CITY OF SAN DIEGO

STORM WATER POLLUTION PROGRAM

2003 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 428 completed interviews, the survey was implemented between July 17 and August 6, 2003.

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; the first follow-up survey was conducted in July 30 and August, 2002. 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 well instructions are followed when pesticides, herbicides, or fungicides are used (*new question in 2003*)
    - How often these chemicals wash off into the street
    - How leftovers of these chemicals are disposed of

    - Types of chemicals used (*new question in 2003*)
    - Considerations in choosing chemicals to use (*new question in 2003*)
- 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
- 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
- How likely respondents are to pick up litter in their neighborhoods
- How often respondents visit the beach
- Among beach visitors:
    - Whether birds are fed
- 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
- Water bodies used for recreational purposes
- Health of the water body or bodies into which storm water from respondents' Zip Codes drain
- Familiarity with the concept of a watershed
- Among those familiar with the concept
  - 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
- 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 2002 survey. New questions for 2003 are identified in the preceding section of this report; a few questions were deleted between 2002 and 2003. 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 2003 sample was selected in precisely the same manner as the 2002 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, use of the Computer Assisted Telephone Interviewing (CATI) system software, 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, fully monitored, and CATI-equipped 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=8) 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 17, 2003 and was concluded on August 6. The cooperation rate for the survey was 85 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. 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 Coordinator reviewed a ten percent sample of all of the coded interviews.

The resulting data were then exported and key entered into the data analytic software SPSS for Windows and computer-checked for accuracy, adherence to the pre-established coding scheme, and internal logic. 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. Throughout, results from 2003 are compared to those from 2001 and 2002. Any statistically significant difference among the years are also noted.

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 all three years, although littering was noticeably less likely than the other issues to be viewed as being important and pollution of the ocean, bays, and beaches was also less likely to be viewed as being important in 2003. Pollution of the ocean, bays, and beaches was most likely to be perceived as being important in 2001, crime was most likely to be viewed as being important in 2002, and pollution of the ocean, bays, and beaches was most likely to be perceived as being important in 2003. The differences are small and statistically insignificant, however.

IMPORTANCE OF VARIOUS ISSUES THE CITY OF SAN DIEGO IS DEALING WITH

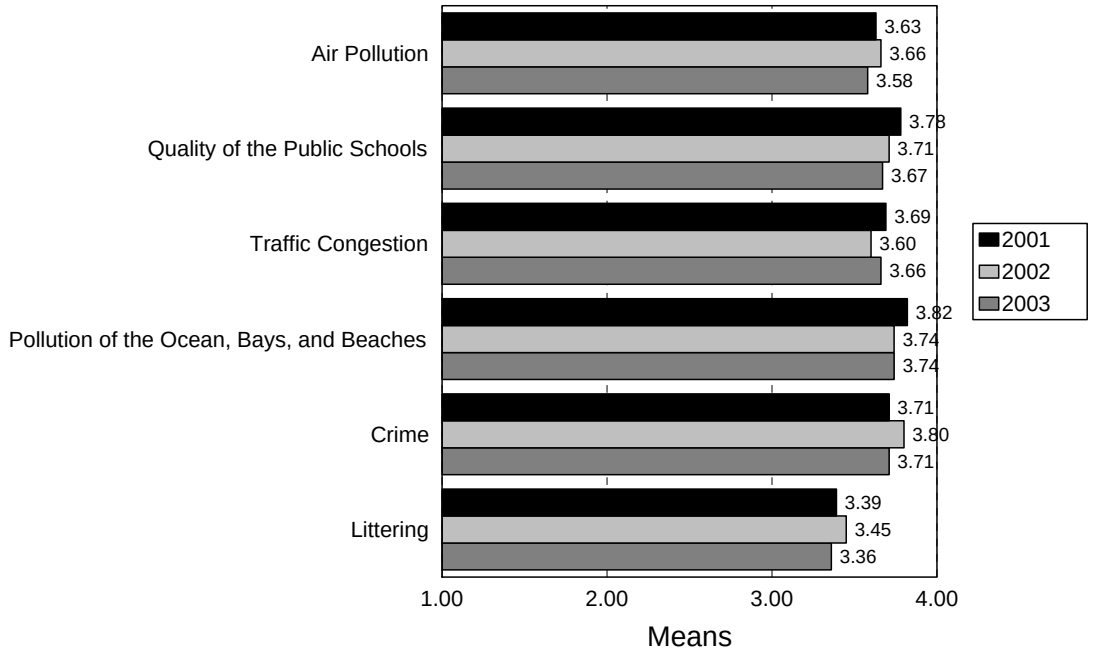


Figure 1

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 2001 and 2002; 92 percent in 2003) is a car, truck, or van. Second most likely to be in respondents' possession (45 percent in 2001, 38 percent in 2002, and 37 percent in 2003) was a garden; third most likely (28 percent in 2001, 25 percent in 2002, and 26 percent in 2003) was a dog.

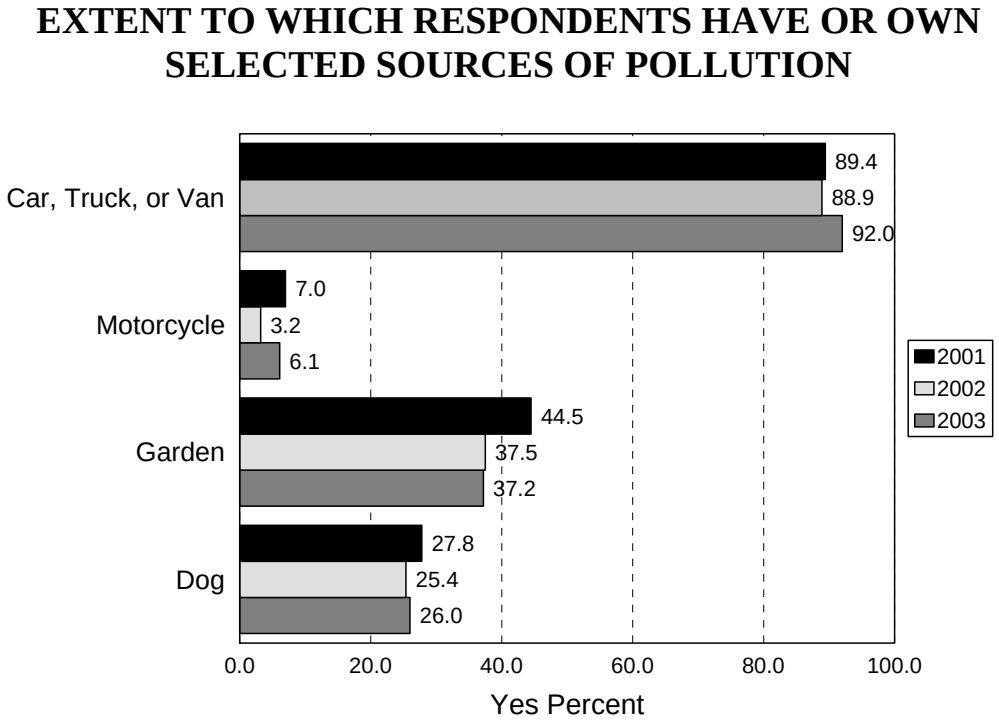


Figure 2

VEHICLE ISSUES

Washing

As shown in Figure 3, somewhat over two-fifths of those with vehicles (44 percent in 2001 and 2002; 41 percent in 2003) 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. Comparable figures are three-fifths (60 percent) in 2002 and nearly three-quarters (72 percent) in 2003.

EXTENT TO WHICH THOSE WITH VEHICLES WASH THEM AT HOME

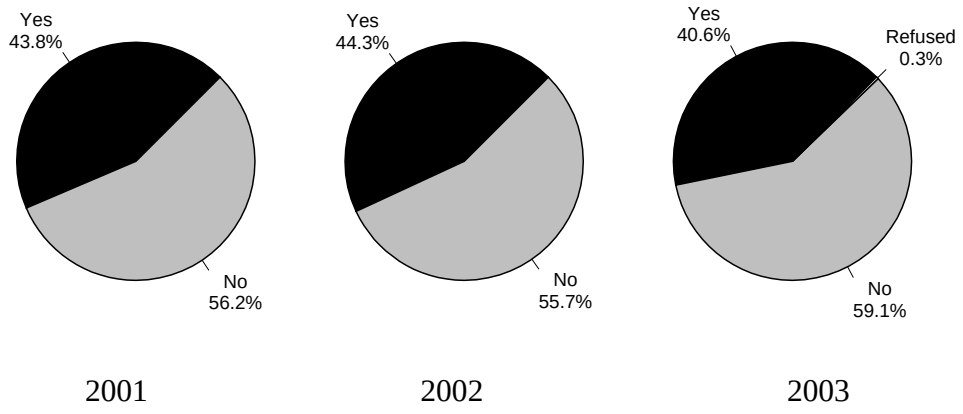


Figure 3

Table 1

WHERE WATER FROM VEHICLE WASHING RUNS

	2001	2002	2003
	Percent		
Onto Pavement Like Driveway, Street, Gutter	78.2	60.0	72.2
Onto Dirt	8.0	12.5	-
Onto Grass, Lawn, Garden	8.0	17.5	10.5
Other	5.7	9.4	16.0
Don't Know	-	.6	1.2

Oil Changing

Figure 4 indicates that about one in five of those with vehicles in 2001 (21 percent), 15 percent in 2002, and over one-tenth (12 percent) in 2003 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, 93 percent in 2002, and 90 percent in 2003) said they take the used oil to a recycling center. In addition, seven percent in 2001, 4 percent in 2002, and 2 percent in 2003 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 in 2002 and 2003 (96 and 92 percent). Only one percent in 2001 said they pour it down the storm drain; no one said this in 2002 or 2003.

