CITY OF SAN DIEGO

STORM WATER POLLUTION PROGRAM

FOLLOW-UP SURVEY OF CITY RESIDENTS

FINAL REPORT

JD FRANZ RESEARCH, INC.
Public Opinion and Marketing Research

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CONTENTS

I. INTRODUCTION

The research findings presented in this report derive from a survey of residents of the City of San Diego that was commissioned by the City's Storm Water Pollution Program and conducted by JD Franz Research, Inc., of Sacramento. Encompassing 405 completed interviews, the survey was implemented between July 30 and August 16, 2002.

The primary purpose of the survey was to serve as a follow-up measure of awareness, attitudes, and behaviors relative to storm water pollution. The baseline survey was conducted in June and July of 2001. Specific areas of inquiry included the following:

- Importance of various issues the City of San Diego is dealing with
- Potential sources of storm water pollution that respondents own
- Among vehicle owners:
    - Whether vehicles are washed at home
    - Where the wash water runs
    - Whether oil is changed at home
    - How the used oil is disposed of
    - Whether radiators are drained at home
    - How the radiator fluid is disposed of
- Among those with gardens:
    - How lawn clippings or other green waste are disposed of
    - How clippings on walkways, patios, and driveways are cleaned up
    - How often water from the garden runs into the gutter or street
    - Whether pesticides, herbicides, or fungicides are used
    - How often these chemicals wash off into the street
    - How leftovers of these chemicals are disposed of
- Among those who have dogs:

    - How often droppings are picked up when the dog is being walked
    - How often dog droppings are cleaned up in yards
- Among those with recreational vehicles:
    - How often a formal waste station is used
    - Whether the hose is used
    - How the hose is handled
    - Whether residue is washed off
    - Whether liquid has been observed flowing away from the station
- After cooking, how grease in pots and pans is disposed of
- Among those who paint around the house:
    - Where paint brushes, rollers, and pans are cleaned out
    - How leftover paint is disposed of
- Extent to which respondents have experienced blocked sewers where they live
- Causes of blockages
- How often the sewer line from the house to the street is cleaned out
- How often respondents litter
- How often respondents empty trash or car ashtrays at freeway on- and off-ramps
- Presence of litter in respondents' neighborhoods (*new question in 2002*)
- How likely respondents are to pick up litter in their neighborhoods (*new question in 2002*)
- How often respondents visit the beach

- Among beach visitors:
    - Whether birds are fed
    - How often the water is used rather than a restroom
- Perceptions of the usual cause of beach closures due to contamination
- Water bodies that are viewed as being part of the community where respondents live (*new question in 2002*)
- Water bodies used for recreational purposes (*new question in 2002*)
- Health of the water body or bodies into which storm water from respondents' Zip Codes drain (*new question in 2002*)
- Familiarity with the concept of a watershed (*new question in 2002*)
- Among those familiar with the concept (*new questions in 2002*)
    - Ability to define the term
    - Whether respondents believe they live in a watershed
- Extent to which respondents have heard something about the storm drain system
- Where things that enter the storm drains go
- Awareness of the slogan "Think Blue"
- Sources of awareness of the slogan (*new question in 2002*)
- Meaning of the slogan
- Reactions to the slogan
- Probability of attending to various sources of information about preventing contamination of the ocean, bays, and beaches

- Respondent demographics, including Zip Code of residence, type of residence, home ownership status, educational attainment, age, ethnicity, income, and gender

Following this Introduction, the report is divided into three additional sections. **Section II** contains a detailed discussion of the **Research Methods** used in conducting the survey, while **Section III** presents and discusses the **Findings**. Finally, **Section IV** contains the research firm's **Conclusions and Recommendations**.

For reference, there are also two appendices. **Appendix A** contains a copy of the **Survey Instrument** that was used in conducting the research, and **Appendix B** includes **Detailed Data Tabulations** for all of the survey questions.

II. RESEARCH METHOD

Instrument Design

The survey instrument that was used in conducting this research was designed by the President of JD Franz Research in consultation with the Supervising Public Information Officer for the City of San Diego's Storm Water Pollution Prevention Program. Most of the questions were identical to those asked in the 2001 survey; new questions for 2002 are marked in the preceding section of this report. A pretest of the entire questionnaire yielded no significant modifications.

Sample Selection

The sample for the survey was a random digit dialing (RDD) telephone sample designed to represent all households in the City of San Diego. RDD, the most sophisticated strategy for telephone survey sampling, ensures the inclusion of unlisted, erroneously listed, and newly listed households in the sample. The 2002 sample was selected in precisely the same manner as the 2001 sample.

Interviewer Training

All of the interviewers who conducted the survey had undergone 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 survey instruments as well as with a systematic approach to answering respondents' inquiries.

Survey Implementation

Interviewing for the survey was conducted from the centralized and fully monitored facility at JD Franz Research under the ongoing oversight of full-time supervisors. Immediately upon completion of each interview, a supervisor 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 the event problems could not be resolved by recall, respondents were called back for clarification or amplification. Interviews that could not be corrected (n=10) were discarded and replaced so there would be no missing data in the database.

In order to ensure that working people were adequately represented, calling took place only during the evening hours (5 to 9 p.m.) and on weekends (10 a.m. to 6 p.m. on Saturdays and 2 to 9 p.m. on Sundays). Up to four attempts were made to reach an eligible respondent at each number in the sample.

Interviewing commenced on July 30 and was concluded on August 16. The cooperation rate for the survey was 84 percent, which is generally viewed as being excellent. A cooperation rate of this magnitude lends considerable credibility to the validity and reliability of the findings.

Data Coding, Tabulation, and Analysis

Coding of the survey's closed-ended questions was accomplished by the interviewers as they conducted the interviews. Coding of the survey's open-ended questions was then undertaken in three stages.

First, a coding team comprised of supervisors and specially trained supervisory and interviewing staff used previously developed codebooks to code the open-ended questions, setting aside any responses that failed to conform to the coding schemes for

the possible addition of new codes. (All but one of the open-ended questions in the survey was asked in 2001; the other question was taken from another storm water pollution survey, so the codebook from that survey was used initially.) 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.

Once all of the interviews that failed to conform to the initially established coding scheme had been identified, the Supervisor and the coding team reviewed the uncoded answers and added new codes as appropriate. This approach ensures that there is a minimal percentage of "other" responses to the open-ended questions. Finally, as a check on the integrity of the coding as a whole, the Project Manager reviewed a ten percent sample of all of the coded interviews.

The resulting data were then key-entered into the data analytic software SPSS for Windows using SPSS Data Entry and computer-checked for accuracy, adherence to the pre-established coding scheme, and internal logic. In addition, preliminary tabulations were reviewed manually to check for errors in areas that could not be programmed. Finally, tabulations, means, and other analyses were prepared using SPSS for Windows.

III. FINDINGS

Findings from the survey are presented here in the same order in which the questions were posed to respondents. Readers who are interested in the precise phrasing of the inquiries are invited to consult the copy of the survey instrument that can be found in Appendix A.

IMPORTANCE OF VARIOUS ISSUES

Figure 1 portrays the mean importance of various issues the City of San Diego is dealing with on a scale of one to four where one equals not at all important and four

equals very important. As this display indicates, all of the issues were viewed as being more than somewhat important (mean value of 3.00) in both years, although littering was noticeably less likely than the other issues to be viewed as being important. Pollution of the ocean, bays, and beaches was most likely to be perceived as being important in 2001, while crime was most likely to be viewed as being important in 2002. The differences are small and statistically insignificant, however.

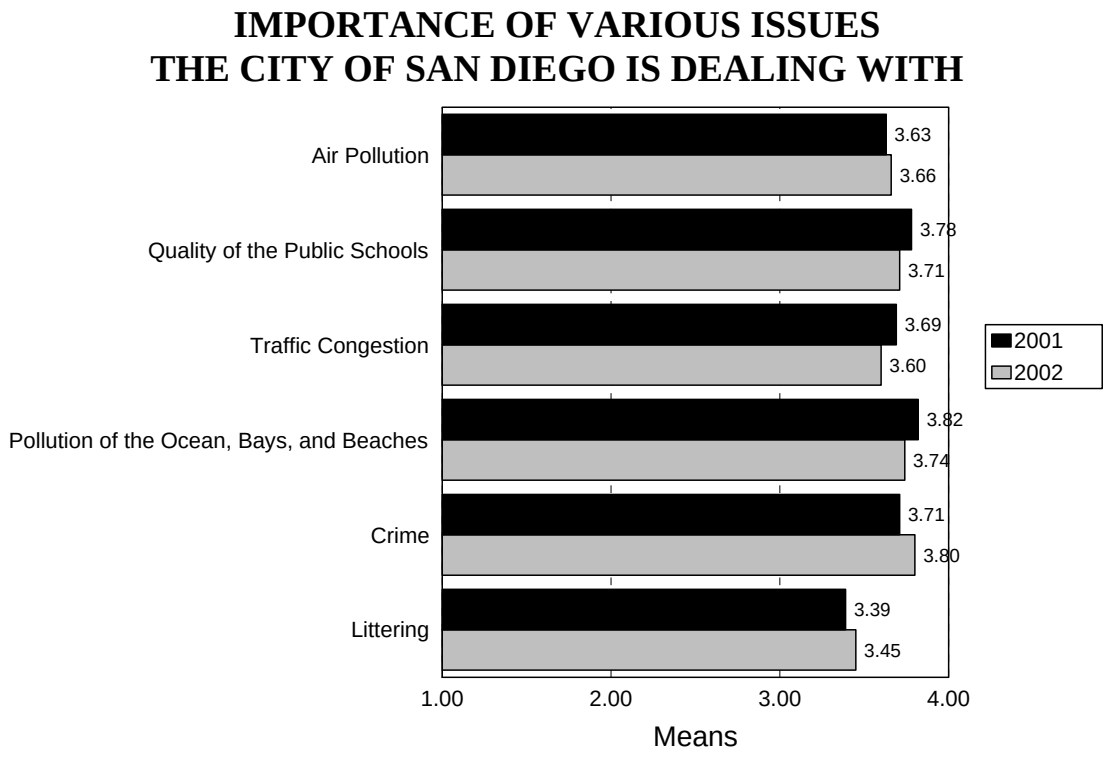


Figure 1

POSSESSION OF SELECTED SOURCES OF POLLUTION

Figure 2 displays the extent to which respondents said they have or own various potential sources of storm water pollution. As this graphic demonstrates, the only source a majority of respondents said they have or own (89 percent in each year) is a car, truck, or van. Second most likely to be in respondents' possession (45 percent in 2001 and 38 percent in 2002) was a garden; third most likely (28 and 25 percent) was a dog.

