

# 2018 San Diego County Regional Stormwater Survey

## Findings from Public Opinion Research



San Diego County Regional Co-Permittees  
Education and Outreach Workgroup



3630 Ocean Ranch Boulevard  
Oceanside, CA 92056

**Updated:** January 28, 2019



## TABLE OF CONTENTS

Table of Contents .....	ii
Table of Tables .....	ii
Table of Figures .....	iii
Methodology.....	1
Purpose .....	1
Procedure.....	1
Survey Design.....	2
Participant Characteristics and Regional Behaviors.....	2
Detailed Findings.....	3
Overview of the Report.....	3
Watersheds and Storm Drains .....	5
Awareness of Pollutants .....	8
Yard Structure and Behaviors .....	13
Outdoor Clean-Up Behaviors .....	16
Litter Behaviors .....	17
Pet Waste Behaviors .....	18
<i>Project Clean Water</i> Awareness and Communication .....	19
Conclusions and Recommendations .....	21
General Conclusions.....	21
Recommendations for Messaging and Future Outreach.....	23
Appendix A: Topline Results .....	24
Appendix B: 2015 – 2018 Survey Comparisons .....	31

## TABLE OF TABLES

Table 1. Participant Characteristics .....	2
Table 2. Knowledge of Living in a Watershed by Gender, Age, and Education .....	6
Table 3: Knowledge of Living in a Watershed by Race .....	6
Table 4: Knowledge about Storm Water Treatment by Gender.....	7
Table 5: Knowledge about Stormwater Treatment by Level of Education.....	7
Table 6. Mean Scores of Pollution Sources by Age .....	9
Table 7. Behavior Change by Age.....	11

## TABLE OF FIGURES

Figure 1. Watershed of Residence .....	3
Figure 2. Knowledge of Living in a Watershed.....	5
Figure 3. Sources of Stormwater Pollution .....	8
Figure 4. Pollution Sources Mean Scores.....	9
Figure 5. How much does Pollution of Local Waterways Affect you and Your Family? .....	10
Figure 6. One Thing You Can Do .....	12
Figure 7. Responsibility for Maintaining Yards or Gardens .....	13
Figure 8. How Excess Water Runs off Property .....	14
Figure 9. Use of Fertilizer in the Past Year .....	14
Figure 10. Use of Pesticides or Other Chemicals .....	15
Figure 11. How Swept up Materials are Disposed Of .....	16
Figure 12. Percentage of Respondents Who Littered Items in the Past Month.....	17
Figure 13. Where Dogs Leave Their Waste .....	18
Figure 14. How Often Dog Waste is Picked Up.....	18
Figure 15. Where to Look for Information about Preventing Water Runoff Pollution.....	19
Figure 16. Most Convenient Method to Report Polluting Activity .....	20



## METHODOLOGY

### PURPOSE

---

This telephone survey was conducted on the behalf of the San Diego Regional Co-Permittee's Educational and Residential Services (ERS) Workgroup, a coalition of cities, the County, and other co-permittees that are charged with preventing and reducing stormwater pollution in San Diego County. The purpose of this survey was to measure awareness of the issue of and behaviors that impact stormwater pollution. This survey was preceded by similar surveys conducted in June 2009, May 2011, and May 2015. The results of this study will be used to create messaging to promote pollution prevention behaviors.

### PROCEDURE

---

A total of 500 interviews with adult residents across San Diego County were conducted via telephone between November 7 and 25, 2018. (Prior surveys had sample sizes of 800.) The study used a random-digit-dial, dual-frame methodology, in which a random list of all active residential and wireless telephone numbers in San Diego County were included in the sample. Of the 500 completed interviews, 85% were completed with residents on wireless telephones and 14% were conducted in Spanish. (In 2015, 40% were completed on wireless telephones and 5% were completed in Spanish.)

The margin of error for countywide results is plus or minus 4.3% at a 95% confidence level. That is, if this survey were to be repeated exactly as conducted, then 95 out of 100 times the responses from the sample (expressed as proportions) would be within 4.3% of the actual population proportions.

Survey results are presented in aggregate and by subgroups of adult residents (e.g., by gender or race) only if the differences are both statistically significant and meaningful for program evaluation and planning purposes. The behaviors of interest have evolved in response to current pollution concerns; therefore, some survey items from the 2015 administration have been removed and replaced with more relevant items. Where appropriate, results from this survey are compared with those from the surveys conducted in 2009, 2011, and 2015, which included the identical item. In addition, the sample size reduction (800 to 500), along with a large increase in cell-phone only households (40% to 85%), make some comparisons difficult to assess.

## SURVEY DESIGN

---

The survey was designed to assess the following topics:

- Knowledge about watersheds and the storm drain system;
- Knowledge of sources of pollution that flow into storm drains;
- Yard behaviors;
- Outdoor clean-up behaviors;
- Litter behaviors;
- Pet-waste disposal behaviors;
- Concerns about water pollution;
- Self-reported behavior changes to reduce water pollution;
- Awareness of Program Clean Water; and
- Awareness of and preferences for communication and reporting channels.

## PARTICIPANT CHARACTERISTICS AND REGIONAL BEHAVIORS

---

The following table displays the demographic characteristics of the survey respondents.

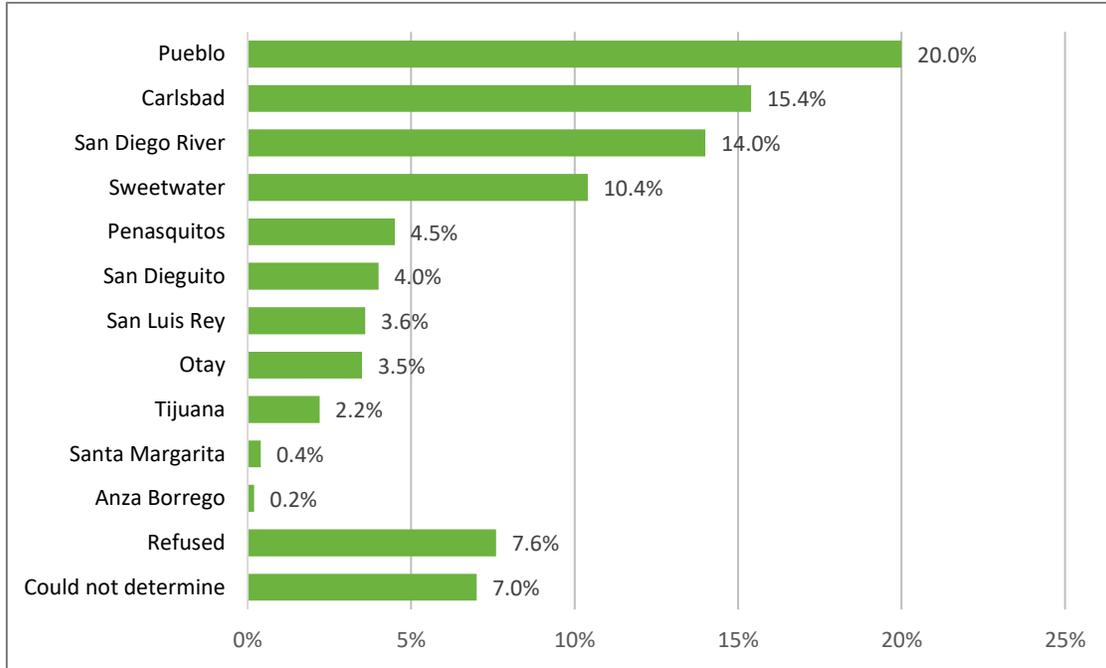
**Table 1. Participant Characteristics**