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

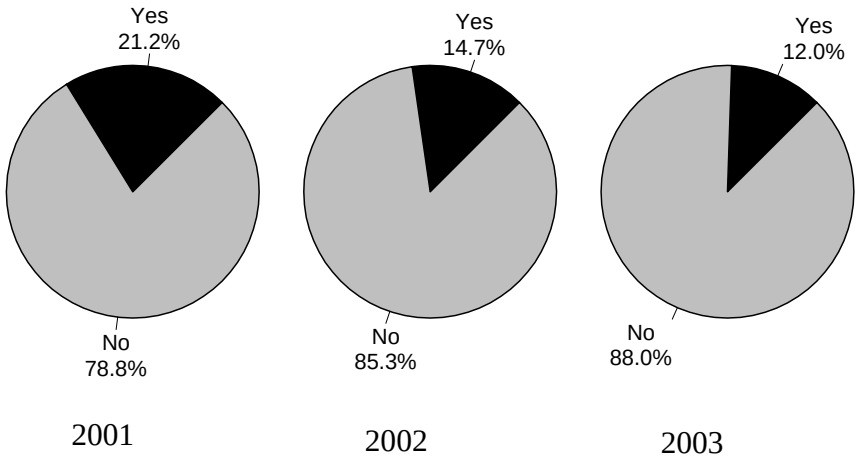


Figure 4

Table 2

WHAT IS DONE WITH THE USED OIL

	2001	2002	2003
	Percent		
Pour Down Inside Drain	2.4	-	-
Pour Down Storm Drain	1.2	-	-
Throw in Trash/Garbage	4.8	1.9	4.2
Keep Around the House	2.4	-	-
Take to Hazardous Waste Event/Roundup	7.1	3.8	2.1
Take to Recycling Center	82.1	92.5	89.6
Other	-	1.9	-
Don't Know	-	-	4.2

Radiator Draining

As illustrated in Figure 5, less than one in ten of those who own vehicles (8 percent in 2001, 4 percent in 2002, and 3 percent in 2003) said they drain the vehicles' radiators at least occasionally. Of these, as Table 3 demonstrates, the majority (61 percent in 2001, 53 percent in 2002, and 62 percent in 2003) said they take the radiator fluid to a recycling center. In addition, more than one in ten in 2001 and 2002 (12 and 13 percent) and nearly one in ten in 2003 (8 percent) said they take it to a hazardous waste event. These two figures total close to three-quarters in 2001 and 2003 (73 and 69 percent) and two-thirds (67 percent) in 2002. Only three percent in 2001, seven percent in 2002, and eight percent in 2003 said they pour the fluid down the storm drain, while another three percent in 2001 and eight percent in 2003 said they pour it into the ground. No one said this in 2002.

EXTENT TO WHICH THOSE WITH VEHICLES DRAIN THE VEHICLES' RADIATORS

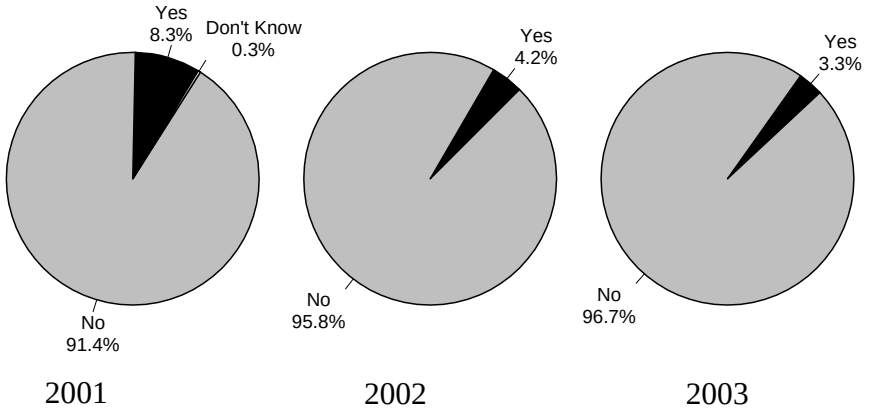


Figure 5

Table 3

WHAT IS DONE WITH THE RADIATOR FLUID

	2001	2002	2003
	Percent		
Pour Down Inside Drain	6.1	13.3	7.7
Pour Down Storm Drain	3.0	6.7	7.7
Pour Onto Ground	3.0	-	7.7
Throw in Trash/Garbage	6.1	13.3	7.7
Keep Around the House	9.1	-	-
Take to Hazardous Waste Event/Roundup	12.1	13.3	7.7
Take to Recycling Center	60.6	53.3	61.5

GARDEN ISSUES

Green Waste Disposal

Table 4 illustrates that the largest groups of those with gardens (38 percent in 2001, 32 percent in 2002, and 31 percent in 2003) said they throw their grass clippings and other green waste into the trash or garbage. Other somewhat common practices were recycling them (24, and 30 percent) and composting them or using them as mulch (13, 20, and 15 percent); having a gardener or lawn service take them away was relatively prominent in 2001 (13 percent) but not in 2002 (2 percent) or 2003 (5 percent).

Table 4

HOW LAWN CLIPPINGS AND OTHER GREEN WASTE ARE DISPOSED OF

	2001	2002	2003
	Percent		
Throw in Trash/Garbage	38.6	31.6	30.8
Taken Away by Gardener/Lawn Service	13.2	2.0	5.0
Put in Compost Pile/Use as Mulch	13.2	19.7	14.5
Leave on Lawn	3.6	2.0	1.3
Take to Compost Facility	2.5	2.0	3.8
Take to Landfill/Transfer Station	4.1	3.3	3.1
Put in Curbside Recycling/Green Waste Container	-	24.3	29.6
Other	14.7	6.6	7.5
Don't Know What Gardener Does	10.2	8.6	4.4

As shown in Table 5, the largest groups of respondents (68 percent in 2001, 55 percent in 2002, and 46 percent in 2003) 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 in 2002 and 11 percent in 2003). Only one percent in 2001, three percent in 2002, and four percent in 2003 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	2003
	Percent		
Sweep up and Put Into Trash	68.0	54.6	45.9
Blow Into Yard (Leaf Blower)	4.6	4.6	10.1
Sweep Into Street/Gutter	.5	1.3	3.1
Hose Into Street/Gutter	.5	1.3	.6
Put in Curbside Recycling/Green Waste Container	-	12.5	11.3
Not Applicable - No Lawn	.5	-	.6
Not Applicable - No Clippings	1.5	1.3	1.3
Other	13.7	17.1	20.8
Don't Know What Gardener Does	10.7	7.2	6.3

Watering

Figure 6 illustrates that close to half of respondents (46 percent in 2001, 48 percent in 2002, and 45 percent in 2003) said water from their gardens never runs into the gutter or street. More than a quarter in 2001 and 2002 (28 and 27 percent) and more than a third in 2003 (35 percent) said it rarely does. These figures sum to around three-quarters (74, 75, and 79 percent). Around one in five, on the other hand (23, 24, and 19 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

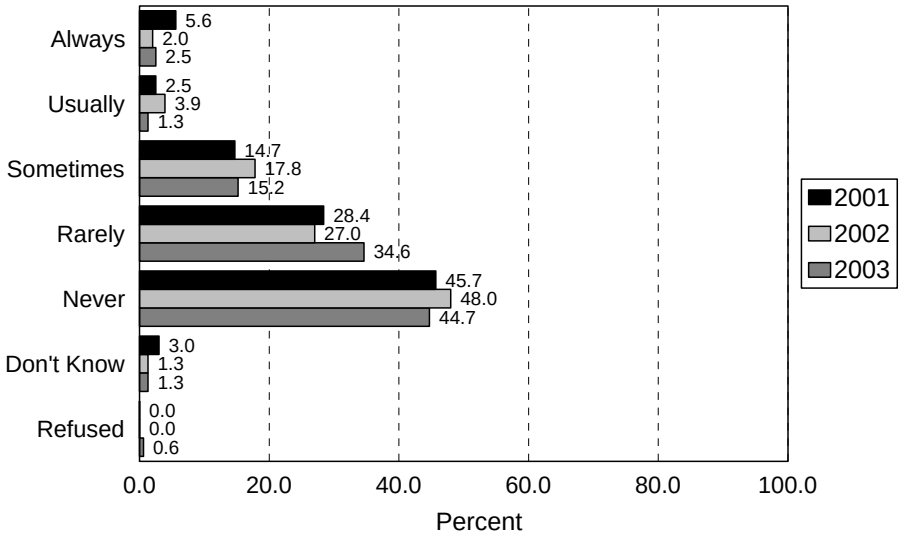


Figure 6

Use of Pesticides, Herbicides, or Fungicides

Figure 7 indicates that more than a quarter of respondents (29 percent in 2001, 30 percent in 2002, and 30 percent in 2003) said they use pesticides, herbicides, or fungicides in their gardens. In contrast, the majority (70 percent in 2001 and 2002; 69 percent in 2003) said they do not.

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

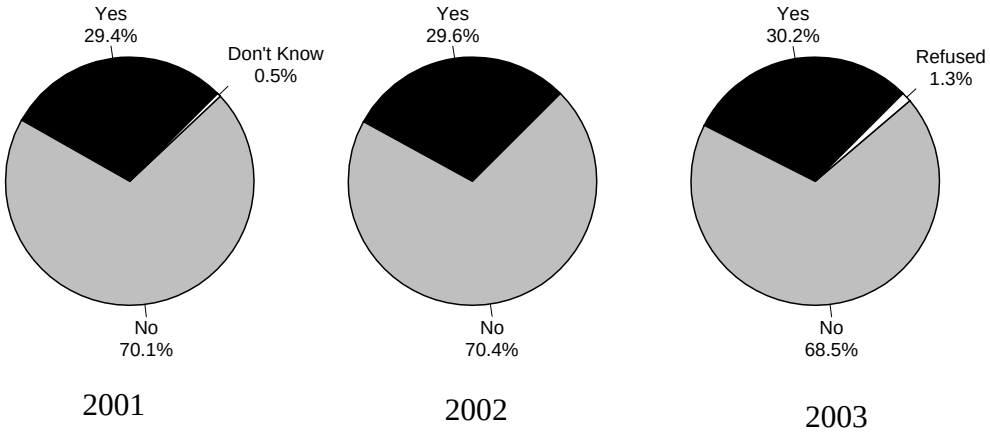


Figure 7

Among those who said they use chemicals, as portrayed in Figure 8, by far majority (81 percent) said they follow the instructions very carefully. In addition, 15 percent said they follow the instructions somewhat carefully. These figures sum to almost everyone (96 percent). This question was new in 2003.

