
LEAVE A GARBAGE MESS	46	4.5%
TAKE MORE THAN EXPECTED	22	2.2%
PICK-UPS NOT ON TIME	22	2.2%
DON'T LIKE 90-GALLON CAN	21	2.1%
GO ON PROPERTY TO GET CAN	18	1.8%
CAN NOT RETURNED TO PLACE	17	1.7%
CAN BACK IN PLACE	17	1.7%
LEFT A CLIPPINGS MESS	16	1.6%
CITY SHOULD RECYCLE	14	1.4%
CAN NOT EMPTIED	13	1.3%
NOT NOISY	12	1.2%
OBSTRUCTION PROBLEM	10	1.0%
RESOLVED PROBLEMS	9	0.8%
DON'T LIKE WORKERS	9	0.8%
WANT A 90-GALLON CAN	8	0.8%
GENERALLY SATISFIED	8	0.8%
WANT MORE SPECIAL PICK-UPS	7	0.7%
OCCASIONALLY MISSED	7	0.7%
DON'T DENT CANS	5	0.5%
DAMAGE CANS	4	0.4%
NOT INFORMED OF SCHEDULE CHANGE	3	0.3%
WON'T GO ON PROPERTY TO GET CAN	3	0.3%
GENERALLY NOT VERY SATISFIED	2	0.2%
CITY SHOULD CONTRACT OUT	2	0.2%
TAKE LESS THAN EXPECTED	1	0.1%
CITY SHOULD NOT CONTRACT OUT	1	0.1%
OTHER	53	5.2%

*Figures will add to more than 100 percent due to multiple responses.

TABLE 8

REASONS WHY CITY RESIDENTS ARE
VERY OR SOMEWHAT DISSATISFIED WITH THEIR
GARBAGE COLLECTION SERVICE

Reason	Frequency*	Percentage of Those Who Are Dissatisfied*
TOO EXPENSIVE	14	25.5%
LEAVE A GARBAGE MESS	9	16.4%
DON'T LIKE WORKERS	6	10.9%
WANT 90-GALLON CAN	5	9.1%
OCCASIONALLY MISSED	5	9.1%
TAKE LESS THAN EXPECTED	5	9.1%
DON'T LIKE 90-GALLON CAN	4	7.3%
CAN NOT EMPTIED	4	7.3%
PICK-UPS NOT ON TIME	4	7.3%
GENERALLY DISSATISFIED	3	5.5%
NO COMPLAINT	2	3.6%
DO A GOOD JOB	2	3.6%
ON TIME - DAILY, WEEKLY	2	3.6%
LIKE BIG GARBAGE CANS	2	3.6%
WANT MORE SPECIAL PICK-UPS	2	3.6%
OBSTRUCTION PROBLEM	2	3.6%
WON'T GO ON PROPERTY TO GET CAN	2	3.6%
CANS NOT RETURNED TO PLACE	1	1.8%
LEFT A CLIPPINGS MESS	1	1.8%
TAKE MORE THAN EXPECTED	1	1.8%
NOT INFORMED OF SCHEDULE CHANGE	1	1.8%
DON'T DENT CANS	1	1.8%
OTHER	8	14.5%

*Figures will add to more than 100 percent due to multiple responses.

Among dissatisfied customers, the predominant reasons were that the service is too expensive and that the garbage collectors leave a mess. The only other reason mentioned by more than a tenth of these respondents was that the customer doesn't like the workers. "Other" reasons, which were given by fifteen percent of dissatisfied

customers, are illustrated by the following:

- . 90-gallon can is limited in space.
- . They only take what you put in the can.
- . All the garbage in this neighborhood!

The careful reader will have noted that Tables 7 and 8 contain both positive and negative comments. In the case of Table 7, this is because some residents were explaining why they were only somewhat rather than very satisfied; residents whose answers are displayed in Table 8 could be explaining why they were only somewhat rather than very dissatisfied. In both instances, multiple responses could be given - e.g., "they're on time, but they sometimes leave a mess," or "they take less than I expected, but they do a good job." The full extent of any particular compliment problem area can be obtained by summing the figures in both tables.

Somewhat over two-thirds of residents have 90-gallon garbage cans, as shown in Table 9. Of these, as Table 10 indicates, roughly a third each have had the cans less than six months, six months to a year, and more than a year.

SIZE OF RESIDENTS' GARBAGE CANS		
Size	Frequency	Percentage
90-GALLON	727	67.8%
REGULAR	343	32.0%
DON'T KNOW	3	0.3%
TOTALS	1,073	100.0%

TABLE 10			
LENGTH OF TIME RESIDENTS WITH 90-GALLON CANS HAVE HAD THESE CANS			
Length of Time	Frequency	Percentage of Those With 90-Gallon Cans	Percentage of All Respondents
LESS THAN SIX MONTHS	260	35.8%	24.2%
SIX MONTHS TO ONE YEAR	231	31.8%	21.5%
OVER ONE YEAR	221	30.4%	20.6%
DON'T KNOW	15	2.1%	1.4%
TOTALS	727	100.0%	67.7%

Chi-square analysis of the relationship between size of garbage can and satisfaction with the City's garbage collection service showed statistically significant differences, as portrayed in Table 11. Those with 90-gallon cans are more likely to be very satisfied and less likely to be somewhat satisfied than those with regular cans.