Characteristics	Results
Home Ownership:	Own (50%); Rent (50%)
Residence Type:	Single-family (52%); Multi-family (48%)
Urbanicity:	Urban (40%); Suburban (44%); Rural (16%)
Age:	Mean = 48; Range 18-95
Education:	Bachelor's Degree or higher (35%); Some college or Associate Degree (31%); High school graduate (23%); Less than high school graduate (11%).
Gender:	Female (42%); Male (58%)
Race:	Hispanic or Latino Decent (36%) American Indian or Alaskan Native (2%); Asian or Asian American (8%); Black or African American (5%); White or Caucasian (69%); Mixed race/ethnicity (14%); Other (2%).

**Visits to Local Bodies of Water.** Three-fourths of respondents (74%) stated they visited a beach and 37% visited a lake or river in the past year.

**Watershed of Residence.** Residents were asked to provide the nearest cross-streets, or the closest park or school, to their residence for the purpose of determining the watershed in which they reside. Results are shown in Figure 1.

**Figure 1. Watershed of Residence**



## DETAILED FINDINGS

### OVERVIEW OF THE REPORT

---

This report presents the survey results as follows:

**Watersheds and Storm Drains.** The report begins with an assessment of the public’s familiarity with watersheds and the storm drain system. Residents were asked if they live in a watershed, if they had heard the term *storm drain*, and whether water entering the storm drain system goes to a treatment plant or not.

**Awareness of Pollutants.** Next is an assessment of the public’s general and specific knowledge of the sources of pollutants. Respondents were asked to name one or two major sources of pollution. In addition, they were asked the extent to which specific materials contribute to pollution of local creeks, rivers, and the ocean.

**Concern about Pollution.** Concerns were assessed by asking respondents about the degree to which they believe pollution affects them and if their concerns kept them out of the local waterways.

**Behavior Changes to Prevent Pollution.** Pollution prevention was assessed by asking respondents if they made behavior changes as a result of seeing or hearing information about how polluted water affects

local waterways. In addition, respondents were asked to name one thing they could do to prevent storm water pollution.

**Yard Structure and Behaviors.** Respondents were asked about who has responsibility for maintaining the yard and garden, whether they have automatic sprinklers, and how excess water runs off their property. Respondents were asked about their use of fertilizers and pesticides in the past year.

**Outdoor Clean-Up Behaviors.** This section is an assessment of how driveways and off-street parking areas are cleaned, as well as car washing practices in the past three months.

**Litter Behaviors.** Behaviors were assessed by asking respondents about four specific materials they may have dropped, left behind, or tossed in the past month.

**Pet Waste Behaviors.** Respondents were asked about the number of dogs in the household, where dogs typically leave their waste, how often they pick up waste, and where waste is placed when the dog goes while on a walk.

**Project Clean Water Awareness and Communication.** Respondents were asked if they had heard of Project Clean Water and the substance of the program. Respondents were also how they would seek information about preventing water runoff pollution, if they had heard about a pollution prevention telephone hotline, and how they would respond to report someone engaging in a polluting behavior.

## WATERSHEDS AND STORM DRAINS

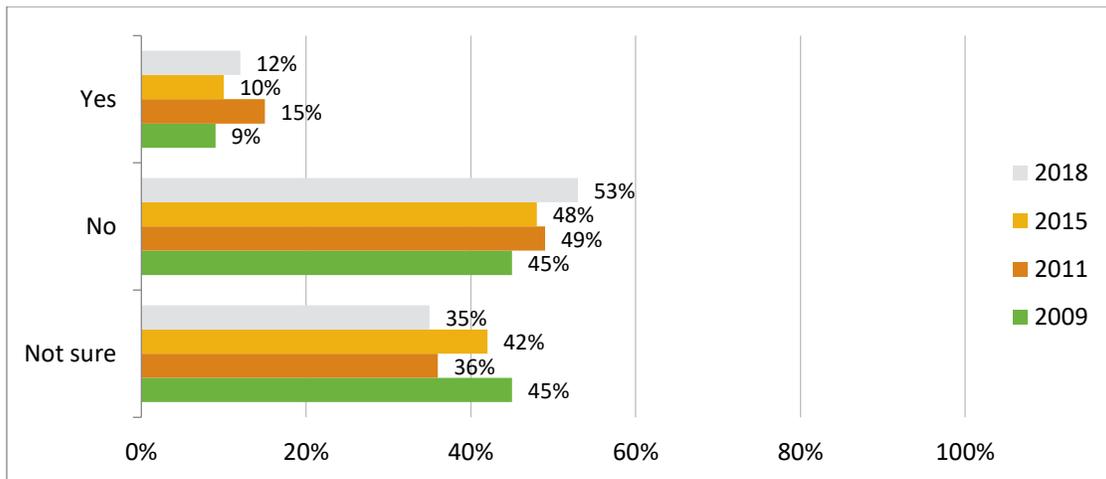
San Diego County is made up of multiple watersheds which cover all residential areas in the County. This section of the survey was designed to determine the percentage of San Diego County residents who know that they live in a watershed, and to find out how knowledgeable they are about storm drains and the water that flows into them. In addition, respondents were asked to name one or two major sources of stormwater pollution.

### WATERSHED KNOWLEDGE

*As far as you know, do you live in a watershed or not?*

Slightly more than one in ten respondents (12%) knew they lived in a watershed, while just over half (53%) incorrectly answered that they did not live in a watershed. Thirty-five percent (35%) stated they were unsure. See Figure 2.

**Figure 2. Knowledge of Living in a Watershed**



Note: 2018 N=500, 2015 N=800, 2011 N=801, 2009 N=808

The percentage of respondents who knew they lived in a watershed increased slightly from findings in 2015. However, the percentage of respondents who incorrectly answered that they did not live in a watershed also increased.