EXTENT TO WHICH RESPONDENTS HAVE OR OWN SELECTED SOURCES OF POLLUTION

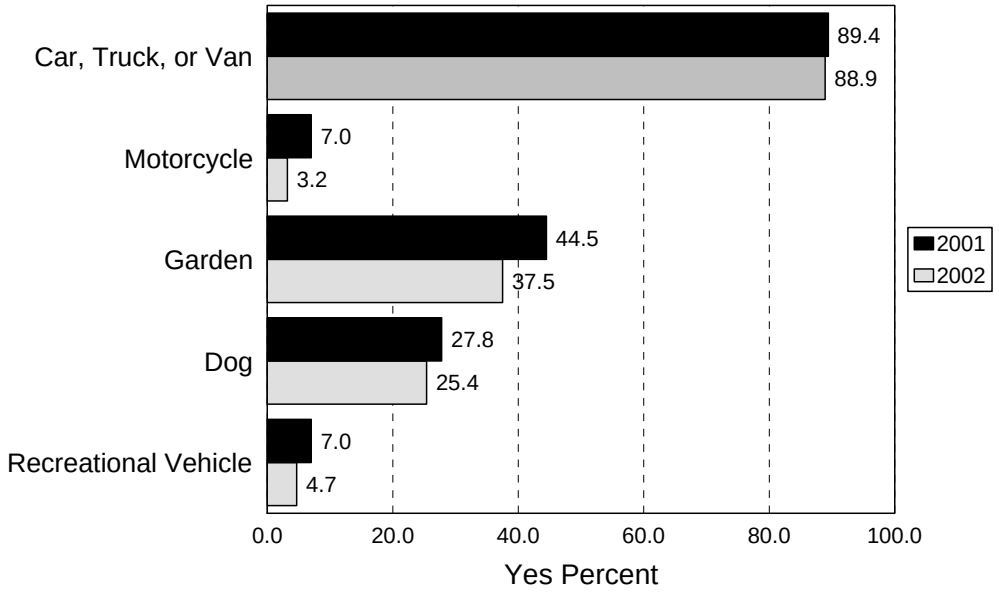


Figure 2

VEHICLE ISSUES

Washing

As shown in Figure 3, somewhat over two-fifths of those with vehicles (44 percent in each year) said they wash them at home at least occasionally. Of these, as Table 1 illustrates, more than three-quarters (78 percent) in 2001 said they let the water run onto pavement such as a driveway or street. The comparable figure for 2002 is three-fifths (60 percent), which represents a statistically significant decrease from 2001.

EXTENT TO WHICH THOSE WITH VEHICLES WASH THEM AT HOME

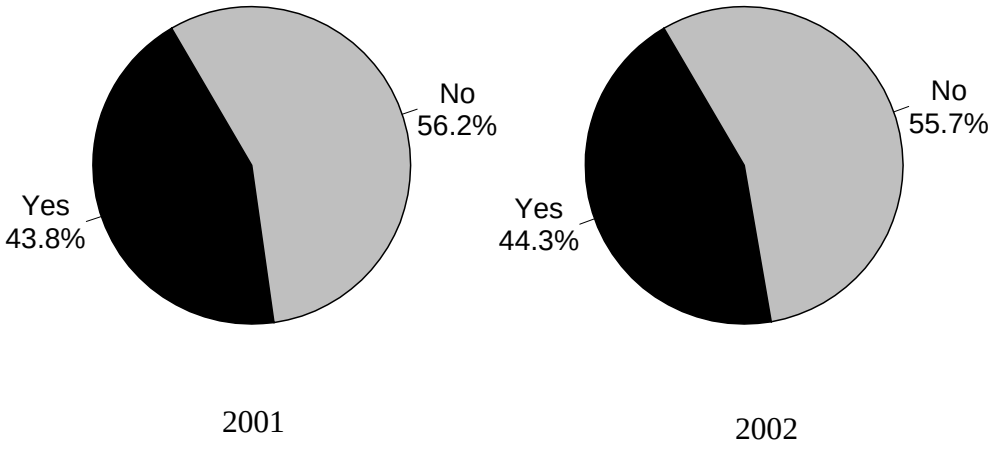


Figure 3

Table 1

WHERE WATER FROM VEHICLE WASHING RUNS

	2001	2002
	Percent	
Onto Pavement	78.2	60.0
Onto Dirt	8.0	12.5
Onto Grass	8.0	17.5
Other	5.7	9.4
Don't Know	-	.6

Oil Changing

Figure 4 indicates that about one in five of those with vehicles in 2001 (21 percent) and 15 percent in 2002 said they change the oil in these vehicles at least sometimes. Of these, as shown in Table 2, by far the majority (82 percent in 2001 and 93 percent in 2002) said they take the used oil to a recycling center. In addition, seven percent in 2001 and 4 percent in 2002 said they take it to a hazardous waste event. When these figures are summed, they total almost nine in ten (89 percent) in 2001 and more than nine in ten (96 percent) in 2002. Only one percent in 2001 said they pour it down the storm drain; no one said this in 2002.

EXTENT TO WHICH THOSE WITH VEHICLES CHANGE THE OIL IN THOSE VEHICLES

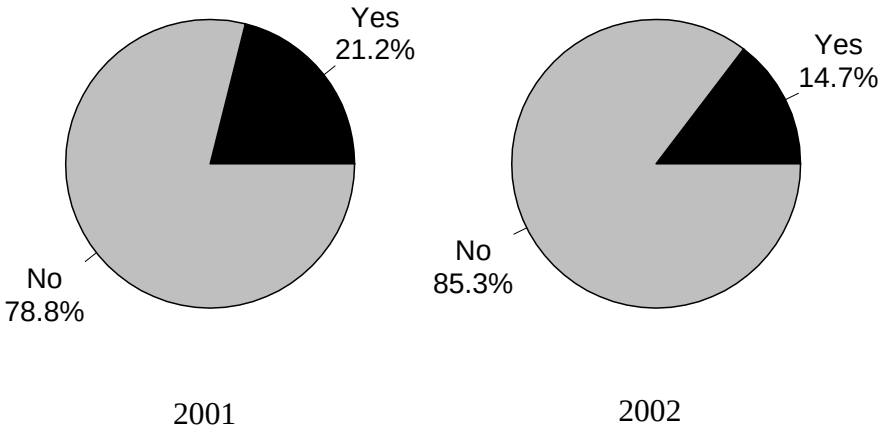


Figure 4

Table 2

WHAT IS DONE WITH THE USED OIL

	2001	2002
	Percent	
Pour Down Inside Drain	2.4	-
Pour Down Storm Drain	1.2	-
Throw in Trash/Garbage	4.8	1.9
Keep Around the House	2.4	-
Take to Hazardous Waste Event/Roundup	7.1	3.8
Take to Recycling Center	82.1	92.5
Other	-	1.9

Radiator Draining

As illustrated in Figure 5, less than one in ten of those who own vehicles (8 percent in 2001 and 4 percent in 2002) said they drain the vehicles' radiators at least occasionally. Of these, as Table 3 demonstrates, the majority (61 percent in 2001 and 53 percent in 2002) said they take the radiator fluid to a recycling center. In addition, more than one in ten (12 and 13 percent) said they take it to a hazardous waste event. These two figures total close to three-quarters (73 percent) in 2001 and two-thirds (67 percent) in 2002. Only three percent in 2001 and seven percent in 2002 said they pour the fluid down the storm drain, while another three percent in 2001 said they pour it into the ground.

EXTENT TO WHICH THOSE WITH VEHICLES DRAIN THE VEHICLES' RADIATORS

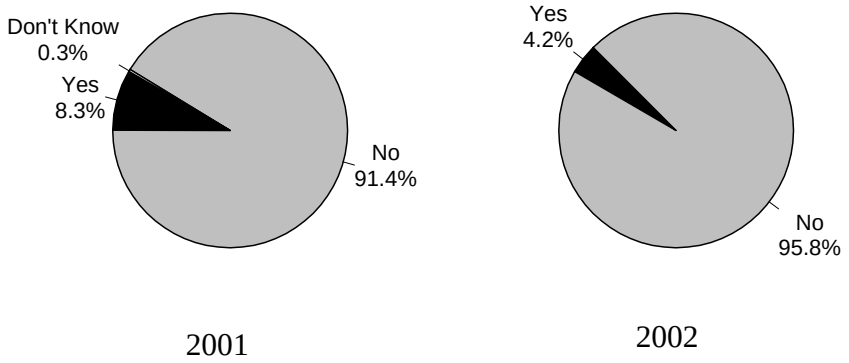


Figure 5

Table 3

WHAT IS DONE WITH THE RADIATOR FLUID

	2001	2002
	Percent	
Pour Down Inside Drain	6.1	13.3
Pour Down Storm Drain	3.0	6.7
Pour Onto Ground	3.0	-
Throw in Trash/Garbage	6.1	13.3
Keep Around the House	9.1	-
Take to Hazardous Waste Event/Roundup	12.1	13.3
Take to Recycling Center	60.6	53.3

GARDEN ISSUES

Green Waste Disposal

Table 4 illustrates that the largest groups of those with gardens (38 percent in 2001 and 32 percent in 2002) said they throw their grass clippings and other green waste into the trash or garbage. Other somewhat common practices were recycling them (0 and 24 percent) and composting them or using them as mulch (13 and 20 percent); having a gardener or lawn service take them away was relatively prominent in 2001 (13 percent) but not in 2002. The change in recycling is statistically significant.[1]

[1] Recycling was not listed on the questionnaire as an option in 2001. It is also doubtful that much of it was buried in the "other" category that year, as the total of all "other" responses is only 15 percent.

Table 4

HOW LAWN CLIPPINGS AND OTHER GREEN WASTE ARE DISPOSED OF

	2001	2002
	Percent	
Throw in Trash/Garbage	38.6	31.6
Taken Away by Gardener/Lawn Service	13.2	2.0
Put in Compost Pile/Use as Mulch	13.2	19.7
Leave on Lawn	3.6	2.0
Take to Compost Facility	2.5	2.0
Take to Landfill/Transfer Station	4.1	3.3
Put in Curbside Recycling/Green Waste Container	-	24.3
Other	14.7	6.6
Don't Know What Gardener Does	10.2	8.6

As shown in Table 5, the majority of respondents (68 percent in 2001 and 55 percent in 2002) said they sweep up lawn clippings that are on walkways, patios, and driveways and put them into the trash. The only other noticeable response was recycling them (13 percent).[2] Only one percent in 2001 and three percent in 2002 said they sweep or hose them into the street or gutter.

Table 5

HOW CLIPPINGS ON WALKWAYS, PATIOS, AND DRIVEWAYS ARE CLEANED UP

	2001	2002
	Percent	
Sweep up and Put Into Trash	68.0	54.6
Blow Into Yard (Leaf Blower)	4.6	4.6
Sweep Into Street/Gutter	.5	1.3
Hose Into Street/Gutter	.5	1.3
Put in Curbside Recycling/Green Waste Container	-	12.5
Not Applicable - No Lawn	.5	-
Not Applicable - No Clippings	1.5	1.3
Other	13.7	17.1
Don't Know What Gardener Does	10.7	7.2

.

[2] Recycling was also not included as an option here in 2001. The increase from 0 to 13 percent could or could not be statistically significant, depending on the content of the "other" category.