TABLE 11		
RELATIONSHIP BETWEEN SIZE OF GARBAGE CAN AND RESIDENTIAL GARBAGE CUSTOMER SATISFACTION		
Level of Satisfaction	Size of Can	
	90-Gallon	Regular
VERY SATISFIED	67.8%	59.8%
SOMEWHAT SATISFIED	27.9%	33.5%
SOMEWHAT DISSATISFIED	2.9%	5.0%
VERY DISSATISFIED	1.4%	1.7%
TOTALS	100.0%	100.0%

$$x^2 = 15.980; df = 6; p = .0139$$

By far the majority of respondents have never experienced a failure of the City to pick up their garbage on their regular collection day, as shown in Table 12. When these data were cross-tabulated with size of garbage can using the chi-square statistic, no statistically significant differences emerged.

TABLE 12		
EXTENT TO WHICH THE CITY HAS EVER FAILED TO PICK UP RESIDENTS' GARBAGE		
Response	Frequency	Percentage
YES	201	18.7%
NO	870	81.1
DON'T KNOW	2	0.2%
TOTALS	1,073	100.0%

Within the past five years, the data for which are displayed in Table 13, the largest group of these residents has experienced only a single pick-up failure, although a fifth have experienced two failures and somewhat less than a third (29.4 percent) have experienced three or more failures. Among all residents, 9.3 percent have experienced more than one pick-up failure over the past five years.

TABLE 13

NUMBER OF TIMES RESIDENTS' GARBAGE
HAS NOT BEEN PICKED UP IN THE PAST FIVE YEARS

Number of Times	Frequency	Percentage of Those Whose Garbage Has Not Been Picked Up	Percentage of All Respondents
ONCE	89	44.3%	8.3%
TWICE	41	20.4%	3.8%
THREE TIMES	23	11.4%	2.1%
FOUR TO SIX TIMES	20	10.0%	1.9%
SEVEN TO TEN TIMES	6	3.0%	0.6%
MORE THAN TEN TIMES	10	5.0%	0.9%
NOT IN PAST FIVE YEARS	4	2.0%	0.4%
DON'T KNOW	8	4.0%	0.7%
TOTALS	201	100.0%	18.7%

Data on pick-up failures during the past year are presented in Table 14. Again, the largest group, close to half of those who have experienced any failures, has experienced a single failure in the past year, while a quarter have experienced no failures at all. Two or more failures during the past year have, however, been experienced by almost a quarter (24.4 percent) of these respondents, or 4.5 percent of the total.

TABLE 14

NUMBER OF TIMES RESIDENTS' GARBAGE
HAS NOT BEEN PICKED UP IN THE LAST YEAR

Number of Times	Frequency	Percentage of	
		Those Whose Garbage Has Not Been Picked Up	Percentage of All Respondents
ONCE	91	45.3%	8.5%
TWICE	26	12.9%	2.4%
THREE TIMES	11	5.5%	1.0%
FOUR OR MORE TIMES	12	6.0%	1.1%
NOT IN PAST YEAR	52	25.9%	4.9%
DON'T KNOW	9	4.5%	0.8%
TOTALS	201	100.0%	18.7%

Reasons why the City failed to pick up residents' garbage on the appointed day during the most recent occurrence are displayed in Table 15. The largest group responded that they did not know, and the second largest group simply said words to the effect of, "They just missed it." It is worth noting, however, that over a quarter of these most recent failures (28.5 percent) can be attributed to the customers rather than to the City, for reasons that include obstructed, too full or heavy, misplaced, and not-at-all-placed cans.

TABLE 15

REASONS THE CITY FAILED TO MAKE GARBAGE PICK-UPS

Reason	Frequency*	Percentage of Those Whose Garbage Has Not Been Picked Up*
THEY JUST MISSED IT	33	16.4%
CITY DID NOT EXPLAIN	18	9.0%
FORGOT TO PUT CAN OUT	15	7.5%
CAN WAS TOO FULL OR HEAVY	15	7.5%
CAN WAS TOO FAR FROM CURB	14	7.0%
CAN WAS OBSTRUCTED	13	6.5%
DRIVER WAS NEW	9	4.5%
COLLECTION DAY WAS A HOLIDAY	6	3.0%
SCHEDULE WAS CHANGED - NOT NOTIFIED	5	2.5%
TRUCK BROKE DOWN	3	1.5%
OTHER	15	7.5%
DON'T KNOW	69	34.3%

* Figures will add to more than 100 percent due to multiple responses.

Most residents called the City when their garbage was not picked up, as shown in Table 16. Moreover, the City followed through by picking up the garbage when they said they would in over three-quarters of cases, as Table 17 indicates. In seventeen percent of cases, or among two percent of all residents, however, the City failed to pick up the garbage as promised the second time around. Chi-square analysis of these data by size of garbage can showed no statistically significant differences.

TABLE 16			
EXTENT TO WHICH RESIDENTS WHOSE GARBAGE WAS NOT PICKED UP CALLED THE CITY			
Response	Frequency	Percentage of Those Whose Garbage Has Not Been Picked Up	Percentage of All Respondents
YES	144	71.6%	13.4%
NO	51	25.4%	4.8%
DON'T KNOW	4	2.0%	0.4%
NO RESPONSE	2	1.0%	0.2%
TOTALS	201	100.0%	18.8%

TABLE 17			
EXTENT TO WHICH THE CITY PICKED UP THE MISSED GARBAGE WHEN THEY SAID THEY WOULD			
Response	Frequency	Percentage of Those Who Have Called	Percentage of All Respondents
YES	112	77.8%	10.4%
NO	25	17.4%	2.3%
DON'T KNOW	7	4.9%	0.7%
TOTALS	144	100.0%	13.4%

Virtually all residents find their garbage cans generally placed back where they put them out for collection, as shown in Table 18. Further, as Table 19 indicates, the vast majority find that the garbage collectors either "never" or "rarely" leave a mess (91.8 percent total). The fact remains, however, that over a fifth occasionally encounter a mess, and close to eight percent (7.5 percent) "sometimes" or "usually" experience a messy pick-up.