There were significant differences between groups for knowledge of living in a watershed. See Table 2 and Table 3.

**Table 2. Knowledge of Living in a Watershed by Gender, Age, and Education**

	Gender		Age			Education	
	Men	Women	18-39	40-59	60 & Over	College Graduate	No College Degree
Yes	13%	10%	10%	11%	16%	16%	8%
No	57%	48%	60%	50%	44%	49%	56%
Not Sure	30%	42%	30%	39%	40%	35%	36%

**Gender.** Men were more likely to know they lived in a watershed than were women, with more women reporting that they were not sure.

**Age.** Among the different age groups, those 60 years and older were more likely to know they lived in a watershed than those younger than 60 years.

**Education.** Respondents with college degrees were twice as likely to know they lived in a watershed than those who did not have a college degree.

**Table 3: Knowledge of Living in a Watershed by Race**

	Mixed Ethnicity	Native American	White or Caucasian	Something Else	Asian or Asian-American	Black or African-American
Yes	16%	14%	13%	5%	5%	4%
No	49%	57%	50%	58%	74%	57%
Not Sure	35%	29%	37%	37%	21%	39%

**Race.** Respondents that were of mixed ethnicity, Native American, or White or Caucasian were far more likely to know that they live in a watershed than those of other races.

**KNOWLEDGE OF THE TERM *STORM DRAIN***

Participants were asked if they had heard the term *storm drain* before. The majority (80%) had heard the term, 20% had not, and fewer than 1% were not sure.

**KNOWLEDGE THAT STORM WATER IS NOT TREATED**

*When water goes into the storm drains in your area, does it go to a sewage treatment plant before it is released, or is it released into local waterways or the ocean without treatment?*

The majority (61%) answered that they were not sure, and 13% incorrectly reported that stormwater goes to a treatment plant. Only 26% of participants correctly answered that stormwater reaches local waterways and the ocean without treatment. Although this percentage is consistent with the 2015 findings, it is much lower than that of the 2011 study as shown in Table 4.

**Table 4: Knowledge about Storm Water Treatment by Gender**

	All Residents			Men			Women		
	<b>2018</b>	2015	2011	<b>2018</b>	2015	2011	<b>2018</b>	2015	2011
Not treated	<b>26%</b>	25%	43%	<b>31%</b>	31%	47%	<b>19%</b>	20%	40%
Treated	<b>13%</b>	10%	12%	<b>13%</b>	11%	12%	<b>12%</b>	8%	12%
Not Sure	<b>61%</b>	65%	45%	<b>56%</b>	58%	41%	<b>69%</b>	72%	47%

**Gender.** Men were more likely to correctly report that storm water is not treated (31%) compared to women (19%). However, much of this is accounted for by a higher incidence of women reporting that they are uncertain.

There was no relationship between knowledge of living in a watershed and knowing that storm water is released into waterways untreated.

**Table 5: Knowledge about Stormwater Treatment by Level of Education**

	All Residents			College Graduates			No College Degree		
	<b>2018</b>	2015	2011	<b>2018</b>	2015	2011	<b>2018</b>	2015	2011
Not treated	<b>26%</b>	25%	43%	<b>34%</b>	30%	49%	<b>21%</b>	22%	41%
Treated	<b>13%</b>	10%	12%	<b>17%</b>	8%	16%	<b>10%</b>	11%	11%
Not Sure	<b>61%</b>	65%	45%	<b>49%</b>	62%	35%	<b>69%</b>	67%	47%

**Education.** Residents who were college graduates were slightly more likely to know that stormwater is not treated than residents not possessing a college degree. Although the percentage of residents in both groups correctly answering this question increased from the study done in 2015, the percentage was still lower than the 2011 study.