Watering

Figure 6 illustrates that close to half of respondents (46 percent in 2001 and 48 percent in 2002) said water from their gardens never runs into the gutter or street and another more than a quarter (28 percent in 2001 and 27 percent in 2002) said it rarely does. These figures sum to around three-quarters (74 and 75 percent). More than one in five, on the other hand (23 and 24 percent), admitted that the water always, usually, or sometimes runs into the gutter or street.

FREQUENCY WITH WHICH WATER FROM GARDENS RUNS INTO THE GUTTER OR STREET

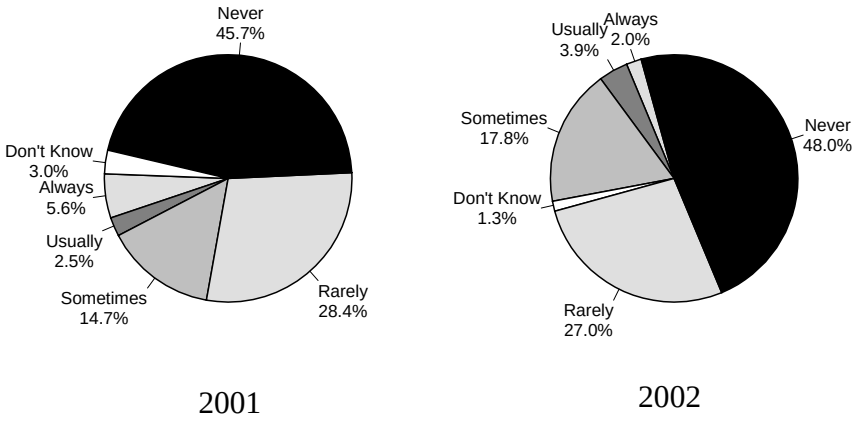


Figure 6

Use of Pesticides, Herbicides, or Fungicides

Figure 7 indicates that more than a quarter of respondents (29 percent in 2001 and 30 percent in 2002) said they use pesticides, herbicides, or fungicides in their gardens. Of

these, as shown in Figure 8, more than half (57 and 56 percent) said these chemicals never wash off into the street. In addition, another close to a third (31 percent) in 2001 and close to two-fifths (38 percent) in 2002 said they rarely do so. When these figures are summed, they total around nine in ten (88 and 93 percent). Slightly more than one in ten (12 percent) in 2001 and seven percent in 2002, on the other hand, admitted that they always, usually, or sometimes do.

EXTENT TO WHICH THOSE WITH GARDENS USE PESTICIDES, HERBICIDES, OR FUNGICIDES

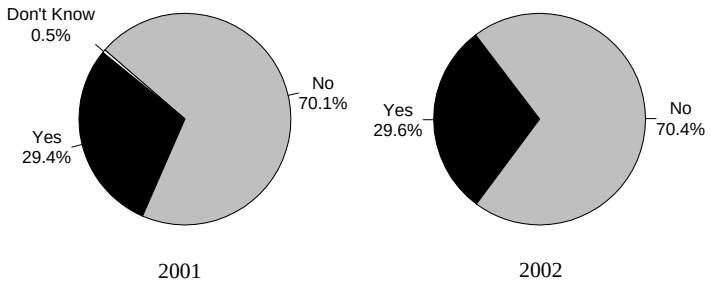


Figure 7

FREQUENCY WITH WHICH PESTICIDES, HERBICIDES, OR FUNGICIDES WASH OFF INTO THE STREET

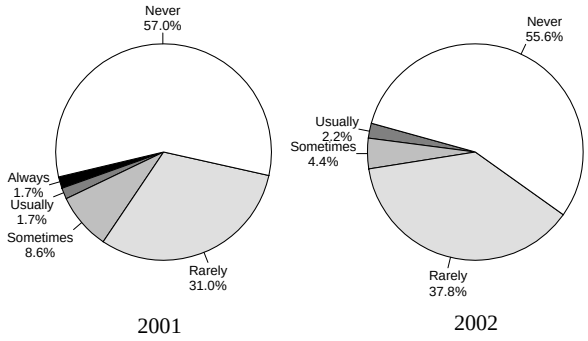


Figure 8

Table 6 portrays the manner in which respondents who use pesticides, herbicides, and fungicides said they dispose of leftover chemicals. The most prevalent answer was not having any left over (38 percent in 2001 and 47 percent in 2002). Taking them to a hazardous waste collection was secondary in 2002 at 22 percent; this answer was a minor choice in 2001. Putting them in the trash was prominent in 2001 (38 percent) but not in 2002. Finally, two percent in 2001 but no one in 2002 said they put them down an outdoor drain.

Table 6

HOW LEFTOVER PESTICIDES, HERBICIDES, OR FUNGICIDES ARE DISPOSED OF

	2001	2002
	Percent	
Put in Trash/Garbage	37.9	8.9
Put Down Indoor Drain	1.7	-
Put Down Outdoor Drain	1.7	-
Take to Hazardous Waste Collection	5.2	22.2

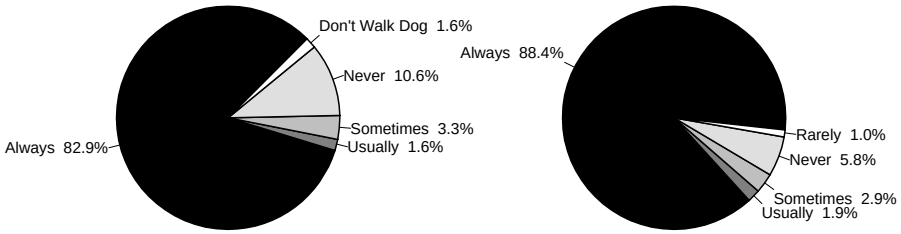
Take to Landfill or Dump	5.2	-
Not Applicable/Don't Have Leftovers	37.9	46.7
Other	8.6	11.1
Don't Know	1.7	11.1

DOG ISSUES

Dog Walking

As shown in Figure 9, by far the majority of dog owners (83 percent in 2001 and 88 percent in 2002) said they always pick up the droppings when they walk their dogs. Eleven percent in 2001 and six percent in 2002, however, said they never do, and five percent in both years said they only usually or sometimes do.

EXTENT TO WHICH DOG OWNERS PICK UP THE DROPPINGS WHEN THEY WALK THE DOG



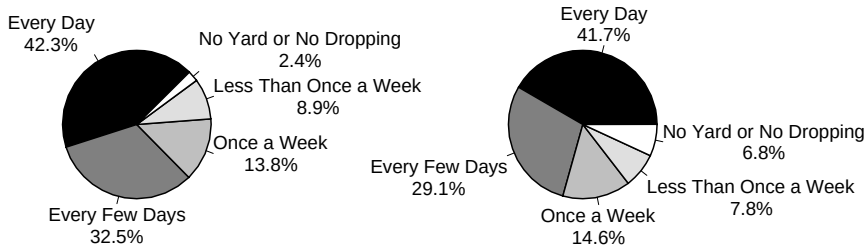
2001 2002

Figure 9

Yard Cleaning

Figure 10 illustrates that around two-fifths of those with dogs (42 percent in each year) said they clean up the dog droppings in their yards every day. In addition, between over a quarter and a third (33 and 29 percent) said they clean up every few days. Close to one in ten, on the other hand (9 and 8 percent), said they clean up less than once a week, while 14 and 15 percent said they clean up once a week.

FREQUENCY WITH WHICH DOG OWNERS CLEAN UP DOG DROPPINGS IN THEIR YARDS



2001 2002

Figure 10

RECREATIONAL VEHICLE ISSUES

Use of Formal Waste Stations

Figure 11 demonstrates that two-thirds of those with recreational vehicles in 2001 (68 percent) and almost all of those with recreational vehicles in 2002 (95 percent) said they always empty their RV waste at formal waste stations. In 2001, about a quarter said they never do; this figure decreased to five percent in 2002. Because of the small numbers involved, however, the difference is not statistically significant.

FREQUENCY WITH WHICH RECREATIONAL VEHICLE OWNERS EMPTY THEIR WASTE AT FORMAL WASTE STATIONS

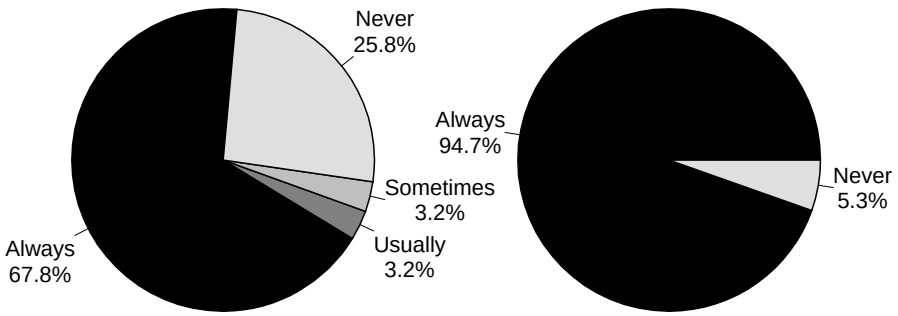


Figure 11

Use of Hoses

Among those who use a waste station, Figure 12 shows that strong majorities (87 and 78 percent) said they use the hose. More than one in ten (13 percent) in 2001 and more than one in five (22 percent) in 2002, however, said they do not.

EXTENT TO WHICH THOSE WHO USE WASTE STATIONS USE THE HOSE

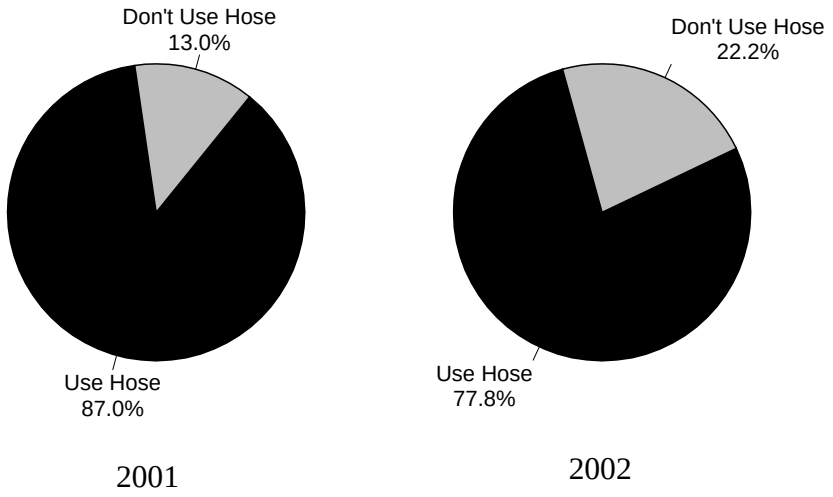


Figure 12

Figure 13 indicates that among hose users, around eight in ten (80 percent in 2001 and 86 percent in 2002) put the hose into the drain. Fifteen percent in 2001 and seven percent in 2002, however, put it near the drain.