TABLE 18		
EXTENT TO WHICH RESIDENTS' GARBAGE CANS ARE RETURNED TO THE PLACES THEY PUT THEM FOR COLLECTION		
Response	Frequency	Percentage
YES	1031	96.1%
NO	33	3.1%
DON'T KNOW	8	0.7%
REFUSED	1	0.1%
TOTALS	1,073	100.0%

TABLE 19		
EXTENT TO WHICH THE CITY'S GARBAGE COLLECTORS LEAVE A MESS		
Response	Frequency	Percentage
USUALLY	18	1.7%
SOMETIMES	62	5.8%
RARELY	243	22.6%
NEVER	742	69.2%
DON'T KNOW	7	0.7%
REFUSED	1	0.1%
TOTALS	1,073	100.0%

Residents with 90-gallon cans are slightly less likely to experience messy pick-ups, as shown in Table 20. Although the relationship is statistically significant, however, its practical importance is relatively minor.

TABLE 20		
EXTENT TO WHICH THE CITY'S GARBAGE COLLECTORS LEAVE A MESS BY SIZE OF GARBAGE CAN		
Response	Size of Can	
	90-Gallon	Regular
USUALLY	1.5%	2.0%
SOMETIMES	5.6%	6.1%
RARELY	21.5%	25.4%
NEVER	71.0%	65.5%
NO OPINION	0.4%	0.9%
TOTALS	100.0%	100.0%

$\chi^2 = 54.0129$, $df = 8$; $p = .0000$.

Most residents (52.5 percent) evaluate the appearance of the City's garbage trucks as either "excellent" or "good," as Table 21 indicates. The second most prevalent response to this question was "don't know" or something similar to, "Who cares? They look like garbage trucks!" (36.1 percent total) "Fair" and "poor" responses, on the other hand, represent only somewhat over a tenth of residents (11.3 percent).

TABLE 21		
RESIDENTS' EVALUATIONS OF THE APPEARANCE OF THE CITY'S GARBAGE TRUCKS		
Evaluation	Frequency	Percentage
EXCELLENT APPEARANCE	143	13.3%
GOOD APPEARANCE	421	39.2%
FAIR APPEARANCE	116	10.8%
POOR APPEARANCE	5	0.5%
WHO CARES?/THEY LOOK LIKE GARBAGE TRUCKS	105	9.8%
DON'T KNOW	282	26.3%
REFUSED	1	0.1%
TOTALS	1,073	100.0%

Chi-square analysis of the relationship between customer satisfaction and evaluations of the garbage trucks' appearance also showed statistically significant differences, as portrayed in Table 22. The extent to which customers are very satisfied increases with the positiveness of their evaluations of the trucks' appearance, while the extent to which they are somewhat satisfied decreases. Similarly, dissatisfaction increases as evaluations of the trucks' appearance become more negative.

TABLE 22

RELATIONSHIP BETWEEN EVALUATIONS OF THE GARBAGE TRUCKS' APPEARANCE AND RESIDENTIAL GARBAGE CUSTOMER SATISFACTION

Level of Satisfaction	Appearance of Garbage Trucks					
	Excellent	Good	Fair	Poor	Who Cares?	Don't Know
VERY SATISFIED	81.8%	69.1%	43.1%	20.0%	65.7%	61.0%
SOMEWHAT SATISFIED	16.1%	27.3%	44.8%	60.0%	25.7%	34.4%
SOMEWHAT DISSATISFIED	1.4%	2.6%	11.2%	-	3.8%	3.2%
VERY DISSATISFIED	0.7%	1.0%	0.9%	20.0%	4.8%	1.4%
TOTALS	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

$\chi^2 = 83.555$; $df = 15$; $p = .0000$

As portrayed in Table 23, close to a third of residents have had occasion to call the City's garbage collection service on the telephone, while somewhat over two-thirds have not. When they did call, most residents were "very satisfied" with the outcome, as Table 24 indicates. "Very satisfied" and "somewhat satisfied" responses represent somewhat over three-quarters (78.1 percent) of callers.

TABLE 23		
EXTENT TO WHICH RESIDENTS HAVE EVER CALLED THE CITY'S GARBAGE COLLECTION SERVICE ON THE TELEPHONE		
Response	Frequency	Percentage
YES	324	30.2%
NO	733	68.3%
DON'T KNOW	15	1.4%
REFUSED	1	0.1%
TOTALS	1,073	100.0%

TABLE 24			
DEGREE TO WHICH CALLERS WERE SATISFIED WITH THE OUTCOMES OF THEIR CALLS			
Response	Frequency	Percentage of Those Who Have Called	Percentage of All Respondents
VERY SATISFIED	177	54.6%	16.5%
SOMEWHAT SATISFIED	76	23.5%	7.1%
SOMEWHAT DISSATISFIED	23	7.1%	2.1%
VERY DISSATISFIED	34	10.5%	3.2%
NO OPINION	14	4.3%	1.3%
TOTALS	324	100.0%	30.2%

Reasons for dissatisfaction with call outcomes are displayed in Table 25. The predominant reason was difficulty getting through, either to the Solid Waste Division or to the appropriate individual. Other relatively prominent reasons were not getting what the customer wanted, not getting one's garbage picked up, and experiencing rudeness on the part of the person on the phone.