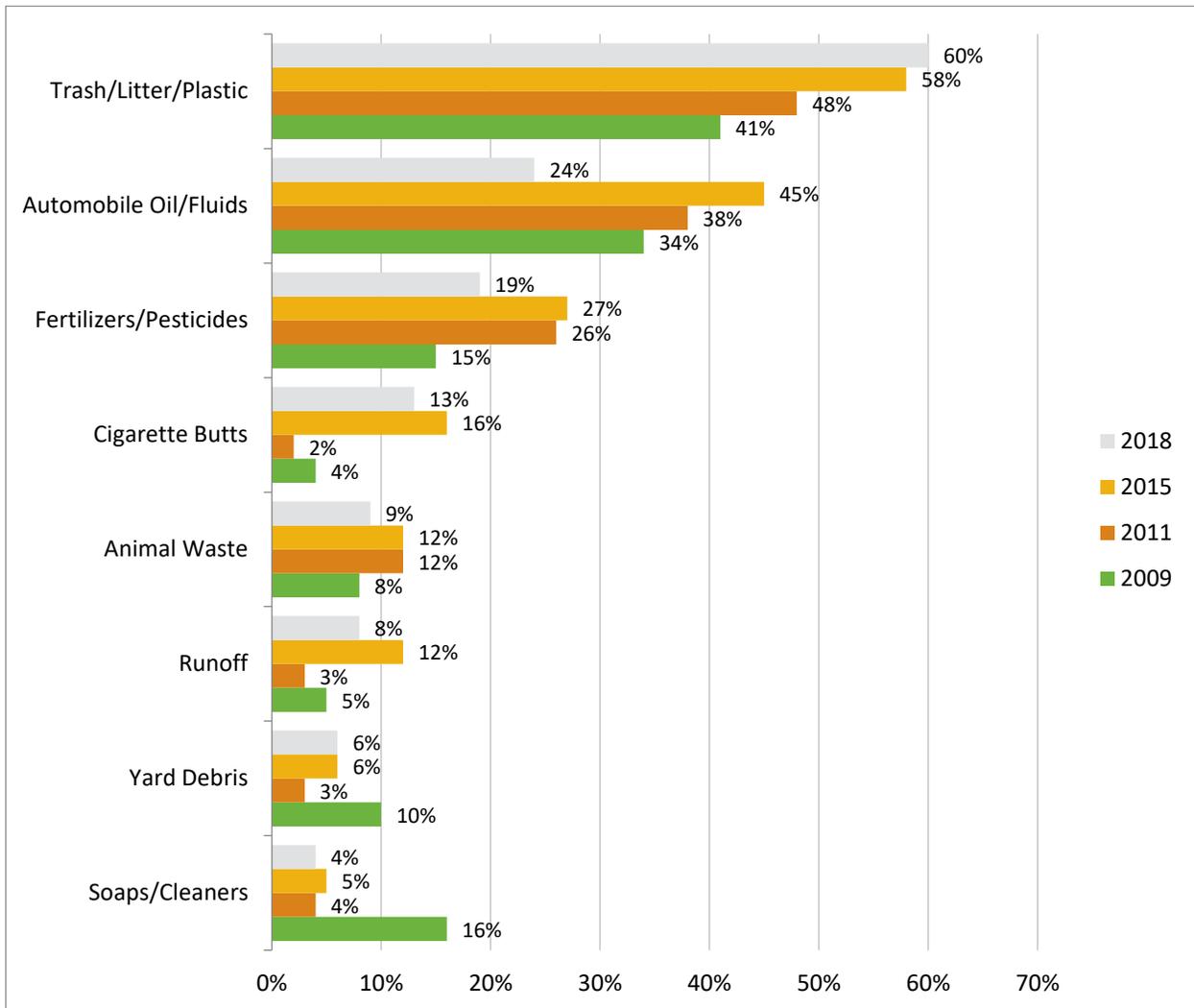
## AWARENESS OF POLLUTANTS

### VOLUNTEERED POLLUTION SOURCES

*From what you know or may have heard, what are one or two major sources of pollution in storm drains?*

Respondents were asked to name one or two major sources of pollution in storm drains. A total of 403 participants (81%) provided a response. Figure 3 shows the pollutants mentioned.

**Figure 3. Sources of Stormwater Pollution**



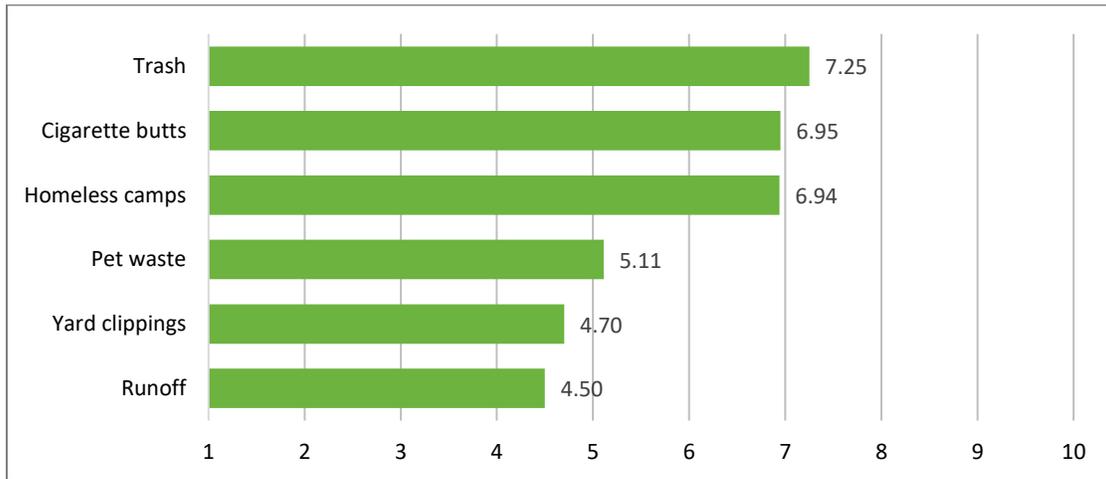
Note: 2018 N=403, 2015 N=634, 2011 N=753, 2009 N=719. Respondents could provide more than one pollution source, so percentages do not sum to 100%.

Litter, automotive fluids, fertilizers, and pesticides remain the top mentioned sources of pollution.

### STATED POLLUTION SOURCES

Respondents were asked how much they believe each item on a short list of items contributed to the pollution of local waterways, using a scale from 1, *not at all*, to 10, *a lot*. Mean scores are presented in Figure 4.

Figure 4. Pollution Sources Mean Scores



**Gender.** In general, women rated these items as being higher contributors to pollution than men did, with leaves and grass clippings showing the most difference (men  $M=4.28$ , women  $M=5.30$ ).

**Education.** Surprisingly, respondents with no college degree rated these items as being higher contributors to pollution than those with college degrees, with leaves and grass clippings again showing the most difference (college degree  $M=4.12$ , no degree  $M=5.05$ ).

**Age.** Respondents 60 and over rated cigarette butts, trash, and runoff from property as significantly lower contributors to pollution than did the younger age groups, especially those 18-39. Mean scores for these items are shown in Table 6.

Table 6. Mean Scores of Pollution Sources by Age

Pollution Source	Age		
	18-39	40-59	60 & Over
Cigarette butts	7.89	6.57	<b>6.26</b>
Trash	7.81	7.19	<b>6.51</b>
Runoff from property	5.14	4.63	<b>3.52</b>

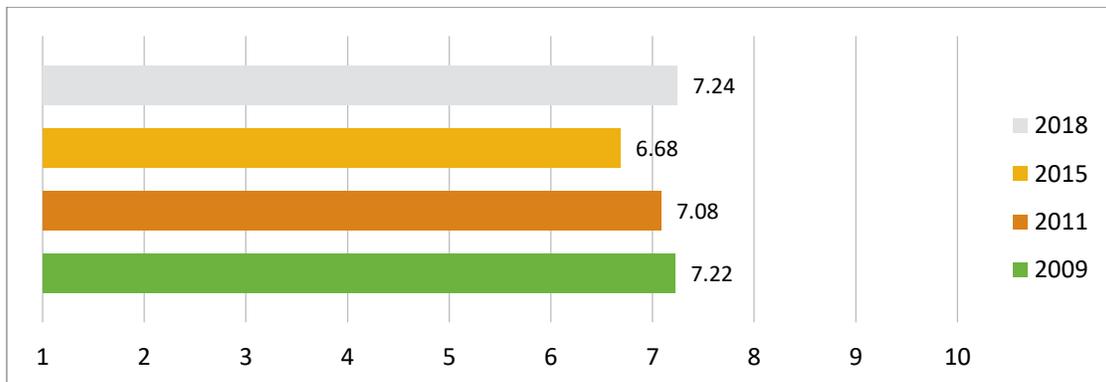
## CONCERN ABOUT POLLUTION

This section asks questions designed to determine whether residents of San Diego County feel personally affected by stormwater pollution and to what extent, if any, residents avoid going into the ocean, lakes, and rivers due to concern about polluted water.

### *How Much are You and Your Family Affected by Pollution?*

Residents were asked to rate how much the pollution of San Diego County beaches, oceans, lakes and rivers affects them using a scale from 1, *not at all*, to 10, *a great deal*. Overall, respondents believe strongly that pollution of San Diego County beaches, oceans, lakes and rivers affects them and their families. This concern is far above the mid-point (over a 7 on a 10-pt scale), and higher this year than in previous years. See Figure 5.

**Figure 5. How much does Pollution of Local Waterways Affect you and Your Family?**



Note: 2018 N=495, 2015 N=769, 2011 N=486, 2009 N=506

**Gender.** Female residents ( $M=7.67$ ) rated the effects pollution had on them significantly higher than male residents did ( $M=6.94$ ).