As shown in Figure 9, more than half (57, 56, and 52 percent) said garden chemicals never wash off into the street. In addition, another close to a third (31 percent) in 2001, close to two-fifths (38 percent) in 2002, and over a third (35 percent) in 2003 said they rarely do so. These figures total around nine in ten (88, 93, and 88 percent). Slightly more than one in ten (12 percent) in 2001, seven percent in 2002, and eight percent in 2003, on the other hand, admitted that they always, usually, or sometimes do.

CARE WITH WHICH THE INSTRUCTIONS ARE READ AND FOLLOWED CAREFULLY WHEN PESTICIDES, HERBICIDES, OR FUNGICIDES ARE USED IN RESPONDENTS' GARDENs

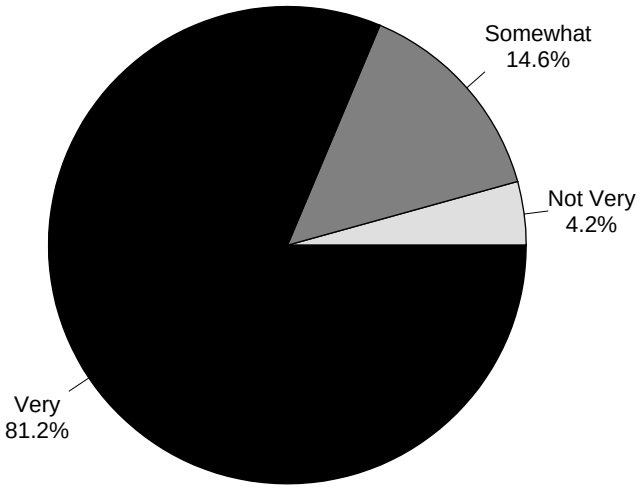


Figure 8

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

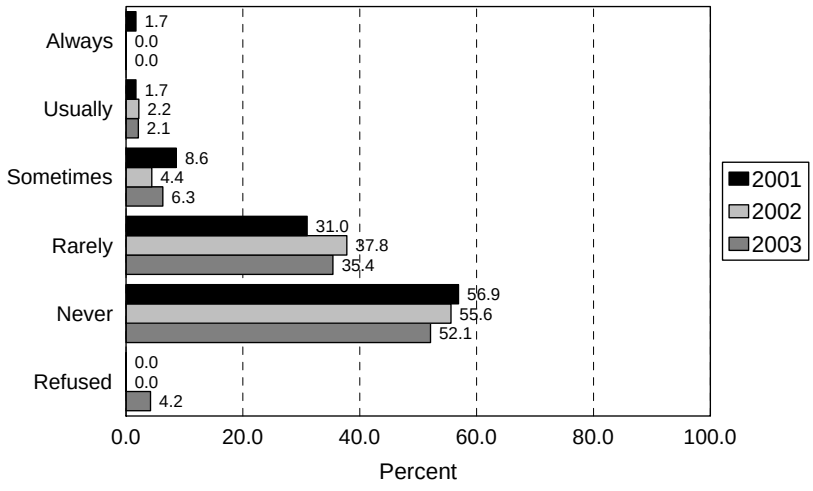


Figure 9

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, 47 percent in 2002, and 48 percent in 2003). Taking them to a hazardous waste collection was secondary in 2002 at 22 percent and in 2003 at 19 percent; this answer was a minor choice in 2001. Putting them in the trash was prominent in 2001 (38 percent) but not in 2002 or 2003. Finally, two percent in 2001 but no one in 2002 or 2003 said they put them down an outdoor drain.

Table 6

HOW LEFTOVER PESTICIDES, HERBICIDES, OR FUNGICIDES ARE DISPOSED OF

	2001	2002	2003
	Percent		
Put in Trash/Garbage	37.9	8.9	8.3
Put Down Indoor Drain	1.7	-	-
Put Down Outdoor Drain	1.7	-	-
Take to Hazardous Waste Collection	5.2	22.2	18.8
Take to Landfill or Dump	5.2	-	-
Not Applicable/Don't Have Leftovers	37.9	46.7	47.9
Other	8.6	11.1	25.0
Don't Know	1.7	11.1	-

Among those who indicated that they use chemicals, as shown in Table 7, the largest group (23 percent) said they use no insect control method. This was followed by those who indicated that they use a combination of traditional and non-chemical methods and those who said they use traditional chemicals alone (22 percent each).

As portrayed in Table 8, the largest group of those who use chemicals (40 percent) said that the most important consideration in choosing the method of insect control is the potential for toxic side affects. This was followed by those who said speed of results was most important was most important (37 percent). These two questions were both new in 2003.

Table 7

METHODS FOR CONTROLLING INSECTS

	Frequency	Percent
Mainly Use Traditional Synthetic Chemicals	35	22.0
Mainly Use Alternative, Non-Chemical Methods	32	20.1
Use a Combination of Traditional and Alternative Methods	35	22.0
Uses No Insect Control Method	37	23.3
Don't Know	19	11.9
Refused	1	.6

Table 8

MOST IMPORTANT CONSIDERATION IN CHOOSING BETWEEN TRADITIONAL AND ALTERNATIVE METHODS OF INSECT CONTROL

	Frequency	Percent
Cost	9	10.1
Method of Application	3	3.4
Potential for Toxic Side Effects	36	40.4
Speed of Results	33	37.1
Other	5	5.6
Refused	3	3.4

DOG ISSUES

Dog Walking

As shown in Figure 10, by far the majority of dog owners (83 percent in 2001, 88 percent in 2002, and 86 percent in 2003) said they always pick up the droppings when they walk their dogs. In contrast, eleven percent in 2001, six percent in 2002, and 3 percent in 2003 said they never do. Five percent in both 2001 and 2002 and 10 percent in 2003 said they only usually or sometimes do.

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

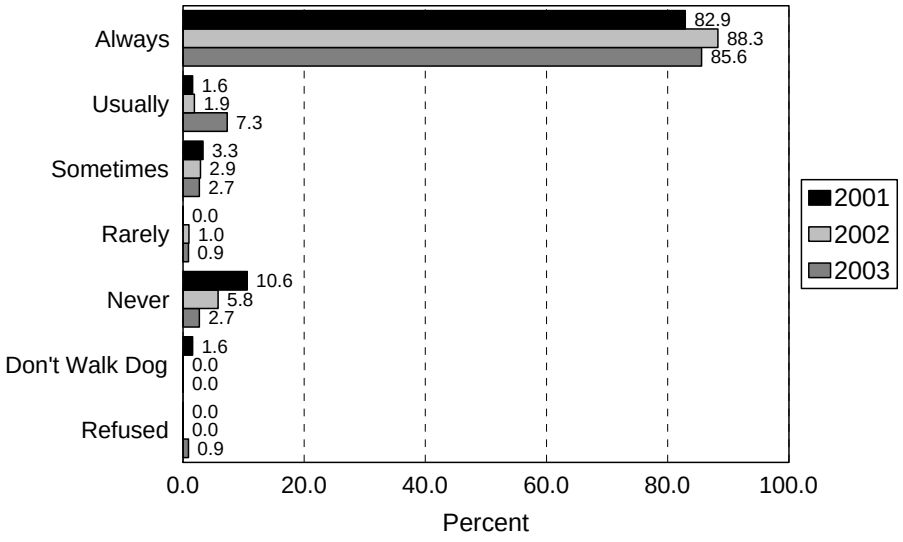


Figure 10

Yard Cleaning

Figure 11 illustrates that around two-fifths of those with dogs (42 percent in 2001 and 2002; 45 percent in 2003) said they clean up the dog droppings in their yards every day. In addition, around a third (33, 29, and 36 percent) said they clean up every few days. When summed, these figures total the majority (75, 71, and 81 percent). Close to one in ten in 2001 and 2002, on the other hand (9 and 8 percent), and one percent in 2003, said they clean up less than once a week, while 14, 15, and 13 percent said they clean up once a week.

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

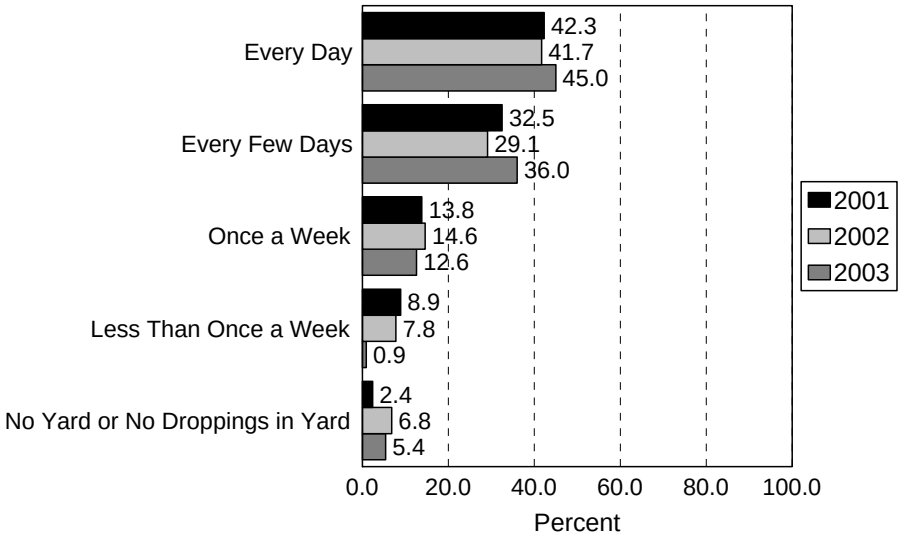


Figure 11

COOKING ISSUES

Table 9 illustrates what respondents said they do when they have a pot or pan with grease in it. The largest groups (43 percent in 2001, 48 percent in 2002, and 43 percent in 2003) said they pour the grease into a container and throw it into the garbage, and around a quarter (26, 23, and 28 percent) said they wipe the grease into the garbage. Close to one in five, however (19 in 2001 and 2002; 17 percent in 2003) said they pour the grease down the drain, most likely (16 percent in 2001 and 2002; 15 percent in 2003) with hot water.