TABLE 25

REASONS WHY SOME RESIDENTS WERE VERY OR SOMEWHAT
DISSATISFIED WITH THE OUTCOMES OF THEIR CALLS

Reason	Frequency*	Percentage of Those Who Were Dissatisfied
LINES BUSY/LEFT ON HOLD/ PASSED AROUND	18	31.6%
DIDN'T GET WHAT I WANTED	17	29.8%
DIDN'T PICK UP THE GARBAGE	14	24.6%
PERSON WAS RUDE	7	12.3%
SAID I MUST PAY FOR PICKUP	3	5.3%
CHARGES WERE UNWARRANTED	2	3.5%
WOULDN'T GIVE ME A 90-GALLON CAN	1	1.8%
OTHER	7	12.3%
DON'T KNOW	1	1.8%

* Figures will add to more than 100 percent due to multiple responses.

Customer requests that were not granted ("not getting what the customer wanted") are illustrated by the following responses:

- . They gave us some lame excuses for not picking up our cans - something about not having enough space between cans.
- . I wanted to dump my own garbage, but the city said it was illegal.
- . They never gave me a definite time frame for when they would stop charging for street waste pick-up.

"Other" responses, which represent more than ten percent of the total, include the following answers:

- . I threatened to not pay for service; garbage then was picked up.
- . My trash can got messed up; it looked like the truck smashed

it. Supervisor said they would replace it and then called back and said he couldn't do anything about it.

Assessments of the individuals with whom customers spoke on the phone were very positive, as Table 26 indicates. Strong majorities found the telephone answerer courteous, willing to listen, able to answer questions, and capable of following through. The most negative reaction arose with respect to follow-through, with twelve percent indicating that the individual had not taken appropriate action. Crosstabulations of these data with size of garbage can using chi-square analysis showed no statistically significant differences.

ASSESSMENTS OF THE PERSON ON THE TELEPHONE				
Area of Assessment	Percentage Response Among Those Who Have Called			
	Yes	No	Don't Know	Not Applicable
WAS THE PERSON COURTEOUS?	83.4%	7.1%	9.4%	-
DID THE PERSON LISTEN TO THE CALLER'S CONCERN?	87.3%	3.2%	9.4%	-
DID THE PERSON ANSWER ANY QUESTIONS THE CALLER HAD?	78.6%	7.5%	9.7%	4.2%
DID THE PERSON TAKE APPROPRIATE ACTION? IF THE PERSON NEEDED TO CALL BACK, WAS THAT COMMITMENT PROMPTLY KEPT?	75.3%	12.0%	10.1%	2.6%
	23.1%	5.8%	10.4%	60.7%

The vast majority of residents have not asked the City for a special garbage pick-up, as shown in Table 27. The types of pick-ups that have been requested, displayed in Table 28, are roughly evenly divided between extra garbage on the customer's regular collection

day and garbage on a day other than the regular collection day, with a slight edge going to extra garbage on the regular day.

TABLE 27		
EXTENT TO WHICH RESIDENTS HAVE ASKED THE CITY FOR A SPECIAL GARBAGE PICK-UP		
Response	Frequency	Percentage
YES	71	6.6%
NO	997	92.9%
DON'T KNOW	5	0.5%
TOTALS	1,073	100.0%

TABLE 28			
TYPE OF SPECIAL PICK-UP REQUESTED			
Type of Pickup	Frequency	Percentage of Those Who Have Requested Special Pick-ups	Percentage of All Respondents
EXTRA GARBAGE ON REGULAR COLLECTION DAY	33	46.5%	3.1%
GARBAGE ON A DAY OTHER THAN REGULAR DAY	26	36.6%	2.4%
BOTH	7	9.9%	0.6%
DON'T KNOW	4	5.7%	0.4%
NO RESPONSE	1	1.4%	0.1%
TOTALS	71	100.0%	6.6%

In most instances, as Table 29 indicates, the City followed through and made the special pick-up when it said it would. However, ten percent of those who made requests said the City did not make the special pick-up as agreed. Chi-square analysis of these data with size of garbage can showed no statistically significant differences.

TABLE 29			
EXTENT TO WHICH THE CITY MADE THE SPECIAL PICK-UP WHEN THEY SAID THEY WOULD			
Response	Frequency	Percentage of Those Who Have Requested a Special Pickup	Percentage of All Respondents
YES	60	84.5%	5.6%
NO	7	9.9%	0.6%
YES AND NO	1	1.4%	0.1%
DON'T KNOW	3	4.2%	0.3%
TOTALS	71	100.0%	6.6%

By far the majority of residents can be said to approve of the job the City is doing in collecting customers' garbage, as shown in Table 30. Close to half think the City is doing an "excellent" job, and well over two-fifths think it is doing a "good" job, for a total approval rating in excess of nine-tenths of residents (92.1 percent). Less than one percent think the City is doing a "poor" job.

TABLE 30		
GENERAL ASSESSMENT OF THE JOB THE CITY IS DOING OF COLLECTING RESIDENTS' GARBAGE		
Assessment	Frequency	Percentage
EXCELLENT	518	48.3%
GOOD	470	43.8%
FAIR	67	6.2%
POOR	10	0.9%
DON'T KNOW	5	0.5%
REFUSED	3	0.3%
TOTALS	1,073	100.0%

When these data were cross-tabulated with respondent demographics, chi-square analysis showed statistically significant differences among both age groups and income levels, as shown in Tables 31 and 32. No significant differences were found between the sexes or among ethnic groups.