### *In the last year, did you avoid going into the water at the beach, lake, or river in San Diego County because you were concerned about pollution in the water?*

In order to gauge the level of impact that water pollution has on the public's use of San Diego County waterways, residents were asked if they avoided going into the water at a beach, lake, or river due to concern over pollution. Forty percent (40%) of residents stated that they had avoided going into the water at a beach, lake, or river due to concern over pollution. This is a sharp increase from 2015 where 27% of respondents reported that they avoided going into the water at the beach due to concern about pollution. However, it should be noted that in 2015 respondents were asked separately about avoiding beaches and lakes or rivers.

## BEHAVIOR CHANGES TO PREVENT POLLUTION

*In the past year, did you make any changes in your behavior that were a direct result of seeing or hearing any information about what polluted water in storm drains does to local waterways, the beaches, and the ocean?*

To measure the possible impact knowledge about water pollution has had on the behavior of San Diego County residents, we asked whether, in the past year, participants had made any changes to their behavior that were a direct result of seeing or hearing information about polluted stormwater and its effect on local waterways. Twenty-eight percent (28%) of participants said they had made changes to their behavior as a direct result of seeing information about polluted stormwater and its effect on local waterways.

**Table 7. Behavior Change by Age**

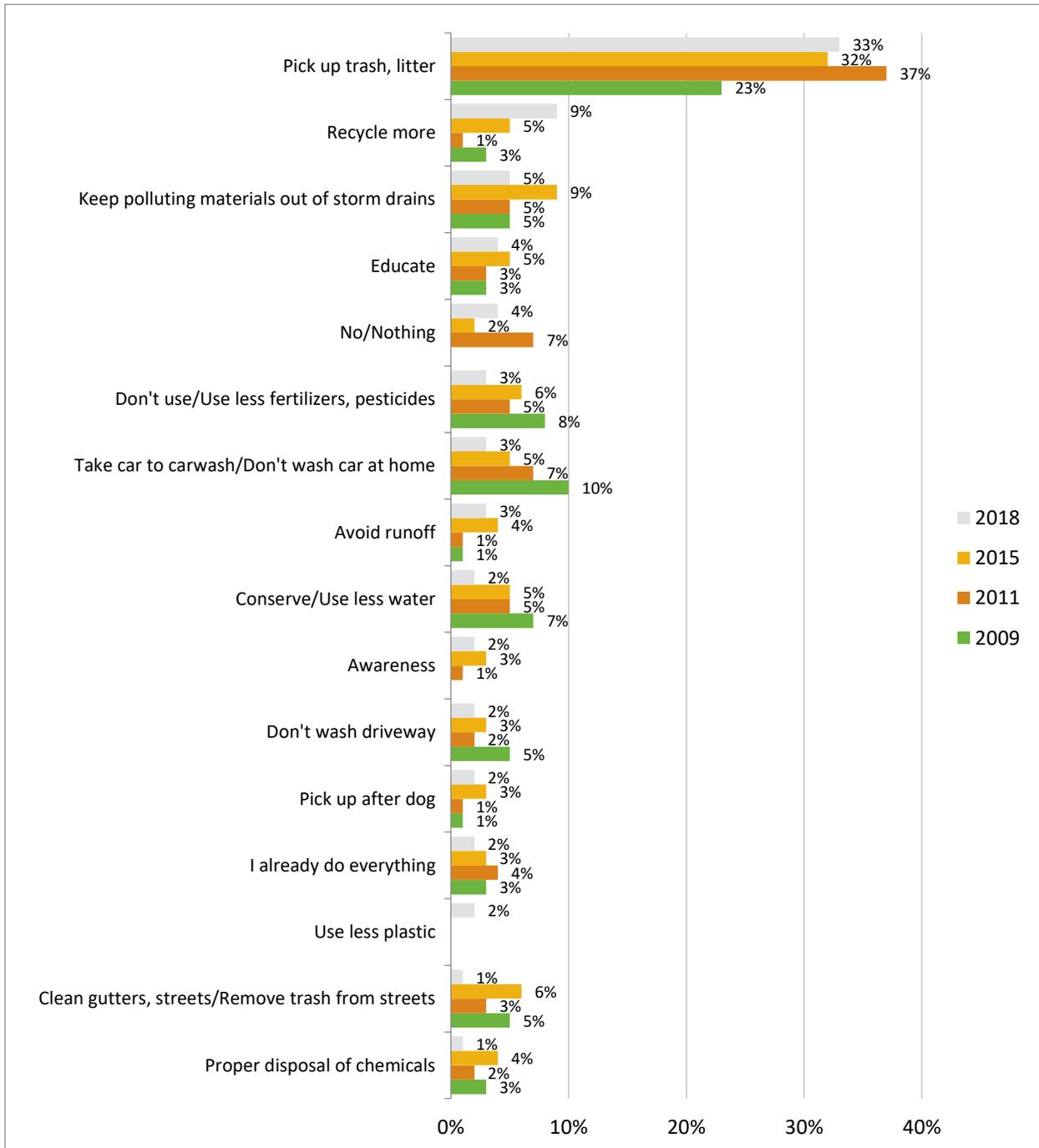
	Changed Behavior		
	18-39	40-59	60 & Over
Yes	35%	28%	18%
No	39%	56%	59%
Not Sure	26%	16%	23%

**Age.** Among the different age groups, those 18-39 years were far more likely to report having changed their behavior than older participants.

*Now, can you name one thing that you could do to help prevent storm water pollution?*

To further evaluate the public's awareness of the sources of stormwater pollution, residents were asked to name one thing they could do to help prevent stormwater pollution. A total of 403 survey participants (81% of the full sample) provided a response. Open-ended responses were categorized and are listed below in Figure 6. Consistent with previous studies, the most frequently mentioned action was *pick up trash, litter* (33%). Added to the list this year was *use less plastic*, the response from 2% of the participants.

**Figure 6. One Thing You Can Do**



Note: 2018 N=464, 2015 N=640, 2011 N=753, 2009 N=654.