Table 9

WHAT IS DONE WITH THE GREASE IN POTS AND PANS

	2001	2002	2003
	Percent		
Wipe the Grease out of the Pan Into the Garbage	26.0	23.2	26.7
Wash the Grease Down the Drain With Hot Water	15.6	16.3	15.0
Wash the Grease Down the Drain With Cold Water	2.9	2.2	2.1
Pour the Grease Into a Container and Throw the Container in the Garbage	43.3	47.7	43.3
Put the Pot or Pan in the Dishwasher With the Grease in It	.5	.7	1.4
Never Cooks	11.7	4.4	6.1
Never Cooks With Grease	-	.5	-
Other	-	4.7	5.2
Don't Know	-	.2	-
Refused	-	-	.2

PAINTING ISSUES

As shown in Figure 12, about two-fifths of respondents in 2001 and 2002 (41 and 40 percent) and over a third in 2003 (36 percent) said they paint around the house either inside or outside at least occasionally. Of these, as Table 10 indicates, the majority (59, 52, and 54 percent) said they wash out their brushes, rollers, and pans in an inside sink. Around a quarter, however (29, 25, and 26 percent), use an outside sink, the yard, or a driveway, gutter, or street.

EXTENT TO WHICH RESPONDENTS PAINT AROUND THE HOUSE

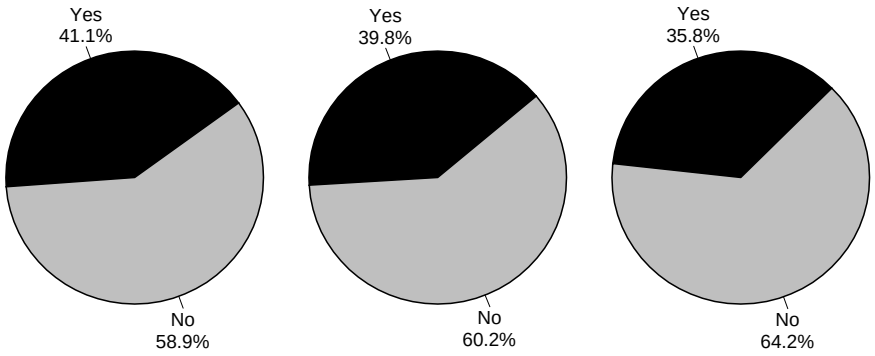


Figure 12

Table 10

WHERE PAINT BRUSHES, ROLLERS, AND PANS ARE CLEANED OUT

	2001	2002	2003
	Percent		
Inside Sink	58.8	51.6	53.6
Outside Sink	12.6	5.0	8.5
Grass/Dirt/Yard	9.3	16.1	11.1
Driveway/Gutter/Street	7.1	3.7	5.9
Throw Away/Trash/Disposable Ones	-	-	8.5
Depends on Type of Paint	-	-	2.0
Other	12.1	21.1	7.2
Don't Know	-	2.5	1.3
Refused	-	-	2.0

Methods of disposing of leftover paint are portrayed in Table 11. The most frequent answer in 2001, the second most frequent answer in 2002, and the most frequent answer in 2003 (28, 15, and 34 percent, respectively) was that people who paint don't have leftovers. Second most likely to be answered in 2003 (19 percent) and fourth to be mentioned in 2002 (12 percent) was taking it to hazardous waste collection. Second most likely to be mentioned in 2001, most likely to be offered in 2002, and third most likely to be mentioned in 2003 (23, 16, and 18 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 and one percent said it in 2003.

Table 11

HOW EXTRA PAINT IS DISPOSED OF

	2001	2002	2003
	Percent		
Put in Trash/Garbage	22.5	16.1	18.3
Put Down Indoor Drain	1.6	-	-
Put Down Outdoor Drain	1.1	1.2	-
Put Into Gutter/Storm Drain	19.2	-	.7
Take to Recycle Center	-	-	11.8
Take to Hazardous Waste Collection	7.1	11.8	19.0
Take to Landfill or Dump	1.6	3.7	3.9
Bury It	1.1	-	-
Not Applicable/Don't Have Leftovers	28.0	14.9	34.0
Other	17.6	29.8	12.4
Don't Know	-	.6	-

SEWER ISSUES

Blockages

As illustrated in Figure 13, less than one in five respondents (16 percent in 2001, 13 percent in 2002, and 16 percent in 2003) said they have ever experienced a blocked sewer line where they live. Of these, as Table 12 indicates, about a third (34, 33, and 36 percent) said the blockage was caused by roots. Other fairly common occurrences were a break in the main line (13, 11, and 19 percent) and a break in the connecting line (11, 7, and 5 percent). Finally, more than a quarter (27, 30, and 27 percent) said they didn't know.

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

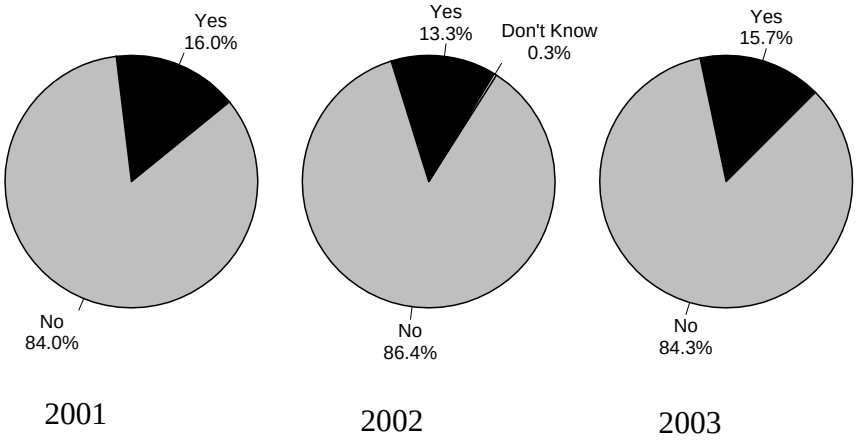


Figure 13

Table 12

CAUSES OF THE BLOCKAGES

	2001	2002	2003
	Percent		
Grease	7.0	5.6	6.0
Roots	33.8	33.3	35.8
Break in Connecting Line	11.3	7.4	4.5
Break in Main Line	12.7	11.1	19.4
Not Applicable – Apartment/Condo/Rental	7.0	11.1	6.0
Grease and Roots	1.4	-	-
Hair	-	1.9	1.5
Don't Know	26.8	29.6	26.9

Line Cleaning

Table 13 demonstrates that the largest groups of respondents (28 percent in 2001, 19 percent in 2002, and 52 percent in 2003) said they never clean out the sewer lines connecting their homes to the main sewer line[1]. Somewhat over a quarter (27 percent) in 2001, more than one in ten in 2002 (13 percent), and six percent in 2003 said they do so annually, while close to one in ten (9 percent) in 2001, close to one in five (19 percent) in 2002, and four percent in 2003 said they do so once every two to three years. Finally, it should be noted that close to a quarter (23, 24, and 21 percent) said this is not applicable

[1] Although this question was supposed to have been asked of all respondents in 2001 and 2002, it was asked only of those who had experienced a blockage. In this year's survey, we ensured that the erroneous skip pattern was corrected.

because they live in apartments, condominiums, or rentals. The increase in those who never clean the sewer lines is statistically significant.

Table 13

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

	2001	2002	2003
	Percent		
More Often Than Once a Year	-	3.7	2.1
Once a Year	26.8	13.0	6.3
Once Every Two-Three Years	8.5	18.5	4.2
Once Every Four-Five Years	5.6	11.1	1.4
Once Every Six-Ten Years	4.2	1.9	2.1
Less Than Once Every Ten Years	4.2	1.9	3.3
Never	28.2	18.5	52.2
Not Applicable – Apartment/Condo/Rental	22.5	24.1	21.1
Don't Know	-	7.4	7.3

LITTER ISSUES

Figure 14 indicates that between over three-quarters and about four-fifths of respondents (77 percent in 2001, 81 percent in 2002, and 77 percent in 2003) said they never litter. In addition, close to one in five (17, 16, and 17 percent) said they rarely do. These figures total more than nine in ten (94, 96, and 94 percent). Six, four, and seven percent, respectively, on the other hand, admitted they occasionally or often litter.