TABLE 31							
GENERAL ASSESSMENT OF THE JOB THE CITY IS DOING OF COLLECTING RESIDENTS' GARBAGE BY AGE							
Assessment	Age Group						
	18-24	25-29	30-34	35-44	45-54	55-64	65+
EXCELLENT	38.2%	34.4%	47.2%	52.3%	57.2%	50.8%	49.5%
GOOD	52.9%	52.7%	43.0%	39.1%	36.6%	42.4%	46.2%
FAIR	8.8%	9.7%	7.7%	8.6%	3.4%	5.3%	3.3%
POOR	-	2.2%	2.1%	-	1.4%	0.8%	0.9%
DON'T KNOW	-	1.1%	-	-	1.4%	0.8%	-
TOTALS	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 32				
GENERAL ASSESSMENT OF THE JOB THE CITY IS DOING OF COLLECTING RESIDENTS' GARBAGE BY INCOME				
Assessment	Income Level			
	Less than \$15,000	\$15,000- 24,999	\$25,000- 39,999	\$40,000 and Over
EXCELLENT	45.5%	43.1%	47.6%	57.1%
GOOD	49.1%	45.3%	44.7%	37.2%
FAIR	5.5%	10.2%	5.5%	5.4%
POOR	-	1.5%	1.5%	0.3%
DON'T KNOW	-	-	0.7%	-
TOTALS	100.0%	100.0%	100.0%	100.0%

Insofar as age groups are concerned (Table 31), "excellent"

assessments increase across the age groups between 18-24 and 45-54 and then decrease among those 55 and older. Paralleling these data are decreases in "good," "fair," and "poor" assessments through age 54 followed by increases in the 55 and older categories.

"Excellent" assessments also increase with increasing income (Table 33), while "good" and "poor" assessments decrease. "Fair" assessments do not display any particular pattern across income categories.

III. CONCLUSIONS AND RECOMMENDATIONS

Residents of the City of Sacramento are clearly satisfied with their garbage collection service. Moreover, those who have 90 gallon garbage cans tend to be more satisfied than those with regular cans, which reinforces the City's decision to move forward with the distribution of the larger cans. It also strongly suggests that complaints about difficulties in storing or maneuvering the cans are relatively isolated phenomena rather than indicators of more prevalent general attitudes.

There are, however, three specific areas that the survey suggests are problematic and that tend to reflect relative dissatisfaction. Because all of these areas would appear to have the potential for improvement at relatively minimal cost, they may merit further attention.

First, the City seems to have a relatively high pick-up failure rate, at least according to residents. Close to a fifth of residents have experienced a pick-up failure in the past five years, and many of these have experienced multiple failures. Even conceding the probability that roughly a quarter of these are customer-caused, this rate of failure seems high.

Second, there appear to be problems with follow-through. Follow-through failures emerge in the context of pick-ups that were missed, requests for special pick-ups, and telephone inquiries. Again, the rate of failure in these instances appears higher than need be.

Finally, there are some rather mixed messages about the extent to which the garbage collectors leave a mess. Although the vast majority of residents rarely or never find messes, the fact remains that close to a third find a mess at least occasionally. Although some messes are clearly customer-created (due to over-full or misplaced cans), it is difficult to believe that this level of

sloppiness is the sole responsibility of the customer.

A final conclusion concerns the relationship between customer satisfaction and the appearance (or at least the perception of the appearance) of the garbage trucks. Because the existence of a relationship does not indicate causality, the meaning of this finding is unclear. It is sufficiently counterintuitive, however, that further study may be warranted in order to determine the appropriate course of action.

APPENDIX A
SURVEY INSTRUMENT

CITY OF SACRAMENTO, DEPARTMENT OF PUBLIC WORKS
 SOLID WASTE DIVISION
 RESIDENTIAL REFUSE COLLECTION CUSTOMER SATISFACTION SURVEY

INTRODUCTION AND SCREENING QUESTIONS

Hello, this is _____ calling for the City of Sacramento. We are doing a survey of City residents this evening to find out what they think about their garbage collection service.

- A. Do you live in the City of Sacramento and pay a bill for garbage collection to the City?

YES = GO TO SCREENING QUESTION C

NO = THANK RESPONDENT AND TERMINATE

DON'T KNOW = CONTINUE

IF DON'T KNOW, ASK:

- B. Could you tell me what color your street sign is?

GREEN = SAY: Then you are a resident of the City.
 CONTINUE.

WHITE = THANK RESPONDENT AND TERMINATE
 (COUNTY RESIDENT)

DON'T KNOW = ASK RESPONDENT TO LOOK. IF UNABLE OR UNWILLING TO LOOK, ASK: Could you tell me what major intersection is nearest to your home? IF INTERSECTION PROVIDED, LOCATE ON MAP AND DETERMINE ELIGIBILITY. IF RESIDENCE IS IN CITY LIMITS, GO TO RESPONDENT SELECTION SECTION. IF RESIDENCE IS NOT IN CITY LIMITS, THANK RESPONDENT AND TERMINATE.

IF INTERSECTION NOT PROVIDED, RECORD AS A REFUSAL.

- C. Is your household responsible for making sure your garbage is collected, or is a landlord or property manager responsible for that?

HOUSEHOLD = GO TO RESPONDENT SELECTION SECTION

LANDLORD OR PROPERTY MANAGER = THANK AND TERMINATE

DON'T KNOW = CONTINUE

IF DON'T KNOW, ASK:

- D. Does someone in your household get your garbage can ready for collection?

YES = GO TO RESPONDENT SELECTION SECTION

NO = THANK AND TERMINATE

DON'T KNOW = THANK AND TERMINATE

RESPONDENT SELECTION

So that we talk to a representative sample of people, I would like to interview the youngest male adult in your household who is at least 18 years old and who is at home now.

IF NO MALE ADULT OR MALE ADULT NOT AVAILABLE, SAY:

Then I would like to interview the youngest female adult in your household who is at least 18 years old and who is at home now.

IF NO ADULT AT HOME OR AVAILABLE, OBTAIN AND RECORD CALLBACK TIME.
IF YOU GET ELIGIBLE ADULT, CONTINUE WITH QUESTION #1.