## YARD STRUCTURE AND BEHAVIORS

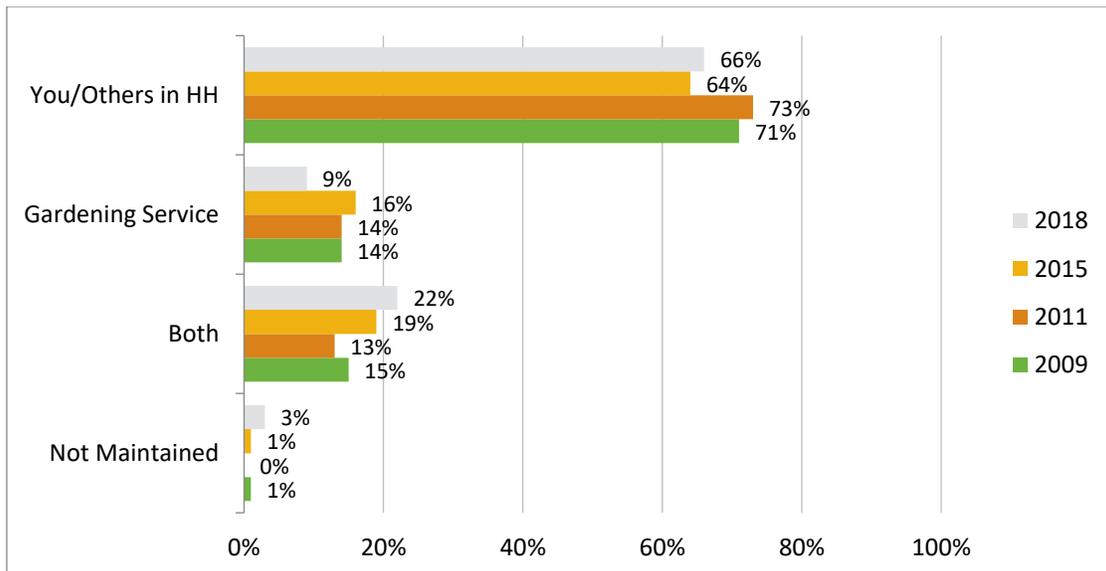
### MAINTENANCE RESPONSIBILITIES

This section measures behaviors that can affect stormwater pollution, such as allowing water to leave their property, fertilizer and pesticide use, hosing down driveways, and washing cars.

#### *Is your yard or garden maintained by you or others in your household?*

Residents were asked whether they had a yard or garden that they or someone in their household was responsible for. Just over half of participants (54%) stated that they did have a yard the household was responsible for maintaining. When asked who maintained their yard, two-thirds (66%) stated that they or other members of their household did while a gardening service was used for yard maintenance by 9% of respondents. Twenty-two percent (22%) of participants stated that members of their household and a gardening service were both responsible. See Figure 7.

**Figure 7. Responsibility for Maintaining Yards or Gardens**



Note: 2018 N=270, 2015 N=532, 2011 N=486, 2009 N=485

The overall pattern of responses was consistent with previous survey administrations, although there were fewer respondents stating that a gardening service was responsible for yard maintenance, and a slightly higher proportion of respondents reporting joint responsibility.

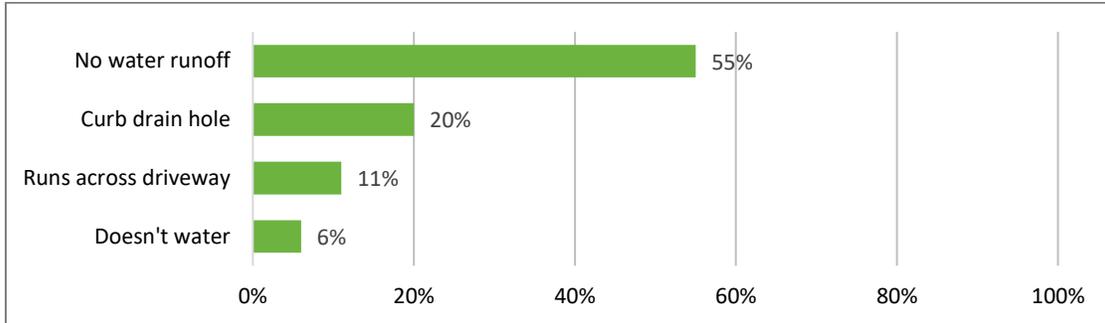
#### *Do you have an automatic sprinkler system for your yard or garden?*

Respondents who reported having a yard or garden were asked whether they had an automatic sprinkler system; 54% replied that they did.

***After watering your plants and lawn, where does any excess water run off your property?***

More than half of the participants (55%) responded that there was no water runoff from their property.

**Figure 8. How Excess Water Runs off Property**



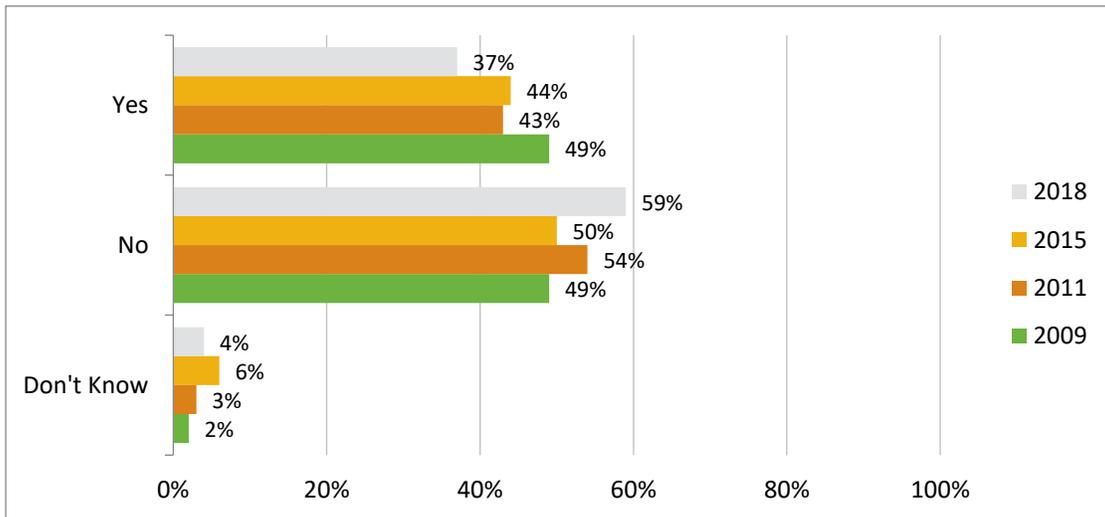
Note: N=270, 8% reported other ways water runs off their property.

**FERTILIZERS**

***In the last year or so, did any fertilizers get used on your yard or garden?***

Just over one-third of respondents (37%) stated they had used fertilizer in the last year.