WHERE THOSE WHO USE THE HOSE PUT THE HOSE

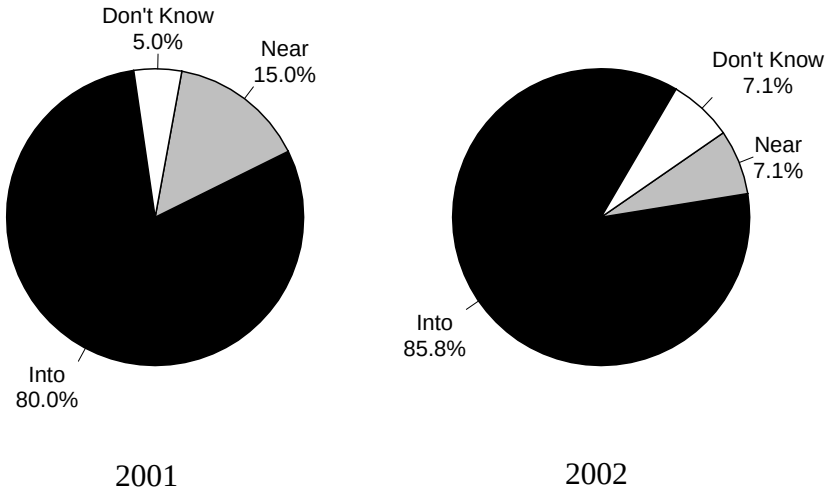


Figure 13

As illustrated in Figure 14, more than two-thirds of hose users in 2001 (70 percent) and the majority in 2002 (56 percent) said they disconnect the hose after rinsing. Close to one in five in 2001 (17 percent) and a third in 2002 (33 percent), however, said they disconnect before rinsing.

WHETHER THE HOSE IS DISCONNECTED BEFORE OR AFTER RINSING

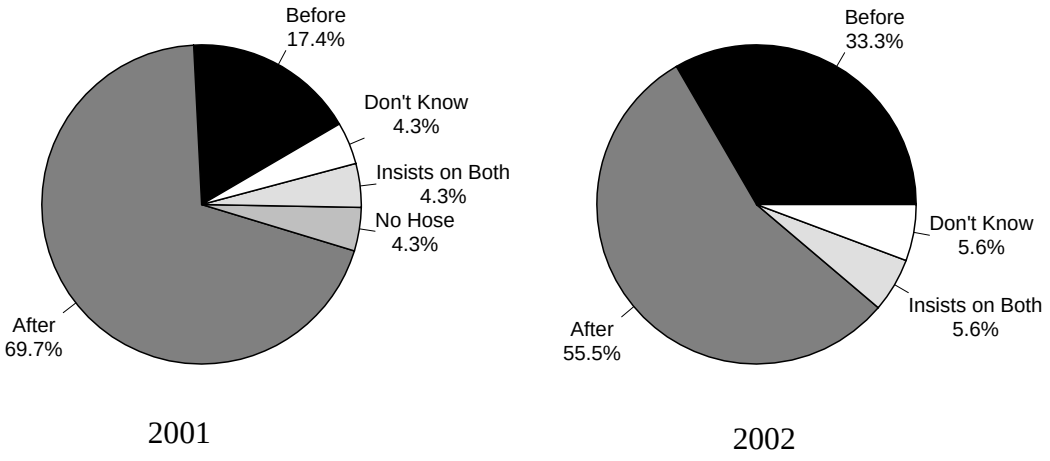


Figure 14

Vehicle Washing at Waste Stations

Figure 15 demonstrates that the majority of waste station users (57 percent in 2001 and 50 percent in 2002) said they wash the residue off their vehicles, although between about a quarter and over two-fifths (26 and 44 percent) said they do not. Thirteen percent in 2001 volunteered that there is no residue; this was not offered as an answer in 2002.

WHETHER THE RESIDUE IS WASHED OFF THE VEHICLE

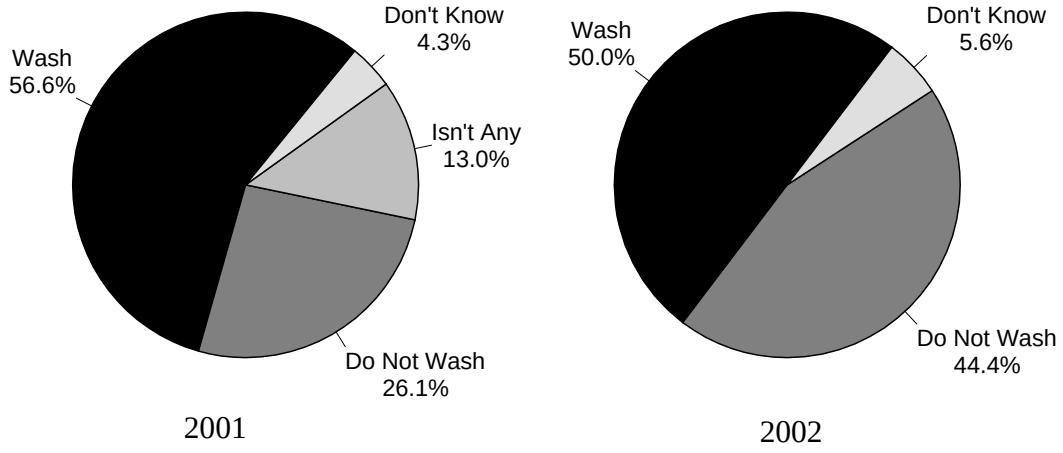


Figure 15

Observation of Liquid Flowing Away

As shown in Figure 16, by far the majority of those who use waste stations (83 percent in 2001 and 94 percent in 2002) said they have not observed liquid flowing away from the stations they use. Only somewhat more than one in ten (13 percent) in 2001 and six percent in 2002 said they have.

EXTENT TO WHICH THOSE WHO USE WASTE STATIONS HAVE OBSERVED LIQUID FLOWING AWAY FROM THE STATION

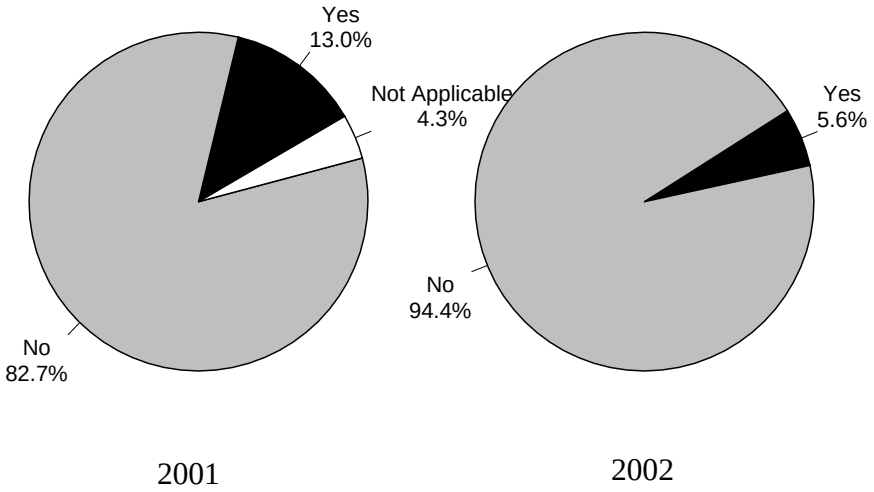


Figure 16

COOKING ISSUES

Table 7 illustrates what respondents said they do when they have a pot or pan with grease in it. The largest groups (43 percent in 2001 and 48 percent in 2002) said they pour the grease into a container and throw it into the garbage, and another around a quarter (26 and 23 percent) said they wipe the grease into the garbage. Close to one in five, however (19 percent each year) said they pour the grease down the drain, most likely (16 percent each year) with hot water.

Table 7

WHAT IS DONE WITH THE GREASE IN POTS AND PANS

	2001	2002
	Percent	
Wipe the Grease out of the Pan Into the Garbage	26.0	23.2
Wash the Grease Down the Drain With Hot Water	15.6	16.3
Wash the Grease Down the Drain With Cold Water	2.9	2.2
Pour the Grease Into a Container and Throw the Container in the Garbage	43.3	47.7
Put the Pot or Pan in the Dishwasher With the Grease in It	.5	.7
Never Cooks	11.7	4.4
Never Cooks With Grease	-	.5
Other	-	4.7
Don't Know	-	.2

PAINTING ISSUES

As shown in Figure 17, about two-fifths of respondents (41 percent in 2001 and 40 percent in 2002) said they paint around the house either inside or outside at least occasionally. Of these, as Table 8 indicates, the majority (59 and 52 percent) said they wash out their brushes, rollers, and pans in an inside sink. Around a quarter, however

(29 and 25 percent), use an outside sink, the yard, or a driveway, gutter, or street. The last accounts for seven and four percent of these respondents, respectively.

EXTENT TO WHICH RESPONDENTS PAINT AROUND THE HOUSE

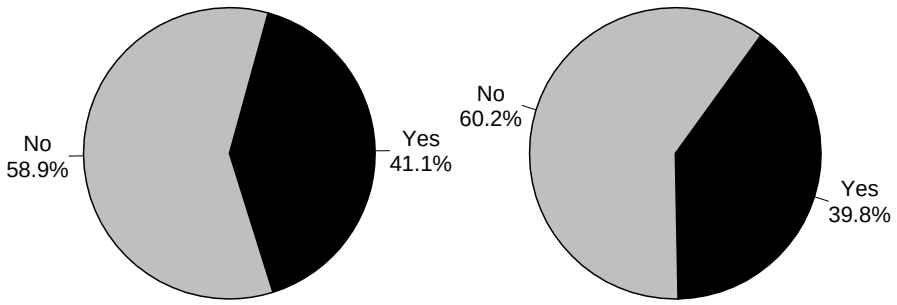


Figure 17

Table 8

WHERE PAINT BRUSHES, ROLLERS, AND PANS ARE CLEANED OUT

	2001	2002
	Percent	
Inside Sink	58.8	51.6
Outside Sink	12.6	5.0
Grass/Dirt/Yard	9.3	16.1
Driveway/Gutter/Street	7.1	3.7
Other	12.1	21.1
Don't Know	-	2.5

Methods of disposing of leftover paint are portrayed in Table 9. The most frequent answer in 2001 and the second most frequent answer in 2002 (28 and 15 percent, respectively) was that people who paint don't have leftovers. Second most likely to be mentioned in 2001 and most likely to be offered in 2002 (23 and 16 percent) was using the trash or garbage. In 2001, putting the leftovers in the gutter or storm drain was in third place (19 percent); no one said this in 2002. In fourth place in 2002 was taking the paint to a hazardous waste collection (12 percent). The decrease in storm drain disposal is statistically significant.