FREQUENCY WITH WHICH RESPONDENTS LITTER

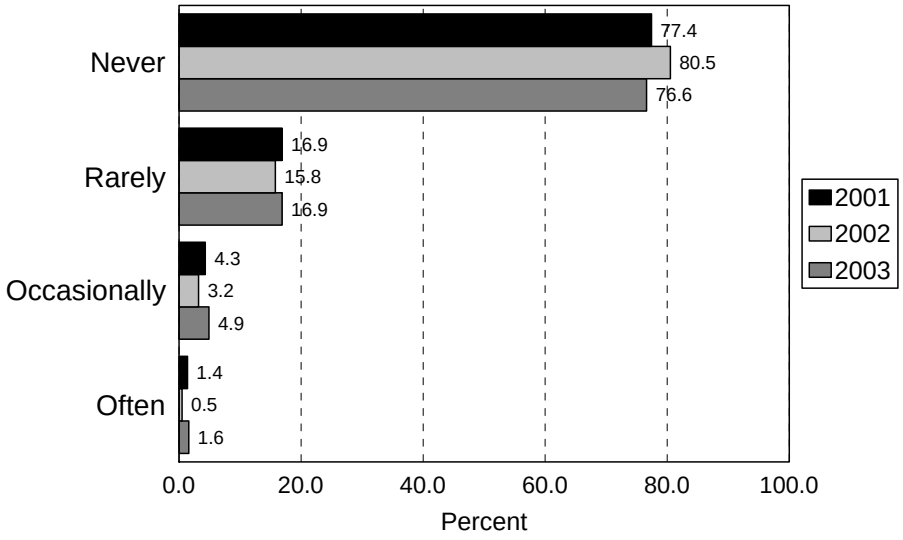


Figure 14

As demonstrated in Figure 15, more than nine in ten respondents (96 percent in 2001, 98 percent in 2002, and 97 percent in 2003) said they never empty trash or car ashtrays at freeway on- or off-ramps. Only a very few (4, 2, and 3 percent) admitted they rarely, occasionally, or often do so.

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

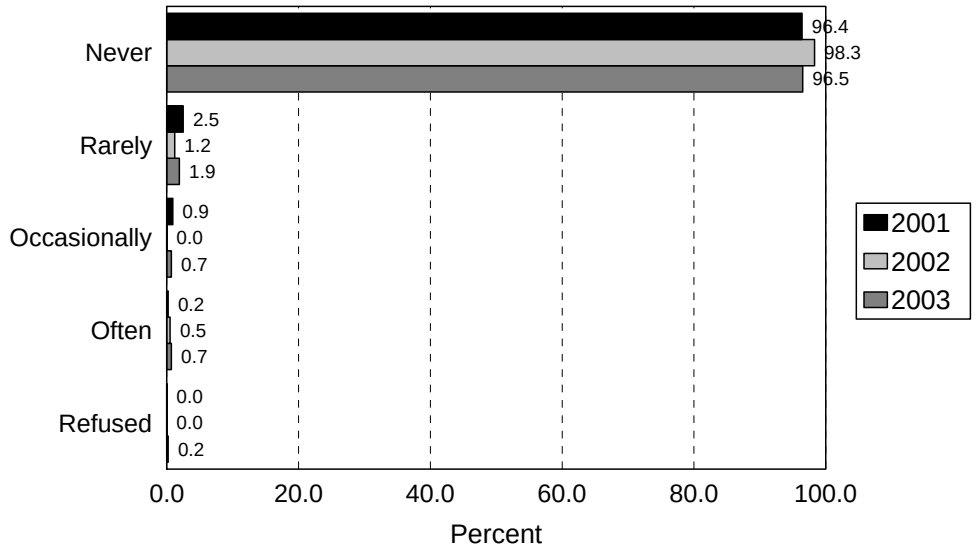


Figure 15

Figure 16 indicates that the largest group of respondents (44 percent in 2002 and 47 percent in 2003) said there is not very much litter in their neighborhoods. In addition, close to one in five (18 and 17 percent) said there is none. When these figures are summed, they total the majority (62 percent in 2002 and 63 percent in 2003). This question was not asked in 2001.

AMOUNT OF LITTER IN RESPONDENTS' NEIGHBORHOODS

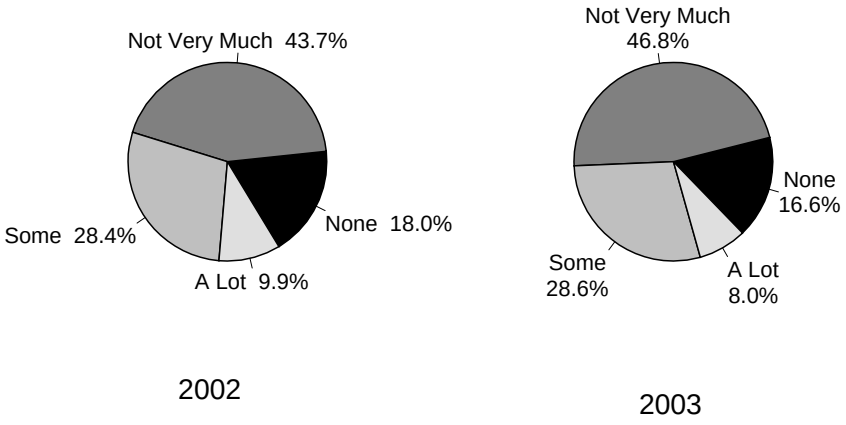


Figure 16

As shown in Figure 17, the largest group of respondents (44 percent each year) said they would be somewhat likely to pick up litter they see in their neighborhoods. In addition, close to two-fifths in 2002 (38 percent) and a third in 2003 (33 percent) said they would be very likely to do so. These figures total by far the majority (82 and 76 percent). This question was also not asked in 2001.

LIKELINESS OF RESPONDENTS PICKING UP LITTER IN THEIR NEIGHBORHOODS

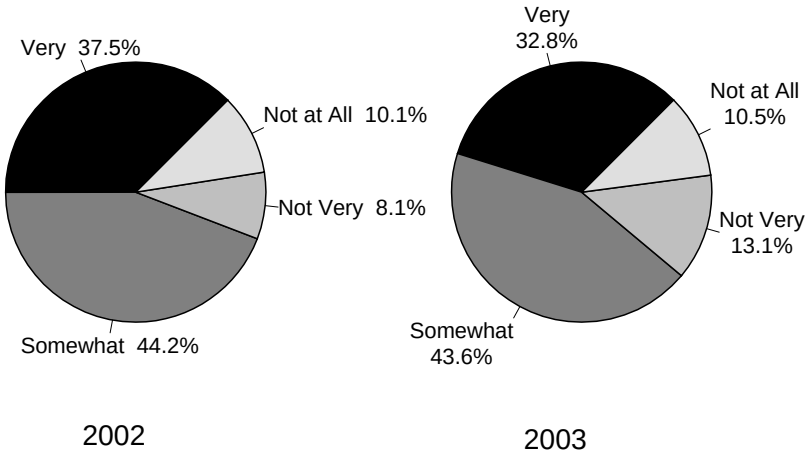


Figure 17

BEACH ISSUES

Frequency of Visitation

Table 14 illustrates that about half of respondents (50, 48, and 43 percent) said they visit a San Diego beach at least once a month. The majority (71, 72, and 68 percent) said they visit at least once a year.

Table 14

FREQUENCY WITH WHICH RESPONDENTS VISIT SAN DIEGO BEACHES

	2001	2002	2003
	Percent		
Every Day	5.2	2.2	3.3
Every Few Days	9.0	7.2	8.7
Once a Week	12.6	12.1	11.7
Once Every Two to Three Weeks	9.9	12.6	8.9
Once a Month	13.1	13.6	10.8
Once Every Two to Three Months	9.0	8.1	9.6
Every Four to Six Months	4.7	8.1	6.6
Every Seven to Twelve Months	7.0	8.4	8.7
Less Than Once a Year	16.5	11.9	14.5
Never	12.9	15.8	17.3

Bird Feeding

Among those who visit a beach at least once a year, as Figure 18 shows, by far the majority (85 percent in 2001 and 2002; 90 percent in 2003) said they do not feed the birds. Fifteen percent in 2001 and 2002 and 10 percent in 2003 said they do.

EXTENT TO WHICH BEACH VISITORS FEED THE BIRDS

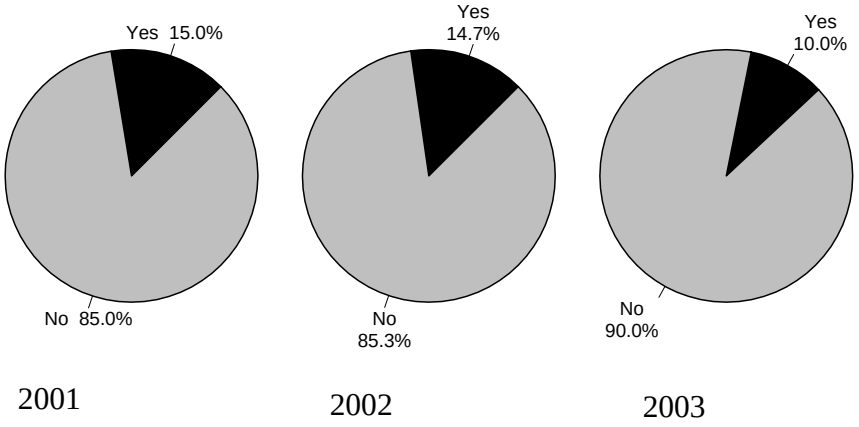


Figure 18

Beach Closures

As shown in Figure 19, the majority of respondents (55, 60, and 52 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 in 2001 and 2002 (20 and 17 percent) said it is usually due to runoff from homes and businesses. This figure increased to over a quarter (27 percent) in 2003, although the increase is not statistically significant.