**Figure 9. Use of Fertilizer in the Past Year**



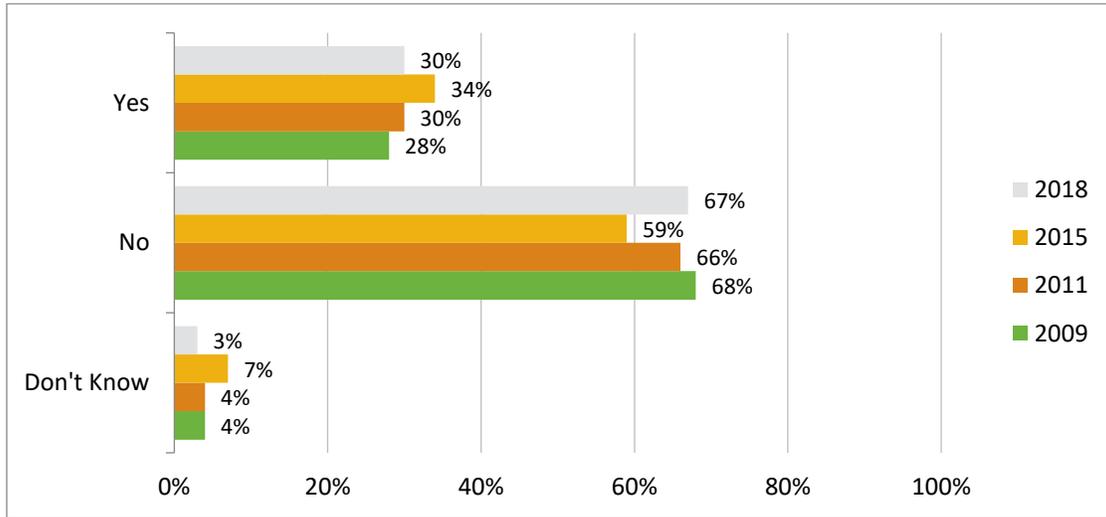
Note: 2018 N=270, 2015 N=532, 2011 N=486, 2009 N=485

**PESTICIDES**

*In the last year or so, did any pesticides or chemicals get used on your yard or garden to control insects, weeds, or plant diseases?*

Just under one-third of participants (30%) stated that these products had been used in the last year.

**Figure 10. Use of Pesticides or Other Chemicals**



Note: 2018 N=270, 2015 N=532, 2011 N=486, 2009 N=485

## OUTDOOR CLEAN-UP BEHAVIORS

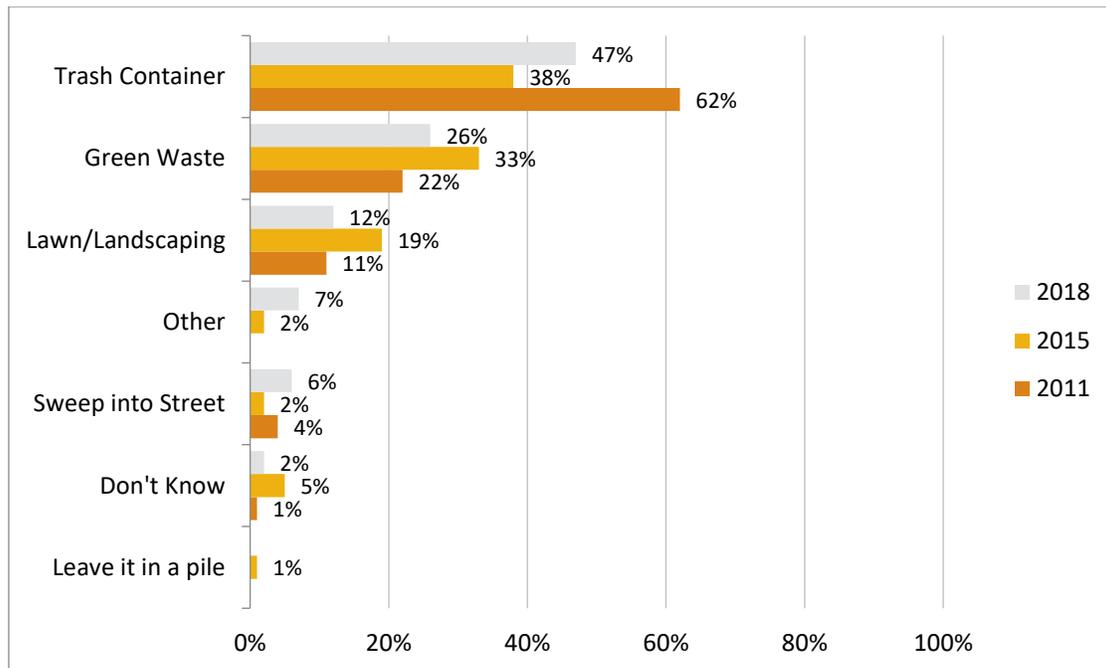
### DRIVEWAY CLEAN-UP

*Please tell me if your driveway or off-street parking area was cleaned in each of the following ways in the last year . . . sweeping it, hosing it down, blowing materials off it?*

Participants were asked if they had a driveway or off-street parking area for their home. Most respondents (82%) reported they did have a driveway or off-street parking. Of those with driveways or parking areas, almost three-fourths of the respondents (70%) stated they had cleaned their driveway by sweeping, 52% said they had used a blower, and 20% used a hose to clean their driveway (multiple responses were allowed).

Residents who reported sweeping to clean their driveway were asked how they disposed of the material that was swept up. Responses are shown in Figure 11.

**Figure 11. How Swept up Materials are Disposed Of**



Note: 2018 N=275, 2015 N=472, 2011 N=375

Far more respondents reported that they threw the materials in a trash container this year than did in the 2015 study; however, fewer reported disposing of the materials in their green waste bins or placing material on the lawn or landscaping.

## CAR WASHING

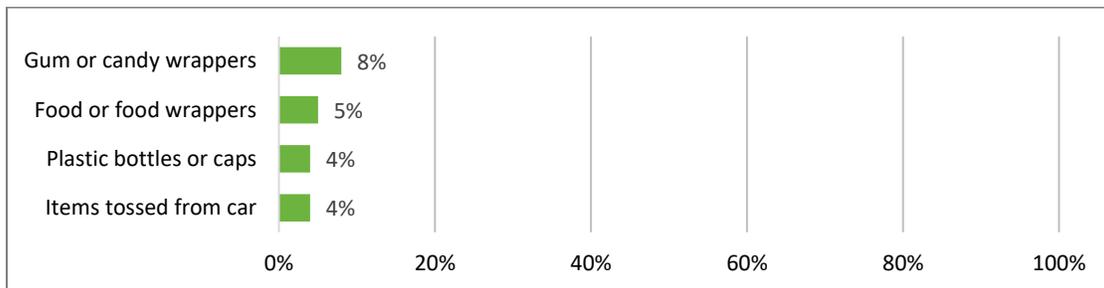
*In the past three months or so, did you wash your car at home, at a car wash, or did you use a mobile car wash service?*

Well over half of respondents (62%) reported they used a car wash, 15% stated they washed their car at home, and 8% used a mobile car wash service. Eight percent (8%) reported not washing their car, 1% did not know, and 6% stated they did not own a car. Those who washed their car at home were then asked where, specifically, to which 74% stated on their concrete driveway. Nineteen percent (19%) reported washing their car on a gravel or dirt driveway, and 7% washed their car on their lawn.