Table 9

HOW EXTRA PAINT IS DISPOSED OF

	2001	2002
	Percent	
Put in Trash/Garbage	22.5	16.1
Put Down Indoor Drain	1.6	-
Put Down Outdoor Drain	1.1	1.2
Put Into Gutter/Storm Drain	19.2	-
Take to Hazardous Waste Collection	7.1	11.8
Take to Landfill or Dump	1.6	3.7
Bury It	1.1	-
Not Applicable/Don't Have Leftovers	28.0	14.9
Other	17.6	29.8
Don't Know	-	.6

SEWER ISSUES

Blockages

As illustrated in Figure 18, less than one in five respondents (16 percent in 2001 and 13 percent in 2002) said they have ever experienced a blocked sewer line where they live[3]. Of these, as Table 10 indicates, about a third (34 and 33 percent) said the blockage was caused by roots. Other fairly common occurrences were a break in the main line (13 and 11 percent) and a break in the connecting line (11 and 7 percent). Finally, more than a quarter (27 and 30 percent) said they didn't know.

[3] Although this question was supposed to have been asked of all respondents, it wound up being asked only of those who had experienced a blockage. In next year's survey, we will ensure that the erroneous skip pattern is corrected.

EXTENT TO WHICH RESPONDENTS HAVE EXPERIENCED A BLOCKED SEWER WHERE THEY LIVE

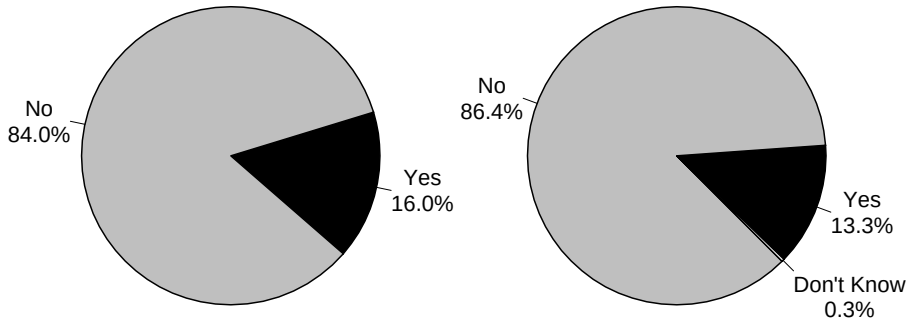


Figure 18

Table 10

CAUSES OF THE BLOCKAGES

	2001	2002
	Percent	
Grease	7.0	5.6
Roots	33.8	33.3
Break in Connecting Line	11.3	7.4
Break in Main Line	12.7	11.1
Not Applicable – Apartment/Condo/Rental	7.0	11.1
Grease and Roots	1.4	-
Hair	-	1.9
Don't Know	26.8	29.6

Line Cleaning

Table 11 demonstrates that the largest groups of respondents (28 and 19 percent) said they never clean out the sewer lines connecting their homes to the main sewer line. Somewhat over a quarter (27 percent) in 2001 and more than one in ten in 2002 (13 percent) said they do so annually, while close to one in ten (9 percent) in 2001 and close to one in five (19 percent) in 2002 said they do so once every two to three years. Frequencies of less than once every three years represent 14 and 16 percent, respectively. Finally, it should be noted that close to a quarter (23 and 24 percent) said this is not applicable because they live in apartments, condominiums, or rentals.

Table 11

FREQUENCY WITH WHICH RESPONDENTS CLEAN OUT THE SEWER LINES CONNECTING THEIR HOMES TO THE MAIN SEWER LINE

	2001	2002
	Percent	
More Often Than Once a Year	-	3.7
Once a Year	26.8	13.0
Once Every Two-Three Years	8.5	18.5
Once Every Four-Five Years	5.6	11.1
Once Every Six-Ten Years	4.2	1.9
Less Than Once Every Ten Years	4.2	1.9
Never	28.2	18.5
Not Applicable – Apartment/Condo/Rental	22.5	24.1
Don't Know	-	7.4

LITTER ISSUES

Figure 19 indicates that between over three-quarters and about four-fifths of respondents (77 percent in 2001 and 81 percent in 2002) said they never litter. In addition, close to one in five (17 and 16 percent) said they rarely do. Six and four percent respectively, on the other hand, admitted they occasionally or often do so.

FREQUENCY WITH WHICH RESPONDENTS LITTER

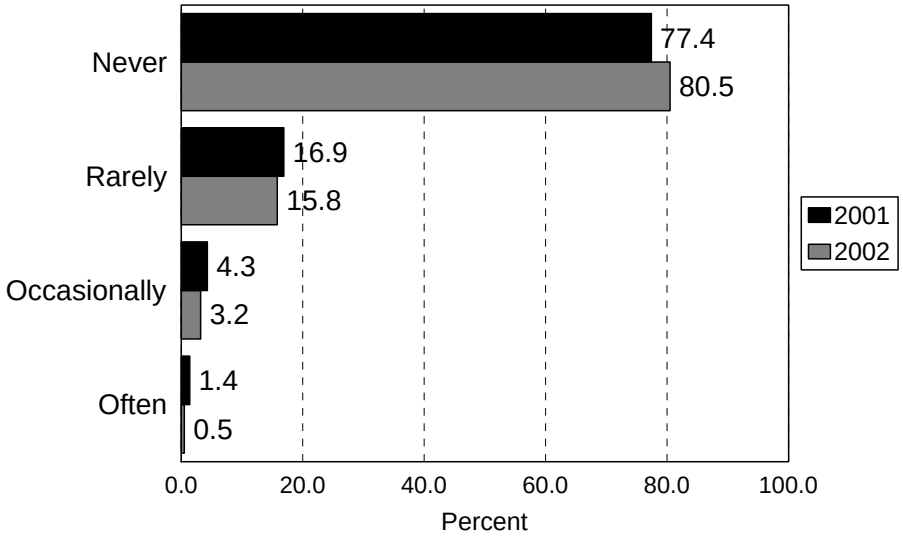


Figure 19

As demonstrated in Figure 20, more than nine in ten respondents (96 percent in 2001 and 98 percent in 2002) said they never empty trash or car ashtrays at freeway on- or off-ramps. Only a very few (4 and 2 percent) admitted they rarely, occasionally, or often do so.

FREQUENCY WITH WHICH RESPONDENTS EMPTY TRASH OR CAR ASHTRAYS AT FREEWAY ON- OR OFF-RAMPS

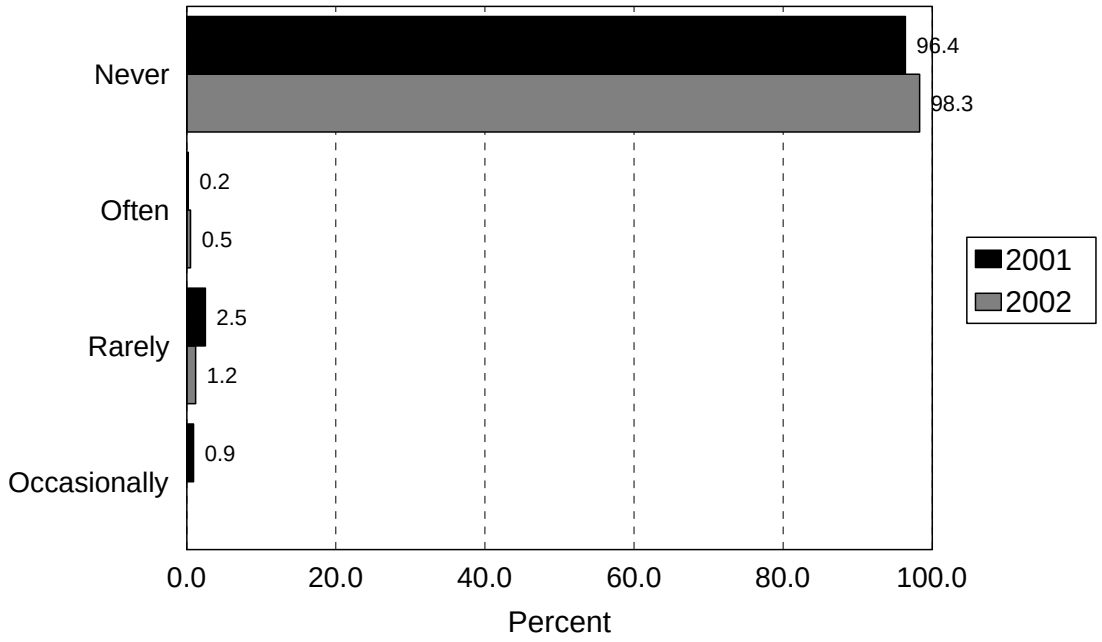


Figure 20

Figure 21 indicates that the largest group of respondents (44 percent) said there is not very much litter in their neighborhoods. In addition, close to one in five (18 percent) said there is none. When these figures are summed, they total the majority (62 percent). This question was not asked in 2001.

AMOUNT OF LITTER IN RESPONDENTS' NEIGHBORHOODS

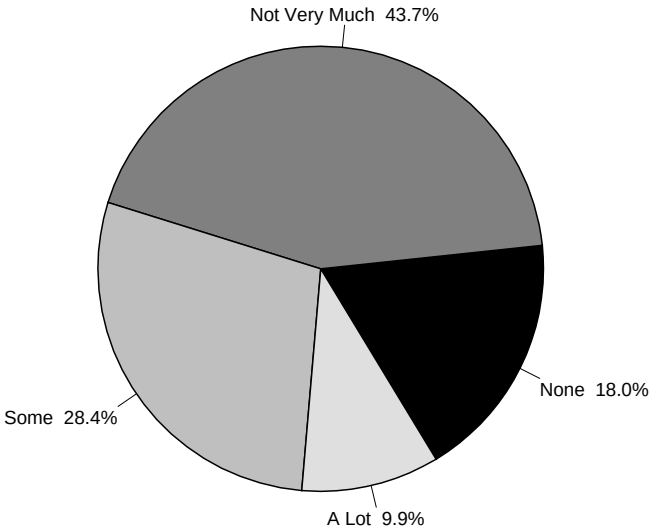


Figure 21

As shown in Figure 22, the largest group of respondents (44 percent) said they would be somewhat likely to pick up litter they see in their neighborhoods. In addition, close to two-fifths (38 percent) said they would be very likely to do so. These figures total by far the majority (82 percent). This question was also not asked in 2001.

LIKELINESS OF RESPONDENTS PICKING UP LITTER IN THEIR NEIGHBORHOODS

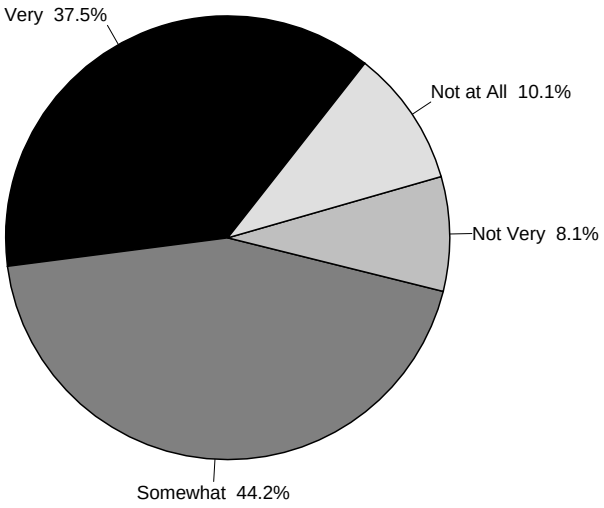


Figure 22

BEACH ISSUES

Frequency of Visitation

Table 12 illustrates that about half of respondents (50 and 48 percent) said they visit a San Diego beach at least once a month. Close to three-quarters (71 and 72 percent) said they visit at least once a year.