USUAL REASON WHY SAN DIEGO BEACHES ARE CLOSED DUE TO CONTAMINATION

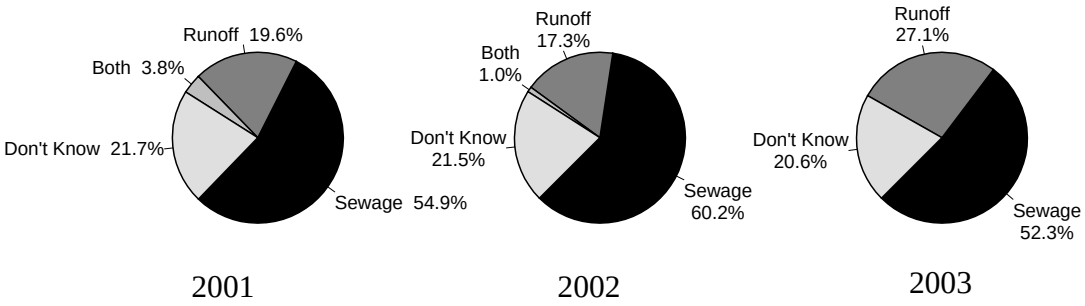


Figure 19

WATER BODY ISSUES

Table 15 displays the water bodies respondents named as being part of the communities where they live. Most likely to be mentioned in 2002 was Mission Bay (35 percent). In 2003, Mission Bay and the Pacific Ocean were almost equally likely to be mentioned (25 and 26 percent). This was followed by San Diego Bay (18 percent in 2002 and 16 percent in 2003) and Lake Miramar (6 and 13 percent). This question was not asked in 2001.

Table 15

WATER BODIES THAT ARE PART OF THE COMMUNITY WHERE RESPONDENTS LIVE

	2002	2003
	Percent	
Chollas Lake	1.2	.9
Coronado Bay/Coronado Beach	.7	.7
Del Mar	-	.7
Dog Beach	-	.7
Imperial Beach	.5	.9
La Jolla Beach	1.0	3.0
Lake Cuyamaka	.2	-
Lake Hodges	2.0	1.9
Lake Miramar	5.9	12.9
Lake Murray	2.2	.9
Lake Poway	1.2	3.3
Mission Bay	35.1	25.3
Ocean Beach/Pacific Beach	5.2	11.7
Penasquitos	2.7	.5
San Diego Bay	18.3	16.2
San Diego Harbor	.7	.9
San Diego River	12.1	9.8
San Dieguito River	.7	-
The Pacific Ocean/The Ocean	12.3	26.0
Tijuana River	2.2	.2
Other	7.7	15.0
None	6.7	9.8
Don't Know	14.3	8.7

Water bodies respondents said they visit or use for recreational purposes are portrayed in Table 16. The Pacific Ocean was the most prominent answer (16 percent in 2002 and 25 percent in 2003). This was followed by Mission Bay (34 percent in 2002 and 22 percent in 2003) and La Jolla Beach (6 percent in 2002 and 11 percent in 2003). This question was also not asked in 2001.

Table 16

WATER BODIES RESPONDENTS VISIT OR USE FOR RECREATIONAL PURPOSES

	2002	2003
	Percent	
Chollas Lake	1.0	.2
Colorado River	.7	-
Coronado Bay/Coronado Beach	5.9	6.3
Del Mar	.5	.5
Dog Beach	.5	.7
Imperial Beach	.7	1.2
La Jolla Beach	5.9	10.5
Lake Cuyamaka	.7	-
Lake Hodges	.5	.5
Lake Miramar	3.2	5.6
Lake Murray	.7	2.8
Lake Poway	.7	.9
Mission Bay	33.6	22.2
Ocean Beach/Pacific Beach	8.9	13.1
Penasquitos	2.0	-
San Diego Bay	12.6	8.9
San Diego Harbor	.2	-
San Diego River	4.2	.5
San Dieguito River	.2	-
The Pacific Ocean/The Ocean	16.3	24.8
Tijuana River	1.0	-
Other	14.1	14.7
None	15.3	19.4
Don't Know	6.4	2.3

Figure 20 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 B for details). As the figure indicates, the most prevalent answer was that the water body or bodies are somewhat healthy (30 percent

in 2002 and 28 percent in 2003). In addition, around one in ten (10 and 13 percent) said the water body or bodies are very healthy. These figures sum to less than half (40 and 41 percent). Answers of not very and not at all healthy total more than a third (35 percent in 2002 and 37 percent in 2003); the second most likely single answer was "don't know" (25 and 22 percent). This question was also not asked in 2001.

HEALTHINESS OF BAYS AND RIVERS IN RESPONDENTS' AREAS

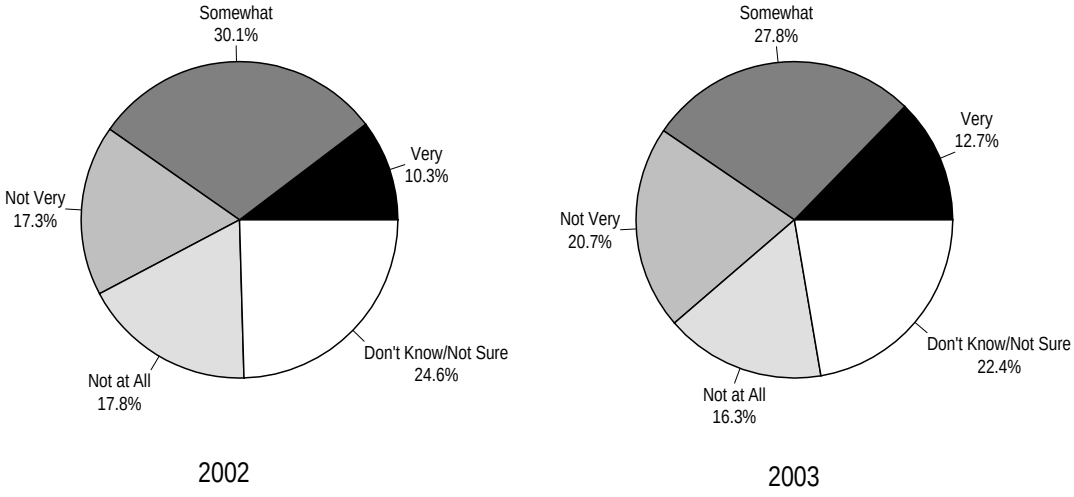


Figure 20

WATERSHED ISSUES

As shown in Figure 21, about two-thirds of respondents (68 percent in 2002 and 64 percent in 2003) said they are not familiar with the concept of a watershed. Among those who said they are, as illustrated in Table 17, about one in five (21 percent in 2002

and 22 percent in 2003) were able to define the term correctly. Neither of these questions were asked in 2001.

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

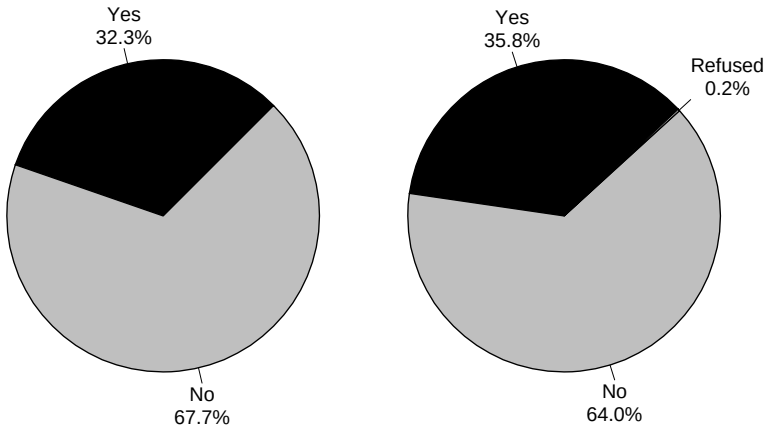


Figure 21

Table 17

HOW FAMILIAR RESPONDENTS WOULD DEFINE A WATERSHED

	2002	2003
	Percent	
Right Definition: Has to Do With the Land	21.4	22.2
Sort of Knows Definition	23.7	19.6
Wrong Definition: Erosion Issues	26.7	2.6
Wrong Definition: Groundwater Issues	12.2	11.1
Wrong Definition: Water Filtering Issues	3.1	1.3
Runoff	-	3.9
Water Storage/A Place Where You Store Water	-	3.9
Other	3.8	24.2
Don't Know	9.2	11.1

Figure 22 shows that about half of respondents who were familiar with the concept of a watershed (54 percent in 2002 and 48 percent in 2003) said they do not live in a watershed. In addition, close to one in five in 2002 (18 percent), and nearly a quarter in 2003 (23 percent) said they don't know. Only somewhat over a quarter (28 percent in 2002 and 29 percent in 2003) answered in the affirmative. This question was also not asked in 2001.

EXTENT TO WHICH RESPONDENTS LIVE IN A WATERSHED

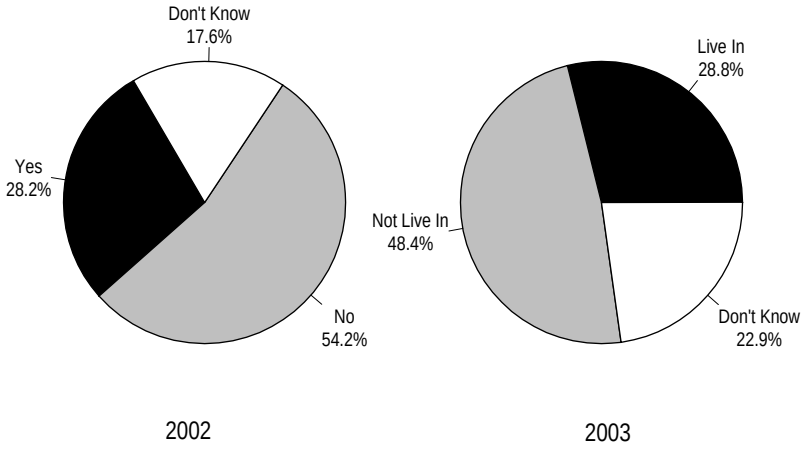


Figure 22

STORM DRAINS

Figure 23 demonstrates that half of respondents in 2001 (50 percent) and over two-fifths of respondents in 2002 and 2003 (43 and 41 percent) 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

18. As this table indicates, the largest groups of respondents (42, 40, and 36 percent) said they know that things entering storm drains go to waterways without being treated. Close to one in five (18, 17, 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, 19, and 26 percent) said they didn't know whether the contents are treated or not.