ID #
CODES ONLY

1. In general, how satisfied are you with your garbage collection service? Would you say that you are ...

- 1 = very satisfied
- 2 = somewhat satisfied
- 3 = somewhat dissatisfied
- or 4 = very dissatisfied?

2. And why would you say that you are _____?
(PROBE FOR SPECIFICS. PROBE FOR OTHER REASONS. RECORD VERBATIM. DO NOT CODE.)

3. Do you have a 90-gallon garbage can (SUPERCAN), or do you have a regular garbage can?

- 1 = 90 GALLON (CONTINUE)
- 2 = REGULAR (SKIP TO Q #5)
- 9 = DON'T KNOW (SKIP TO Q #5)

IF 90-GALLON CAN, ASK:

4. And about how long have you had your 90-gallon can (supercan)? _____

- 1 = LESS THAN SIX MONTHS
- 2 = 6 MONTHS TO ONE YEAR
- 3 = OVER ONE YEAR
- 9 = DON'T KNOW

5. Has the City ever failed to pick up your garbage on your regular collection day?

- 1 = YES (CONTINUE)
- 2 = NO (SKIP TO Q #11)
- 9 = DON'T KNOW (SKIP TO Q #11)

IF YES, ASK:

6. About how many times has your garbage not been picked up in the last five years? _____

- 1 = ONCE
- 2 = TWICE
- 3 = THREE TIMES
- 4 = FOUR TO SIX TIMES
- 7 = SEVEN TO TEN TIMES
- 8 = MORE THAN TEN TIMES

7. And about how many times has your garbage not been picked up in the past year? _____

- 1 = ONCE
- 2 = TWICE
- 3 = THREE TIMES
- 4 = FOUR OR MORE TIMES
- 5 = NOT IN PAST YEAR

8. Thinking about the most recent time the City failed to pick up your garbage ... do you remember what the reason was? (PROBE FOR SPECIFICS. RECORD VERBATIM. DO NOT CODE EXCEPT DON'T KNOW, REFUSED, OR SKIPPED.)

9. When your garbage was not picked up on your regular collection day, did you call the City and ask them to pick it up?

- 1 = YES (CONTINUE)
- 2 = NO (SKIP TO Q #10)
- 9 = DON'T RECALL (SKIP TO Q #10)

IF CALLED, ASK:

10. Did they come to pick it up when they said they would?

- 1 = YES
- 2 = NO
- 9 = DON'T KNOW

11. In general, is your garbage can returned to the place where you put it for collection?

- 1 = YES
- 2 = NO
- 9 = DON'T KNOW

12. And do the garbage collectors usually, sometimes, rarely, or never leave a mess when they pick up your garbage?

- 1 = USUALLY
- 2 = SOMETIMES
- 3 = RARELY
- 4 = NEVER
- 9 = DON'T KNOW/NO OPINION

13. How would you evaluate the appearance of the garbage trucks? Would you say that they have ...

- 4 = an excellent appearance
- 3 = a good appearance
- 2 = a fair appearance
- or 1 = a poor appearance?
- 8 = WHO CARES/THEY LOOK LIKE GARBAGE TRUCKS
- 9 = NO OPINION

14. Have you or has anyone else in your household ever called the City's garbage collection service on the phone?

- 1 = YES (CONTINUE)
- 2 = NO (SKIP TO Q #18)
- 9 = DON'T KNOW/RECALL (SKIP TO Q #18)

IF YES, ASK:

15. How satisfied were you with the outcome of your call? Were you...

- 4 = Very satisfied (SKIP TO Q #17)
- 3 = Somewhat satisfied (SKIP TO Q #17)
- 2 = Somewhat dissatisfied (CONTINUE)
- 1 = Very dissatisfied (CONTINUE)
- 9 = DON'T KNOW (SKIP TO Q #17)

IF VERY OR SOMEWHAT DISSATISFIED:

16. And why were you (very) (somewhat) dissatisfied?
(PROBE FOR SPECIFICS. PROBE FOR OTHER REASONS.
RECORD VERBATIM. DO NOT CODE.)

17. Now thinking about the person you spoke with on the telephone....

	YES	NO	DON'T KNOW/ NO OPINION	N/A
a. Was the person courteous?	1	2	9	0
b. Did the person listen to the caller's concern?	1	2	9	0
c. Did the person answer any questions the caller had?	1	2	9	0
d. Did the person take appropriate action?	1	2	9	0
e. If the person needed to call back, was that commitment promptly kept?	1	2	9	0

18. Have you ever asked the City for any kind of special garbage pickup?

- 1 = YES (CONTINUE)
- 2 = NO (SKIP TO Q #21)
- 9 = DON'T KNOW (SKIP TO Q #21)

IF ASKED FOR SPECIAL PICKUP, ASK:

19: Have you asked the City to pick up extra garbage on your regular collection day, to pick up garbage on a day other than your regular collection day, or to make both of these kinds of special pickups?

- 1 = EXTRA GARBAGE - REGULAR DAY
- 2 = GARBAGE ON OTHER THAN REGULAR DAY
- 3 = BOTH
- 9 = DON'T RECALL

20. When you asked the City for a special pickup, was the garbage picked up when they said it would be?

- 1 = YES
- 2 = NO
- 3 = SOMETIMES YES, SOMETIMES NO
- 9 = DON'T KNOW

21. In general, would you say that the City is doing an excellent, good, fair, or poor job of collecting residents' garbage?

- 4 = EXCELLENT
- 3 = GOOD
- 2 = FAIR
- 1 = POOR
- 9 = DON'T KNOW/NO OPINION

Now in order to classify your responses along with others, I need to ask a few questions about you ...