Table 12

FREQUENCY WITH WHICH RESPONDENTS VISIT SAN DIEGO BEACHES

	2001	2002
	Percent	
Every Day	5.2	2.2
Every Few Days	9.0	7.2
Once a Week	12.6	12.1
Once Every Two to Three Weeks	9.9	12.6
Once a Month	13.1	13.6
Once Every Two to Three Months	9.0	8.1
Every Four to Six Months	4.7	8.1
Every Seven to Twelve Months	7.0	8.4
Less Than Once a Year	16.5	11.9
Never	12.9	15.8

Bird Feeding

Among those who visit a beach at least once a year, as Figure 23 shows, by far the majority (85 in each year percent) said they do not feed the birds. Fifteen percent, however, said they do.

EXTENT TO WHICH BEACH VISITORS FEED THE BIRDS

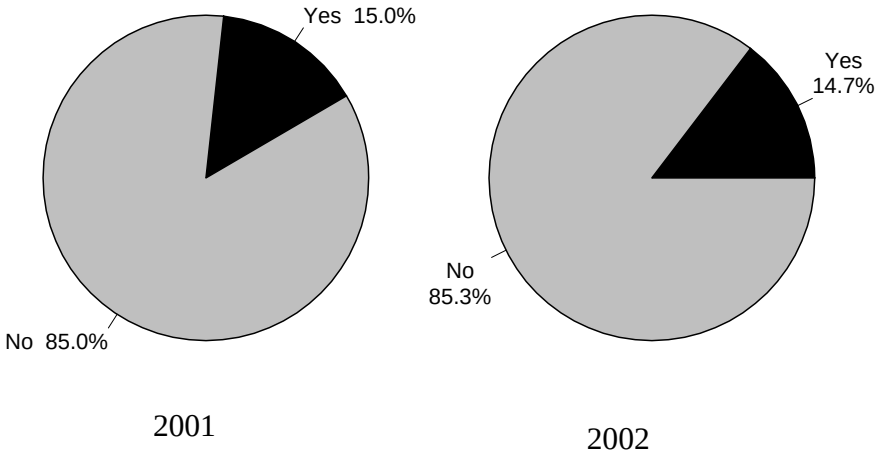


Figure 23

Using the Water Rather Than Finding a Restroom

Figure 24 indicates that around three-quarters of annual or more frequent beach visitors (77 percent in 2001 and 75 percent in 2002) said they and others with them never use the water rather than finding a restroom. Nine and seven percent, respectively, said they always or usually do so, however, and 14 and 17 percent said they sometimes or rarely do. These last four figures total about a quarter (23 and 25 percent).

EXTENT TO WHICH BEACH VISITORS USE THE WATER RATHER THAN FINDING A RESTROOM

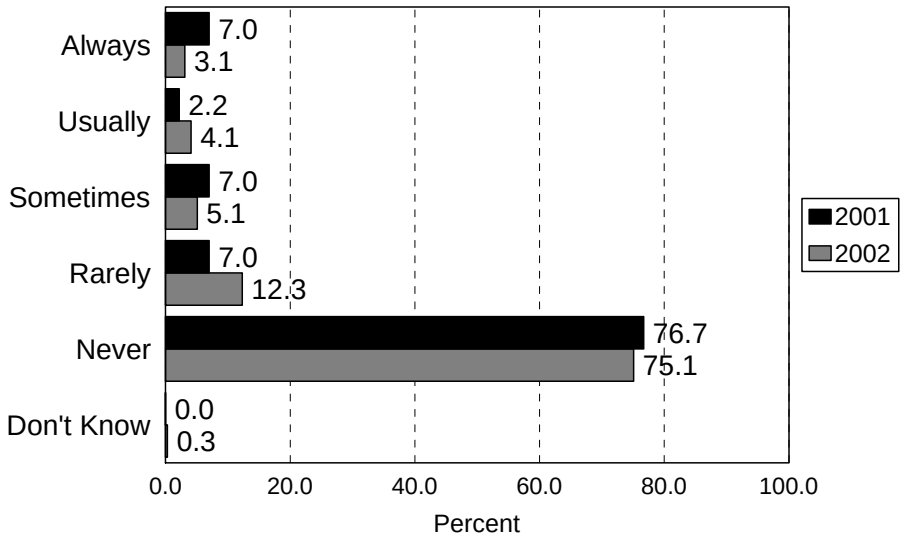


Figure 24

Beach Closures

As shown in Figure 25, the majority of respondents (55 and 60 percent) said they believe that when San Diego beaches are closed due to contamination, the contamination is usually due to sewage spills. About one in five (20 and 17 percent) said it is usually due to runoff from homes and businesses.

USUAL REASON WHY SAN DIEGO BEACHES ARE CLOSED DUE TO CONTAMINATION

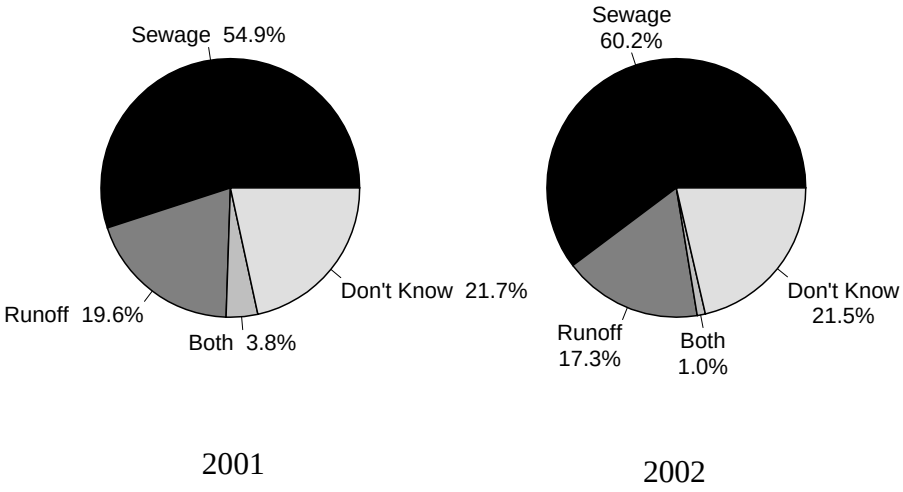


Figure 25

WATER BODY ISSUES

Table 13 displays the water bodies respondents named as being part of the communities where they live. Most likely to be mentioned was Mission Bay (35 percent). This was followed by San Diego Bay (18 percent), San Diego River (12 percent) and the ocean (12 percent). This question was not asked in 2001.

Table 13

WATER BODIES THAT ARE PART OF THE COMMUNITY WHERE RESPONDENT LIVES

	Frequency	Percent
Mission Bay	142	35.1
Penasquitos	9	2.2
San Diego Bay	74	18.3
San Diego River	49	12.1
San Dieguito River	3	.7
Tijuana River	9	2.2
The Pacific Ocean/The Ocean	50	12.3
Coronado Bay/Coronado Beach	3	.7
Lake Miramar	24	5.9
Lake Hodges	8	2.0
Lake Murray	9	2.2
La Jolla Beach	4	1.0
Lake Poway	5	1.2
Imperial Beach	2	.5
San Diego Harbor	3	.7
Ocean Beach/Pacific Beach	21	5.2
Pensaquitos	2	.5
Lake Cuyamaka	1	.2
Chollas Lake	5	1.2
None	27	6.7
Other	31	7.7
Don't Know	58	14.3

Water bodies respondents said they visit or use for recreational purposes are portrayed in Table 14. Here again, Mission Bay was the most prominent answer (33 percent). The ocean was second (16 percent) while San Diego Bay was third (13 percent). This question was also not asked in 2001.

Table 14

WATER BODIES RESPONDENT VISIT OR USE FOR RECREATIONAL PURPOSES

	Frequency	Percent
Mission Bay	136	33.6
Penasquitos	8	2.0
San Diego Bay	51	12.6
San Diego River	17	4.2
San Dieguito River	1	.2
Tijuana River	4	1.0
The Pacific Ocean/The Ocean	66	16.3
Coronado Bay/Coronado Beach	24	5.9
Lake Miramar	13	3.2
Lake Hodges	2	.5
Lake Murray	3	.7
La Jolla Beach	24	5.9
Dog Beach	2	.5
Lake Poway	3	.7
Imperial Beach	3	.7
Colorado River	3	.7
San Diego Harbor	1	.2
Ocean Beach/Pacific Beach	36	8.9
Del Mar	2	.5
Lake Cuyamaka	3	.7
Chollas Lake	4	1.0
None	62	15.3
Other	57	14.1
Don't Know	26	6.4

Figure 26 depicts the healthiness of the water body or bodies into which storm water from respondents' Zip Codes drains. This question was asked to reflect respondents' stated Zip Codes (please see Appendix A for details). As the figure indicates, the most prevalent answer is that the water body or bodies are somewhat healthy (30 percent). In addition, one in ten (10 percent) said the water body or bodies are very healthy. These figures sum to less than half (40 percent). Answers of not very and not at all healthy total more than a third (35 percent); the second most likely single answer was "don't know" (25 percent). This question was also not asked in 2001.

HEALTHINESS OF BAYS AND RIVERS IN RESPONDENTS' AREAS

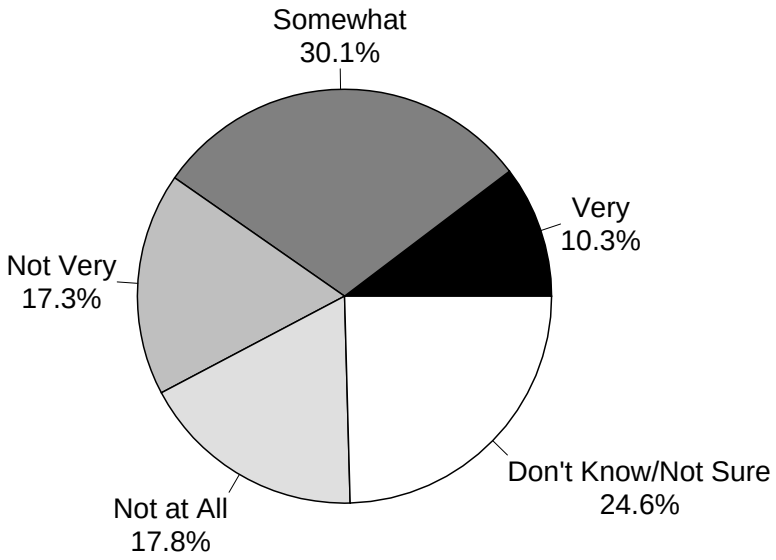


Figure 26

WATERSHED ISSUES

As shown in Figure 27, about two-thirds of respondents (68 percent) said they are not familiar with the concept of a watershed. Among those who said they are, as illustrated in Table 15, about one in five (21 percent) were able to define the term correctly. Neither of these questions was asked in 2001.