AWARENESS OF SAN DIEGO'S STORM DRAIN SYSTEM

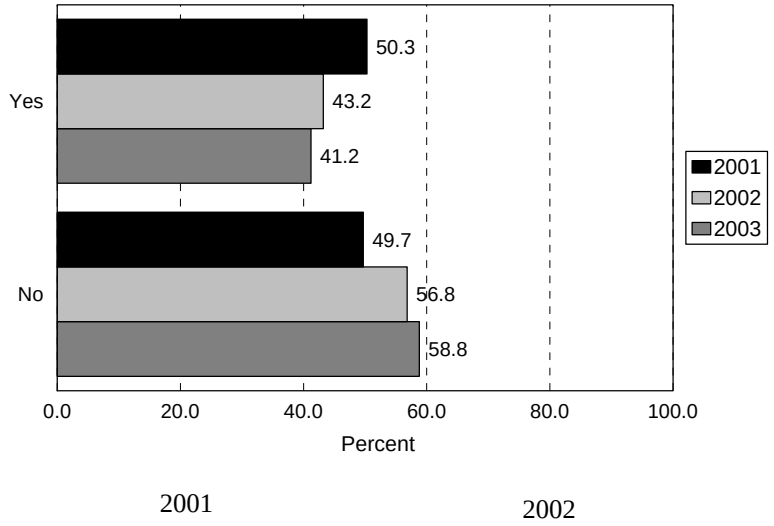


Figure 23

Table 18

WHERE THINGS THAT ENTER THE STORM DRAINS GO

	2001	2002	2003
	Percent		
Treatment Plant	4.5	2.7	1.6
To Waterway But Treated First	13.8	14.6	15.2
To Waterway But Not Treated	41.8	39.5	35.6
To Waterway, Not Sure If Treated	16.5	18.8	26.0
To Sewer	-	-	1.2
Other	2.3	4.4	9.4

Don't Know	21.2	20.0	11.0

"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 in 2002 and 2003 (45 and 47 percent), which is a statistically significant change.

AWARENESS OF THE SLOGAN "THINK BLUE"

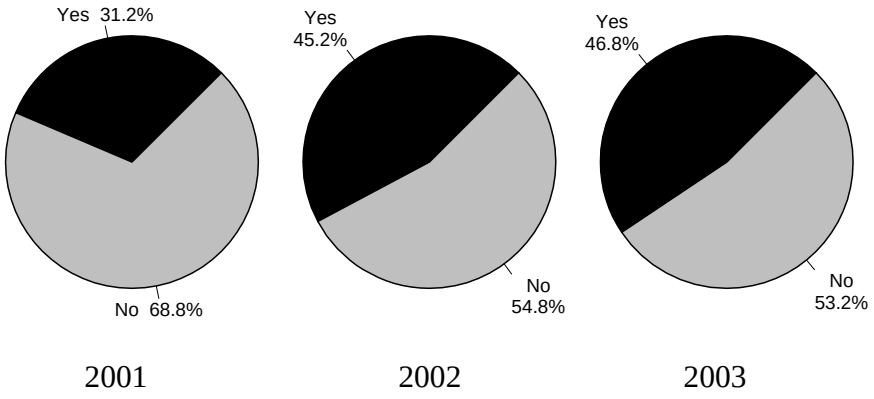


Figure 24

Places where people said they had heard the "Think Blue" slogan are displayed in Table 19 (media in general) and in Tables 20 and 21 (specific media). None of these questions were asked in 2001.

Most likely to be mentioned in 2002 and 2003 (49 and 32 percent) was a place not listed in the questionnaire. Also likely to be mentioned in general in 2002 and 2003 was television (25 and 24 percent). These were followed by both television and radio (12 percent in 2002 and 22 percent in 2003) and radio (10 percent in 2002 and 12 percent in 2003).

Table 19

WHERE RESPONDENTS HEARD THE "THINK BLUE" SLOGAN

	2002	2003
	Percent	
Radio	10.4	11.5
Television	24.6	23.5
Both Radio and Television	12.0	21.5
Radio and Bumper Sticker	.5	-
Radio and Magazine	.5	-
Other	48.6	32.0
Don't Recall	3.3	11.5

Radio stations on which respondents were most likely to have said they heard the slogan in 2003 (Table 20) were KPBS (12 percent), KBZT (5 percent), KFMB (5 percent), KOGO (5 percent), and KPOP (5 percent). The following were most widely noted in 2002: KGB (21 percent), KBZT (12 percent), and KFMB (12 percent). Television stations on which respondents were most likely to have said they heard the slogan in 2003 (Table 21) were KGTV (14 percent), KUSI (10 percent), KNSD (9 percent), and FOX (4 percent). The most prominent responses from 2002 were the following: XEWT (19 percent), KFMB (16 percent), KGTV (13 percent), and KUSI (10 percent).

Table 20

RADIO STATIONS ON WHICH RESPONDENTS HEARD THE SLOGAN ON

	2002		2003	
	Frequency	Percent	Frequency	Percent
89.5 KPBS	2	7.0	8	12.1
92.1 FM KFSD	-	-	1	1.5
92.5 FM MAGIC XHRM	4	4.7	1	1.5
93.3 FM KHTZ Channel 933	5	7.0	2	3.0
94.9 FM KBZT	6	11.6	3	4.5
100.7 FM KFMB STAR	8	11.6	3	4.5
101 FM KGB	9	20.9	1	1.5
102.1 FM KPRI SETS	10	4.7	-	-
600 AM KOGO 600 News Radio	14	9.3	3	4.5
760 AM KFMB CBS	-	-	2	3.0
1360 AM KPOP	16	2.3	3	4.5
Other	88	18.6	10	15.2
Several	89	2.3	-	-
Don't Recall	99	20.9	38	57.6

Table 21

TELEVISION STATIONS ON WHICH RESPONDENTS HEARD THE SLOGAN ON

	2002		2003	
	Frequency	Percent	Frequency	Percent
4 COX- Padres	2	3.0	1	1.1
5/69 KSWB The WB	-	-	1	1.1
6 FOX	6	9.0	4	4.4
7/39 KNSD NBC	6	9.0	8	8.9
8 TV KFMB CBS	11	16.4	5	5.6
9/51 KUSI	7	10.4	9	10.0
10 KGTV	-	13.4	13	14.4
11/15 KPBS	5	7.5	2	2.2
12 XEWT Televisa Energy Communications Espanol	13	19.4	-	-
13 UPN	1	1.5	1	1.1
24 City Cable Access	-	-	2	2.2
Other	2	3.0	2	2.2
Don't Recall	12	17.9	48	53.3

Meaning of the Slogan

Table 22 displays what aware respondents said when they were asked what the slogan means to them. The most prevalent answer (35, 27, and 21 percent) was keeping the water clean. This was followed by not putting things in storm drains (15, 19, and 13 percent).

Table 22

MEANING OF THE SLOGAN

	2001	2002	2003
	Percent		
Keeping the Water Clean/Clean Water/Keeping the Ocean Clean	34.8	26.8	21.0
Watch What You Throw in the Water/Be Careful What You Throw Into the Ocean/Don't Pollute the Water	4.3	12.6	10.5
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	12.5
Keep Things Clean/Keep Our Drain as Clean as Possible/To Try to Keep Clean	7.2	2.2	1.5
Keep Our Beaches and Bays Clean by Being Pollution Free/Don't Pollute/Stop Polluting	5.8	6.6	7.5
Don't Be Polluting the Air/Clean Air	7.2	4.9	6.0
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	12.5
Keep the Water Clear	5.8	1.6	1.0
Keep the Water Blue	10.9	4.4	7.5
Environmentally Healthy/Think Healthy as far as the Environment Goes	-	3.8	6.0
Think About the Ocean and Take Care of It	-	4.9	5.0
Protect the Water	-	2.2	2.0
Think of the Water or Ocean/Think of Blue Water	-	2.7	1.5
Help Save the Fish/Think About the Animals and Sea Life	-	2.2	1.5
Pay More Attention to Not Littering	-	.5	4.0
Watch Your Water Waste/Be Aware of Water Waste	-	1.1	2.5
No Drainage From Cars/Not to Drain Car Fluids Down the Drain	-	1.1	1.5
Keep the Sky Blue	-	-	1.0
To Recycle	-	-	.5
Nothing	1.4	-	1.0
Other	14.5	19.1	9.0
Don't Know/Don't Recall	8.0	4.9	4.5

Reactions

As Figure 25 indicates, the majority of aware respondents (54 percent in 2001 and 2002; 53 percent in 2003) said their general reactions to the "Think Blue" slogan were very positive. In addition, over a third (36 percent in 2001 and 2002; 38 percent in 2003) said their reactions were somewhat positive. When summed, these figures total nine in ten (90 percent in 2001 and 2002; 91 percent in 2003). There were no very negative reactions to the slogan in any year.