22. First, what is your ZIP code? _____

23. And what is your age? _____

24. We would also like to know your racial or ethnic background. Are you Caucasian, Black, Hispanic, Asian, American Indian, or some other ethnicity?

- 1 = CAUCASIAN/WHITE
- 2 = BLACK
- 3 = HISPANIC
- 4 = ASIAN
- 5 = AMERICAN INDIAN
- 6 = FILIPINO
- 8 = OTHER

25. What was the approximate total annual income for all members of your household before taxes in 1987... Was it \$25,000 or more, or was it less than \$25,000?

IF LESS THAN \$25,000, ASK: IF \$25,000 OR MORE, ASK:

a. Was it under or over \$15,000?

- 1 = UNDER \$15,000
- 2 = \$15,000 - \$24,999

b. Was it under or over \$40,000?

- 3 = \$25,000 - \$39,999
- 4 = \$40,000 OR MORE

26. RECORD RESPONDENT'S SEX: 1 = MALE 2 = FEMALE

27. RECORD CALL ATTEMPT: _____

THANK RESPONDENT.

DATE: _____

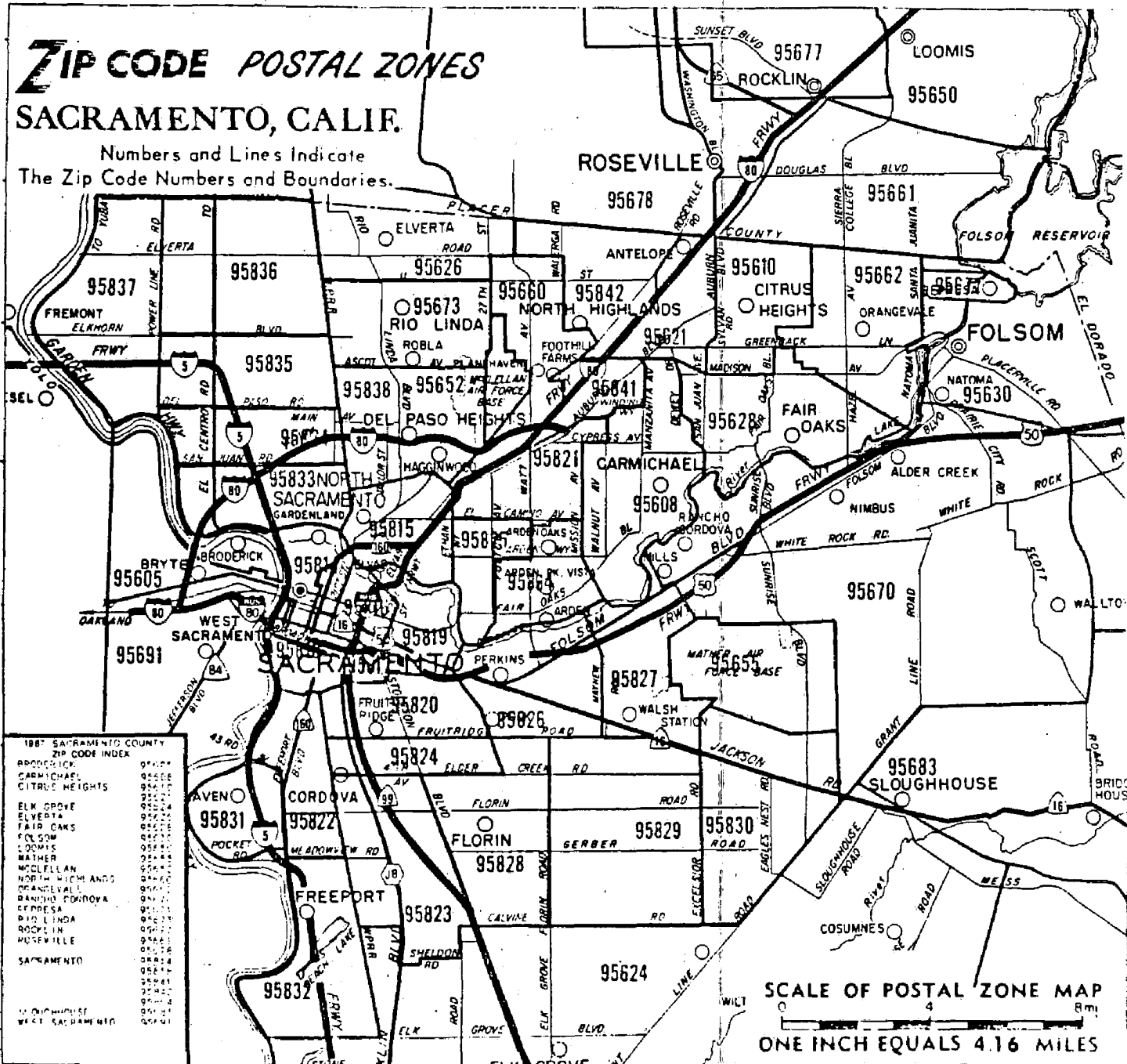
TIME: _____

INITIALS: _____

APPENDIX B
ZIP CODE MAP

ZIP CODE POSTAL ZONES SACRAMENTO, CALIF.

Numbers and Lines Indicate
The Zip Code Numbers and Boundaries.