EXTENT TO WHICH RESPONDENTS ARE FAMILIAR WITH THE CONCEPT OF A WATERSHED

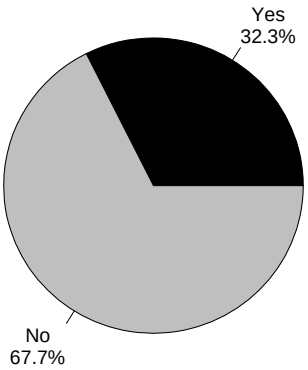


Figure 27

Table 15

HOW FAMILIAR RESPONDENTS WOULD DEFINE A WATERSHED

	Frequency	Percent
Right Definition: Has to Do With the Land	28	21.4
Sort of Knows Definition	31	23.7
Wrong Definition: Erosion Issues	35	26.7
Wrong Definition: Groundwater Issues	16	12.2
Wrong Definition: Water Filtering Issues	4	3.1
Other	5	3.8
Don't Know	12	9.2

Figure 28 shows that the majority of respondents (54 percent) said they do not live in a watershed. In addition, close to one in five (18 percent) said they don't know. Only somewhat over a quarter (28 percent) answered in the affirmative. This question was also not asked in 2001.

EXTENT TO WHICH RESPONDENTS LIVE IN A WATERSHED

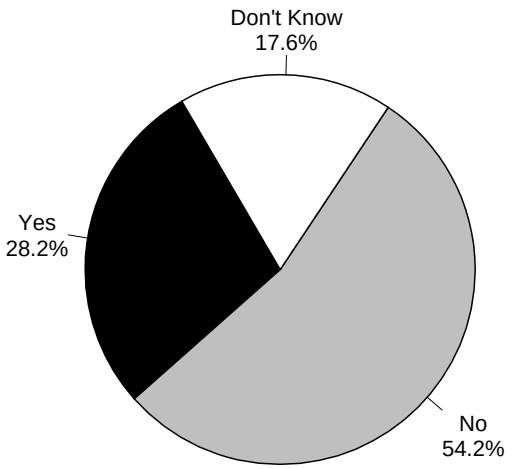


Figure 28

STORM DRAINS

Figure 29 demonstrates that half of respondents (50 percent) in 2001 and over two-fifths of respondents (43 percent) in 2002 said they had heard something about San Diego's storm drain system in the six months preceding the survey. Understandings of where things that enter the storm drains go are portrayed in Table 16. As this table indicates,

the largest groups of respondents (42 and 40 percent) said they know that things entering storm drains go to waterways without being treated. Close to one in five (18 and 17 percent), on the other hand, said storm drain contents are treated, either before going to a waterway or at a treatment plant, and other similarly-sized groups (17 and 19 percent) said they didn't know whether the contents are treated or not.

AWARENESS OF SAN DIEGO'S STORM DRAIN SYSTEM

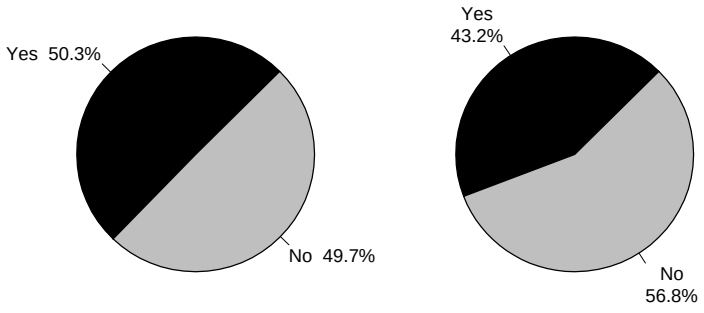


Figure 29

Table 16

WHERE THINGS THAT ENTER THE STORM DRAINS GO

	2001	2002
	Percent	
Treatment Plant	4.5	2.7
To Waterway But Treated First	13.8	14.6
To Waterway But Not Treated	41.8	39.5
To Waterway, Not Sure If Treated	16.5	18.8
Other	2.3	4.4
Don't Know	21.2	20.0

"THINK BLUE" SLOGAN

Awareness

Figure 30 illustrates that about a third of respondents in 2001 (31 percent) said they are aware of the slogan "Think Blue." This figure increased to close to half (45 percent) in 2002, and the increase is statistically significant.

AWARENESS OF THE SLOGAN "THINK BLUE"

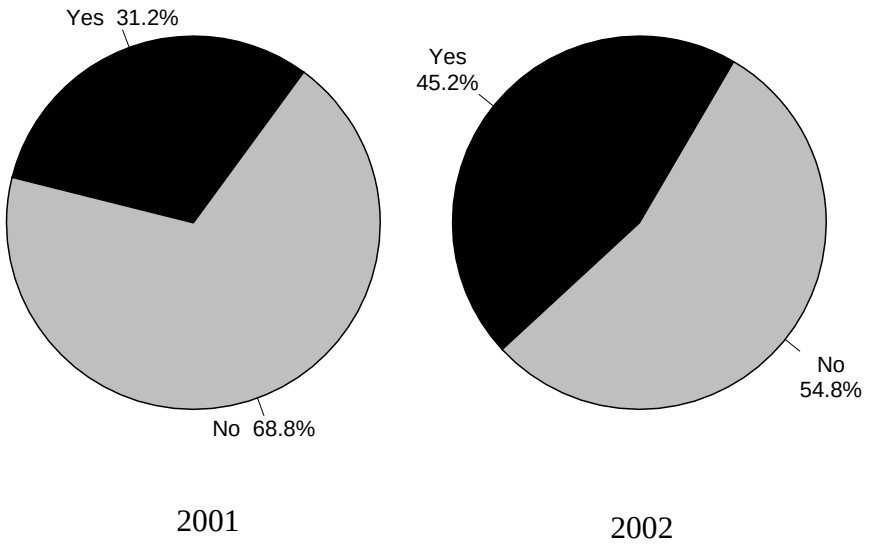


Figure 30

Places where people heard the "Think Blue" slogan are displayed in Table 17 (media in general) and in Tables 18 and 19 (specific media). None of these questions were asked in 2001.

Most likely to be mentioned in general was television (25 percent). This was followed by both television and radio (12 percent) and radio (10 percent).

Table 17

WHERE RESPONDENTS HEARD THE "THINK BLUE" SLOGAN

	Frequency	Percent
Radio	19	10.4
Television	45	24.6
Both Radio and Television	22	12.0
Radio and Bumper Sticker	1	.5
Radio and Magazine	1	.5
Other	89	48.6
Don't Recall	6	3.3

Radio stations on which respondents were most likely to have heard the slogan (Table 18) were KGB (21 percent), KBZT (12 percent), and KFMB (12 percent). Television stations on which respondents were most likely to have heard the slogan (Table 19) were XEWT (19 percent), KFMB (16 percent), KGTV (13 percent), and KUSI (10 percent). It should also be noted in this regard, however, that answers of "don't recall" were of a magnitude equal to the most-remembered stations.

Table 18

RADIO STATIONS ON WHICH RESPONDENTS HEARD THE SLOGAN ON

	Frequency	Percent
89.5 KPBS	3	7.0
92.5 FM MAGIC XHRM	2	4.7
93.3 FM KHTZ Channel 933	3	7.0
94.9 FM KBZT	5	11.6
100.7 FM KFMB STAR	5	11.6
101 FM KGB	9	20.9
102.1 FM KPRI SETS	2	4.7
600 AM KOGO 600 News Radio	4	9.3
1360 AM KPOP	1	2.3
Other	8	18.6
Several	1	2.3
Don't Recall	9	20.9

Table 19

TELEVISION STATIONS ON WHICH RESPONDENTS HEARD THE SLOGAN ON

	Frequency	Percent
4 COX- Padres	2	3.0
6 FOX	6	9.0
7/39 KNSD NBC	6	9.0
8 TV KFMB CBS	11	16.4
9/51 KUSI	7	10.4
10 KGTV	9	13.4
11/15 KPBS	5	7.5
12 XEWT Televisa Energy Communications Espanol	13	19.4
13 UPN	1	1.5
Other	2	3.0
Don't Recall	12	17.9

Meaning of the Slogan

Table 20 displays what aware respondents said when they were asked what the slogan means to them. The most prevalent answer (35 and 27 percent) was keeping the water clean. This was followed by not putting things in storm drains (15 and 19 percent). Being careful about what gets thrown in the water (13 percent) and taking care of the environment (10 percent) were prominent in 2002 but not in 2001; keeping the water blue was prominent in 2001 (11 percent) but not in 2002.

Table 20

MEANING OF THE SLOGAN

	2001	2002
	Percent	
Keeping the Water Clean/Clean Water/Keeping the Ocean Clean	34.8	26.8
Watch What You Throw in the Water/Be Careful What You Throw Into the Ocean/Don't Pollute the Water	4.3	12.6
Take Care of the Environment/Think Before You Put Something Down the Drain and How You Affect the Environment/To Be Aware of the Environment	9.4	10.4
Keep Things Clean/Keep Our Drain as Clean as Possible/To Try to Keep Clean	7.2	2.2
Keep Our Beaches and Bays Clean by Being Pollution Free/Don't Pollute/Stop Polluting	5.8	6.6
Don't Be Polluting the Air/Clean Air	7.2	4.9
What You Put Down Sewage Drains Goes to the Ocean/Thinking About What's Going Into the Ocean/To Make Sure That You Don't Put Anything in the Storm Drain Because It Will Go Down to the Ocean and Pollute/Remember What You Put in the Gutter Ends up in the Ocean	15.2	19.1
Keep the Water Clear	5.8	1.6
Keep the Water Blue	10.9	4.4
Environmentally Healthy/Think Healthy as Far as The Environment Goes	-	3.8
Think About the Ocean and Take Care of It	-	4.9
Protect the Water	-	2.2
Think of the Water or Ocean/Think of Blue Water	-	2.7
Help Save the Fish/Think About the Animals and Sea Life	-	2.2
Pay More Attention to Not Littering	-	.5
Watch Your Water Waste/Be Aware of Water Waste	-	1.1
No Drainage From Cars/Not to Drain Car Fluids Down the Drain	-	1.1
Nothing	1.4	-
Other	14.5	19.1
Don't Know/Don't Recall	8.0	4.9

Reactions

As Figure 26 indicates, the majority of aware respondents (54 percent in both years) said their general reactions to the "Think Blue" slogan were very positive. In addition, over a third (36 percent in both years) said their reactions were somewhat positive. When summed, these figures total nine in ten (90 percent). There were no very negative reactions to the slogan in either year.