REACTIONS TO THE SLOGAN

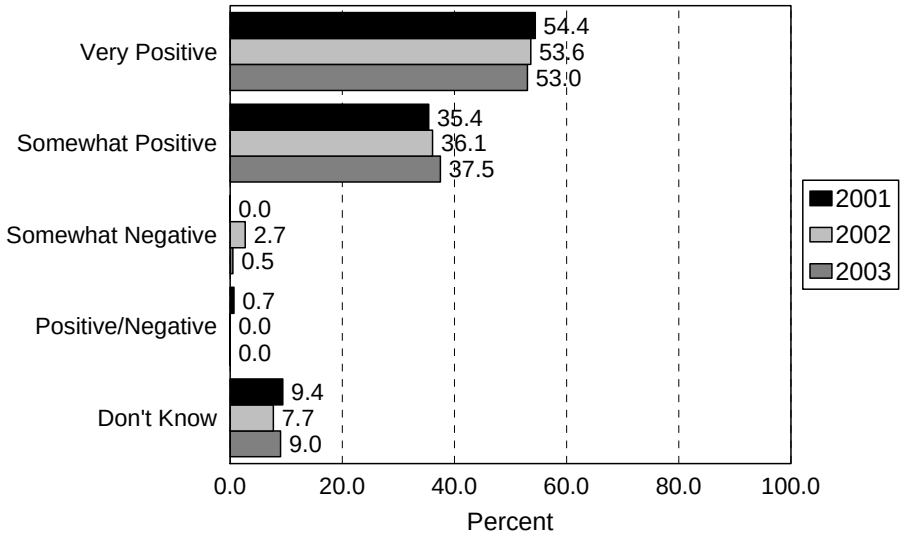


Figure 25

INFORMATION SOURCES

Figure 26 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, 3.24 in 2002, and 3.23 in 2003), mailed to respondents' homes (3.13, 2.96, and 2.96), and on the radio (3.05, 2.95, and 2.92).

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

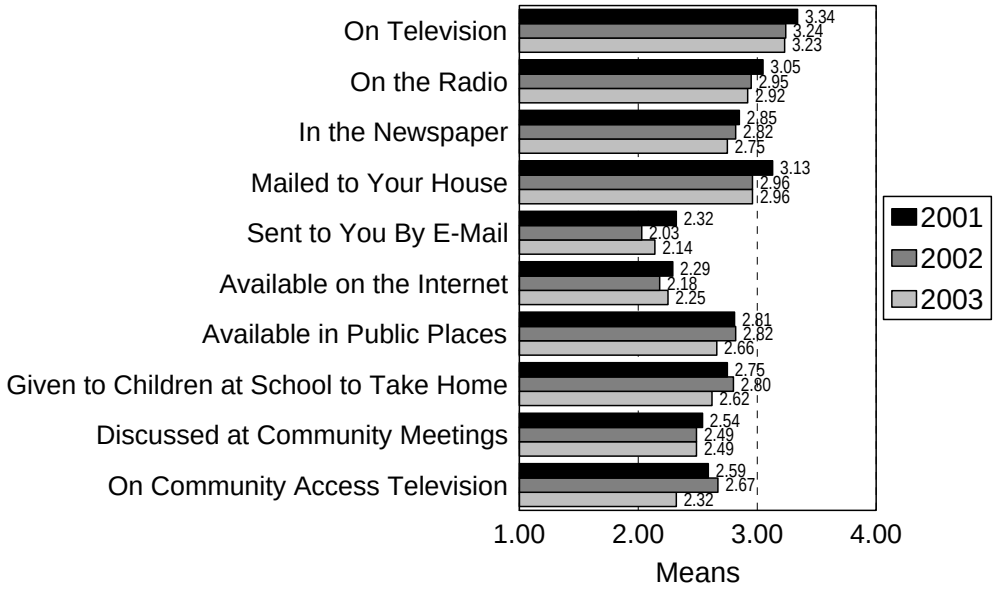


Figure 26

RESPONDENT DEMOGRAPHICS

Tables 23 through 27 and Figures 27 and 28 portray the demographics of the responding sample. These illustrations indicate the following.

- The majority of respondents (55 percent in 2001, 51 percent in 2002, and 55 percent in 2003) live in single-family homes, while about a third (35, 37, and 34 percent) live in apartments or condominiums.

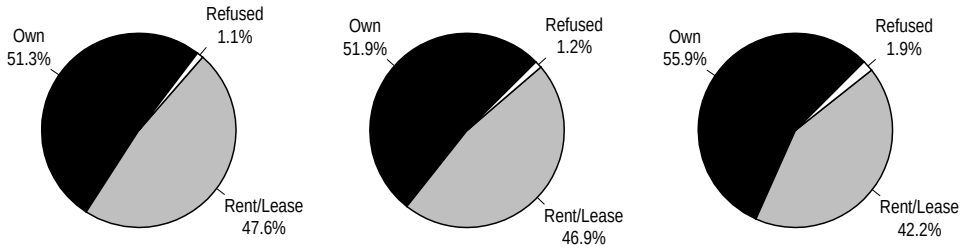
Table 23

TYPE OF RESIDENCE

	2001	2002	2003
	Percent		
Single Family	54.9	50.6	55.3
Duplex/Triplex	5.2	4.0	4.0
Townhouse	4.3	6.4	4.7
Apartment/Condominium	34.8	36.8	34.4
Live in Recreational Vehicle	.2	1.2	-
Refused	.7	1.0	1.6

- Over half of respondents (51, 52, and 56 percent) own their homes.

HOME OWNERSHIP STATUS



2001 2002 2003

Figure 27

- The largest groups of respondents (38, 40, and 45 percent) have a four-year degree or more education; between somewhat over two-thirds and three-quarters (69, 75, and 76 percent) have at least some college.

Table 24

EDUCATIONAL ATTAINMENT

	2001	2002	2003
	Percent		
Less Than High School	7.4	4.2	3.3
High School Graduate	21.7	18.3	17.6
Vocational/Trade Certificate	.5	1.5	.7
Some College	13.5	22.2	19.9
Two-Year Degree	16.9	13.1	11.9
Four-Year Degree or Higher	38.1	39.5	44.5
Refused	1.8	1.2	2.1

- Most respondents (65, 64 and 58 percent) are between the ages of 25 and 54, with the largest single group in 2001 and 2002 (25 and 24 percent) being those aged 25 to 34. In 2003, the largest group of respondents (22 percent) are those aged 35 to 44.

Table 25

AGE

	2001	2002	2003
	Percent		
18 to 24	11.5	10.9	11.7
25 to 34	25.3	24.0	19.2
35 to 44	21.2	20.5	21.5
45 to 54	18.7	19.3	16.9
55 to 64	9.0	12.6	13.1
65 and Over	11.3	9.6	12.9
Refused	2.9	3.2	4.7

- Over three-fifths of respondents (61, 63, and 69 percent) are Caucasian. Almost one in five (19 percent) in 2001 and around one in ten in 2002 and 2003 (14 and 11 percent) are Hispanic.

Table 26

ETHNICITY

	2001	2002	2003
	Percent		
Caucasian/White	60.7	63.2	69.1
African-American	5.6	3.0	4.0
Asian/Pacific Islander	4.5	4.4	4.9
Latino/Hispanic	19.4	13.8	10.8
Other	7.0	9.6	5.9
Refused	2.7	5.9	5.4

- In 2001, the largest group of respondents (25 percent) had household incomes of $25,000 to $49,999; the largest category in 2002 and 2003 was $75,000 or more (26 and 30 percent). Incomes of $50,000 or more account for around two-fifths of respondents (40, 44, and 45 percent).

Table 27

HOUSEHOLD INCOME

	2001	2002	2003
	Percent		
Under $25,000	14.9	16.0	13.8
$25,000 - $49,999	24.6	24.5	23.7
$50,000 - $74,999	19.9	18.5	15.0
$75,000 or More	20.3	25.9	30.0
Don't Know	3.4	4.0	4.9
Refused	16.9	11.1	12.6

- Slightly more than half of respondents in 2001 (53 percent) were men; slightly more than half in 2002 and 2003 (53 and 51 percent) are women.

GENDER

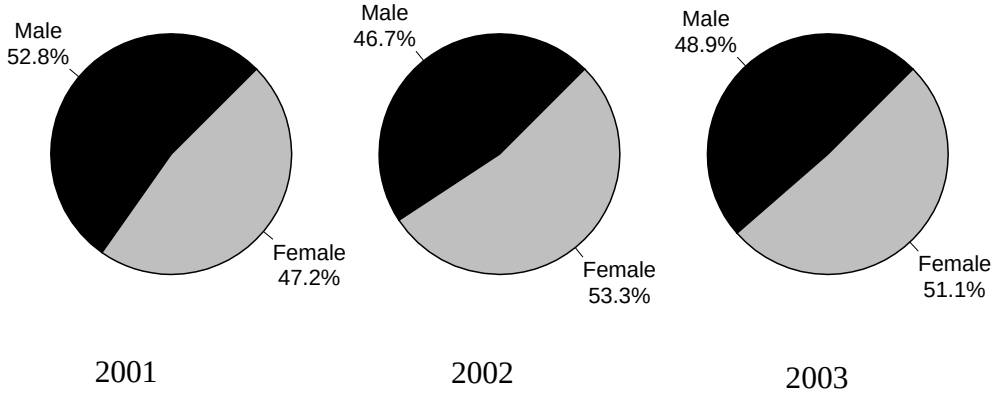


Figure 28

IV. CONCLUSIONS AND RECOMMENDATIONS

According to the City of San Diego's Storm Water Pollution Prevention Program, the goals for its 2002-2003 public information campaign were identical to those for 2001-2002. The three main objectives of the program were as follows:

- 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

Because of budget cuts in 2002-2003, however, program representatives indicated that not losing ground would be a sufficient accomplishment that year.

From the results of this research, it would appear that two out of three expectations have been exceeded. Two behaviors actually appear to have changed: there has been a dramatic increase, by almost 9 percent, in the number of those who recycle leftover paint, and there has also been an increase in the number of those who recycle radiator fluid.

Also worth noting in this regard, 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 further effort in the area of public education may be successful in achieving the original program objectives.

Awareness of the "Think Blue" slogan increased quite dramatically in 2002. In 2003, moreover, awareness increased by another two percentage points. Finally, awareness of what happens to things that go into storm drains remained essentially static between 2002 and 2003, meeting but not exceeding expectations.

Another result of notable importance is the reported exposure to the program's slogan through other forms of advertising. This may suggest that television and radio advertisements are not reaching the public or are not noticeable, where other types of

advertising are. The program may therefore, wish to consider putting greater emphasis on these other media. Because repeated exposure to advertising is one of the predictors of positive results, 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