1987 SACRAMENTO COUNTY ZIP CODE INDEX

ROOSEWICK	95600
CARMICHAEL	95601
CITRUS HEIGHTS	95602
ELK GROVE	95603
ELYERTA	95604
FAIR OAKS	95605
FOLSOM	95606
LOOMIS	95607
MATHER	95608
MCCLELLAN	95609
NORTH HIGHLANDS	95610
ORANGEVALE	95611
RANCHO BORDOVA	95612
CORDOVA	95613
RIO LINDA	95614
ROCKLIN	95615
ROSEVILLE	95616
SACRAMENTO	95617
WEST SACRAMENTO	95618
WALSH STATION	95619
JACKSON	95620
FLORIN	95621
GERBER	95622
FREEPORT	95623
ROCKLIN	95624
ROSEVILLE	95625
ROCKLIN	95626
ROSEVILLE	95627
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ROCKLIN	95696
ROSEVILLE	95697
ROCKLIN	95698
ROSEVILLE	95699
ROCKLIN	95700

SCALE OF POSTAL ZONE MAP
ONE INCH EQUALS 4.16 MILES



2

DEPARTMENT OF
PUBLIC WORKS

SOLID WASTE DIVISION

CITY OF SACRAMENTO
CALIFORNIA

1231 I STREET
SUITE 103
SACRAMENTO, CA
95814-2933

916-449-5757

September 20, 1988

Transportation and Community Development/
Budget and Finance Committees
Sacramento, California

Honorable Members in Session:

SUBJECT: FINAL REPORT ON CITY LANDFILL ELDERBERRY MITIGATION AREA INVESTIGATION

SUMMARY

An inter-agency Task Force has completed its investigation of the distressed elderberry plants and other riparian vegetation between the City landfill and the American River. The Final Report of the Task Force concludes that landfill gas is the cause of the plant distress and makes recommendations to the City for mitigating the damage. Staff concurs with the Task Force and recommends including the implementation of the mitigation measures in the proposed budget for fiscal year 1989-90.

BACKGROUND

During the February 1986 Flood, record quantities of water were released into the American River. The high flow rates associated with the flood caused some damage to the American River Levee System. One portion of the levee requiring repair was southeast of the Business 80 river crossing. The flood repair activities destroyed some elderberry bushes which are a habitat for the threatened species Valley Elderberry Longhorn Beetle (*Desmocerus Californicus Dimorphus*). As part of an inter-agency agreement between the California Department of Water Resources, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service, a mitigation project was planned which would replace the lost bushes at another location. The area chosen to plant the bushes was on the north side of the City Landfill on City property (apparently without the knowledge of the City). In late August 1987, the U.S. Fish and Wildlife Service sent a letter to the City of Sacramento Public Works Department regarding the death of some of the recently planted young Elderberry bushes. It was noticed that other plants in the area were also dead or distressed. Some connection between the City landfill and the distressed vegetation was suspected.

The City Public Works Department formed an inter-agency task force to investigate the causes of the distressed vegetation and to make recommendations to the City. The Task Force was first convened in September, 1987 and included members from the following organizations:

U.S. Fish and Wildlife Service
Central Valley Regional Water Quality Control Board
County of Sacramento Environmental Health Division
American River Flood Control District
California Waste Management Board
Sacramento County Air Pollution Control District
City of Sacramento Public Works Department
City of Sacramento Parks Department

The subsequent investigation carried out by the Task Force included literature reviews, aerial photos, ground environmental surveys, climatological data review, landfill gas testing, and soil investigations.

Public Works Department staff provided progress reports to City Council Committees in February, March, April, and June of this year.

Project staff prepared a draft report summarizing the investigation and conclusions of the Task Force. The draft report was circulated to Task Force members for review and comment. The Elderberry Mitigation Area Investigation Final Report was submitted to the City in late August, 1988. Copies of the Final Report were provided to Task Force members and a copy is submitted to members of the Joint Committees herewith.

As expressed in the Final Report, the Task Force has concluded that landfill gas is the cause of the distress and death of riparian vegetation including elderberry plants along the north side of the City landfill and near the American River. Displacement of oxygen in the root zone of the plants is believed to be the specific cause of the observed distress.

The Task Force has made the following recommendations to the City in its Final Report:

Complete the planned landfill gas recovery and migration control system. Monitor the area along the American River to assure that landfill gas is dissipated from the soil so the soil can support plant life. Plant 1,000 young elderberry plants in the area to mitigate the approximately 550 recently planted and naturally occurring elderberry plants which have died or will soon die as a result of the landfill gas. Monitor the plants for a three year period to assure that at least 550 plants grow to be well established, actively growing plants at the end of three years (some natural mortality is expected).

City staff concurs with the recommendations of the Task Force.

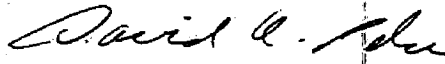
FINANCIAL

The recommendations of the inter-agency Task Force, if carried out, will result in some expense to the City. That expense has not yet been quantified. If the recommendations are approved, staff will need to develop cost estimates as part of preparing the next year's (1989-90) budget for Council consideration.

RECOMMENDATION

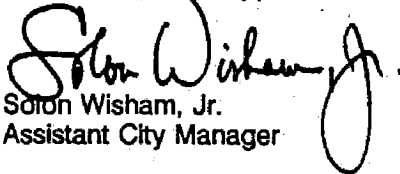
Staff recommends that the Joint Committees accept the Final Report of the Task Force, and forward it to the City Council with a recommendation that staff be directed to include implementation of the Task Force recommendations in the proposed budget for fiscal year 1989-90.

Respectfully submitted,



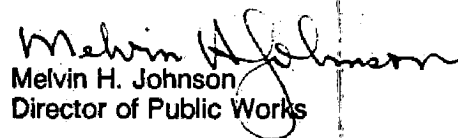
David A. Pelsner
Solid Waste Division Manager

Recommendation Approved:



Solon Wisham, Jr.
Assistant City Manager

Approved:



Melvin H. Johnson
Director of Public Works

September 20, 1988
District 1