REACTIONS TO THE SLOGAN

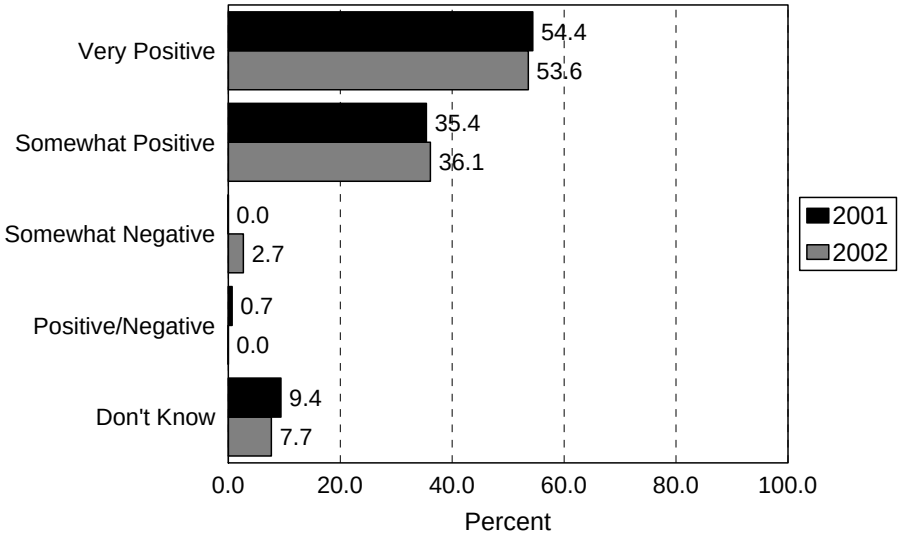


Figure 26

INFORMATION SOURCES

Figure 27 displays the mean probability of respondents paying attention to information about how to prevent the contamination of the ocean, bays, and beaches in various places on a scale of one to four where one equals definitely not and four equals definitely. As this graphic indicates, most of the information sources achieved an overall probability of less than probably (mean value of 3.00). Most likely to be attended to was information on television (3.34 in 2001 and 3.24 in 2002), mailed to respondents' homes (3.13 and 2.96), and on the radio (3.05 and 2.95).

PROBABILITY OF PAYING ATTENTION TO INFORMATION ON HOW TO PREVENT OCEAN, BAY, AND BEACH CONTAMINATION IN VARIOUS PLACES

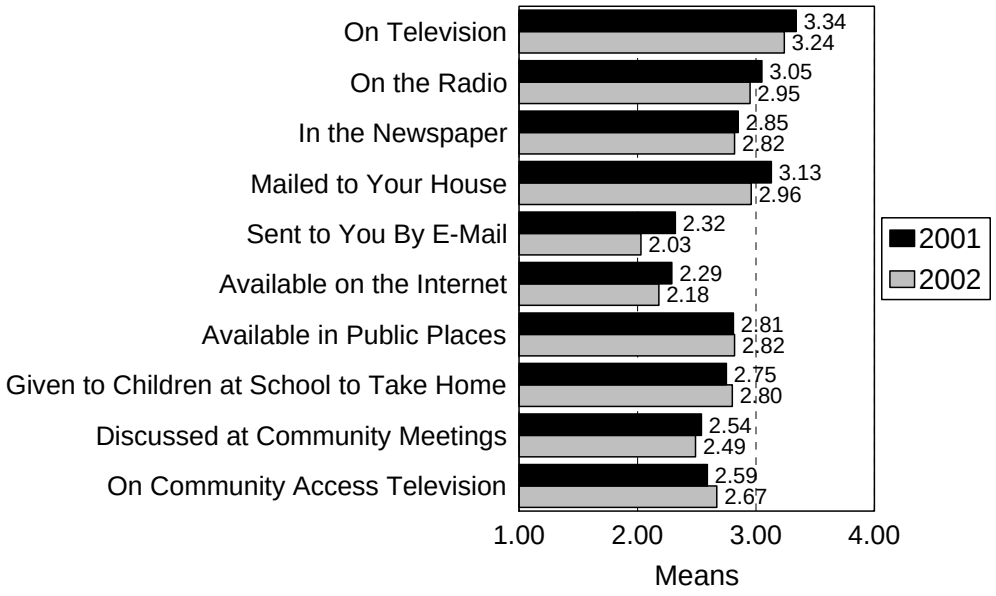


Figure 27

RESPONDENT DEMOGRAPHICS

Tables 21 through 25 and Figures 28 through 29 portray the demographics of the responding sample. These illustrations indicate the following.

- A majority of respondents (55 percent in 2001 and 51 percent in 2002) live in single-family homes, while about a third (35 and 37 percent) live in apartments or condominiums.

Table 21

TYPE OF RESIDENCE

	2001	2002
	Percent	
Single Family	54.9	50.6
Duplex/Triplex	5.2	4.0
Townhouse	4.3	6.4
Apartment/Condominium	34.8	36.8
Live in Recreational Vehicle	.2	1.2
Refused	.7	1.0

- About half of respondents (51 and 52 percent) own their homes.

HOME OWNERSHIP STATUS

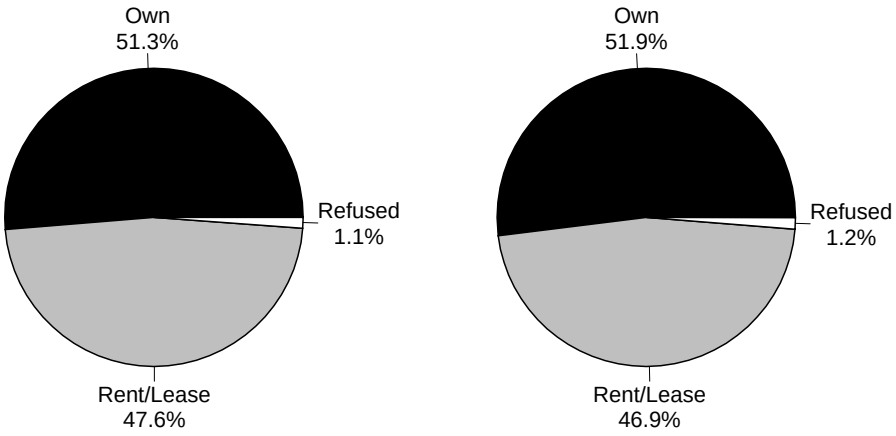


Figure 28

- The largest groups of respondents (38 and 40 percent) have a four-year degree or more education; between two-thirds and three-quarters (69 and 75 percent) have at least some college.

Table 22

EDUCATIONAL ATTAINMENT

	2001	2002
	Percent	
Less Than High School	7.4	4.2
High School Graduate	21.7	18.3
Vocational/Trade Certificate	.5	1.5
Some College	13.5	22.2
Two-Year Degree	16.9	13.1
Four-Year Degree or Higher	38.1	39.5
Refused	1.8	1.2

- Most respondents (65 and 64 percent) are between the ages of 25 and 54, with the largest single group (25 and 24 percent) being those aged 25 to 34.

Table 23

AGE

	2001	2002
	Percent	
18 to 24	11.5	10.9
25 to 34	25.3	24.0
35 to 44	21.2	20.5
45 to 54	18.7	19.3
55 to 64	9.0	12.6
65 and Over	11.3	9.6
Refused	2.9	3.2

- About three-fifths of respondents (61 and 63 percent) are Caucasian; almost one in five (19 percent) in 2001 and more than one in ten (14 percent) in 2002 are Hispanic.

Table 24

ETHNICITY

	2001	2002
	Percent	
Caucasian/White	60.7	63.2
African-American	5.6	3.0
Asian/Pacific Islander	4.5	4.4
Latino/Hispanic	19.4	13.8
Other	7.0	9.6
Refused	2.7	5.9

- In 2001, the largest group of respondents (25 percent) had household incomes of $25,000 to $49,999; the largest category in 2002 was $75,000 or more (26 percent). Incomes of $50,000 or more account for around two-fifths of respondents (40 and 44 percent).

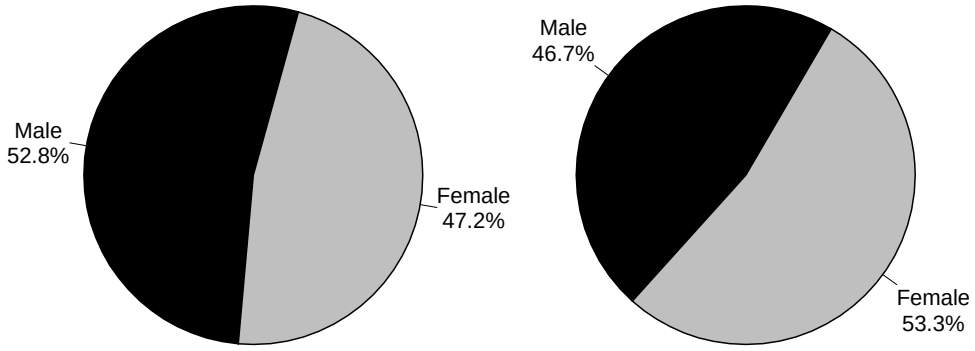
Table 25

HOUSEHOLD INCOME

	2001	2002
	Percent	
Under $25,000	14.9	16.0
$25,000 - $49,999	24.6	24.5
$50,000 - $74,999	19.9	18.5
$75,000 or More	20.3	25.9
Don't Know	3.4	4.0
Refused	16.9	11.1

- Slightly more than half of respondents in 2001 (53 percent) were men; slightly more than half in 2002 (53 percent) are women.

GENDER



2001 2002

Figure 29

IV. CONCLUSIONS AND RECOMMENDATIONS

According to the City of San Diego's Storm Water Pollution Prevention Program, there were three goals for the 2001-2002 public information campaign:

- Increase awareness that storm water flows to water bodies untreated
- Change some behaviors from those that pollute water bodies to those that do not
- Increase awareness of the "Think Blue" slogan

From the results of this research, it would appear that two of these objectives were achieved. Awareness of the "Think Blue" slogan increased quite dramatically, by over 14 percentage points. In addition, two behaviors appear to have changed: no one reported putting leftover paint in gutters or storm drains, and there was a decrease in the proportion of people who said they let the water from car-washing run onto the pavement.

Achievement of the third objective, on the other hand, must await further public education. Awareness of what happens to things that go into storm drains remained essentially static between 2001 and 2002.

Also worth noting in this regard, however, is the fact that a number of other indicators moved in a positive direction, although the changes were not great enough to achieve statistical significance. This suggests that another year or two of effort might move these measures further and yield stronger results.

In this context, the fact that the City is unable to produce new commercials this year may actually be an asset rather than a disadvantage. Repeated exposure to advertising is one of the predictors of positive results, and continued exposure to San Diego's ads over the coming year may lead to even more attitudinal and behavioral changes than have already been seen.

APPENDIX A

Survey Instruments

APPENDIX B

Detailed Data Tabulations