## LITTER BEHAVIORS

New to the 2018 study, participants were asked if they had, in the past month, littered small items such as gum or candy wrappers, food or food wrappers, or plastic bottles or caps. They were also asked if they had tossed anything out of a car window. The percentage of respondents who answered yes to each item was small but potentially impactful, shown in Figure 12. Interestingly, 16% of participants stated they had littered at least one of the four items listed.

**Figure 12. Percentage of Respondents Who Littered Items in the Past Month**



Note: N=500.

**Age.** Younger participants were far more likely than the other two age groups to state they had littered in the past month. Two-thirds of participants (66%) in the 18-to-39 age group, versus 22% in the 40-to-59 age group and 12% in the 60+ age group stated they littered in the past month.

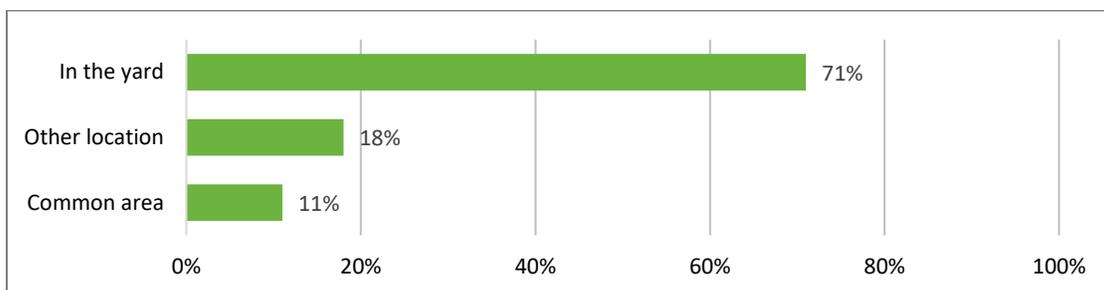
## PET WASTE BEHAVIORS

Also new to the 2018 study, participants were asked about dog ownership, with dog owners being asked follow-up questions regarding walking their dog and dog waste management. A total of 197 respondents (39%) were dog owners, with the number of dogs in the household ranging from 1 to 8 ( $M=1.7$ ).

*In general, where do your dogs leave their waste, in your yard, a common area shared by other households, or somewhere else?*

When asked where their dog's waste was usually left, almost three-fourths (71%) reported in their yard, while 11% of respondents said their dog's waste was left in a common area shared by others. Eighteen percent (18%) reported some other location, the most common being *indoors*.

Figure 13. Where Dogs Leave Their Waste

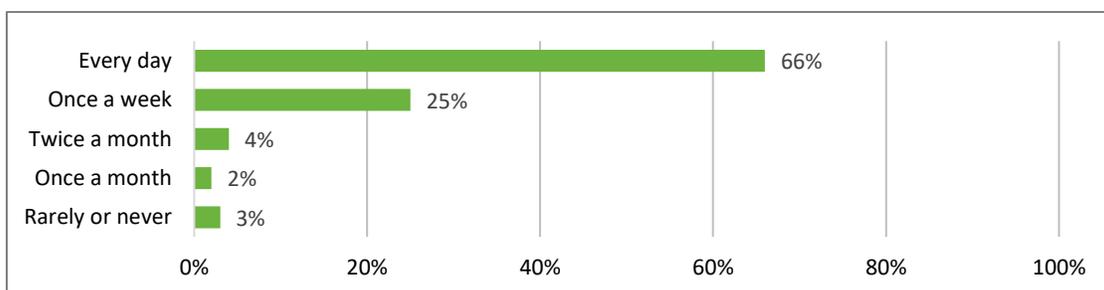


Note:  $N=197$ .

*How often do you pick up the dog waste [in your yard/common area]?*

Most dog owners (66%) reported that dog waste was cleaned up on their property daily.

Figure 14. How Often Dog Waste is Picked Up



Note:  $N=197$ .

**Walks.** Dog owners were also asked how they managed dog waste while walking their dog. Over three-fourths of respondents (82%), reported picking up their dog's waste and disposing in a trash bin on the sidewalk or trail (20%), or in the trash at home (62%), and 2% reported not picking up after their dog. Sixteen percent (16%) reported they either never had to pick up after their dog while on a walk, or that they did not walk their dog.

**PROJECT CLEAN WATER AWARENESS AND COMMUNICATION**

**PROGRAM AWARENESS**

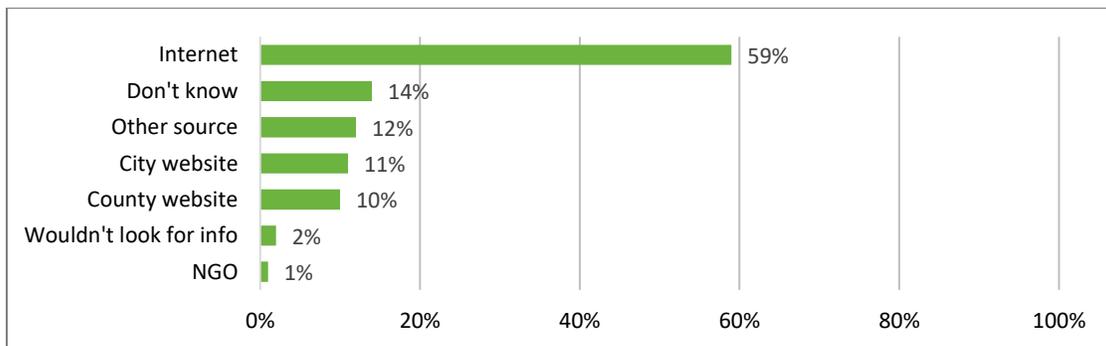
*In the past year, have you seen or heard about Project Clean Water?*

One-fourth of respondents (25%) stated they had heard of Project Clean Water. Those who stated they had heard of Project Clean were asked what they thought Project Clean Water did. This resulted in a variety of answers, most of which were incorrect program descriptions. Only 10% of the descriptions mentioned stormwater and over one-third (36%) mentioned some form of water treatment.

**INFORMATION SEEKING AND REPORTING POLLUTION-GENERATING ACTIVITIES**

*If you wanted to find information about preventing water runoff pollution, where would you look?*

**Figure 15. Where to Look for Information about Preventing Water Runoff Pollution**



Note: N=500, Respondents could give more than one answer, so percentages will not sum to 100%.

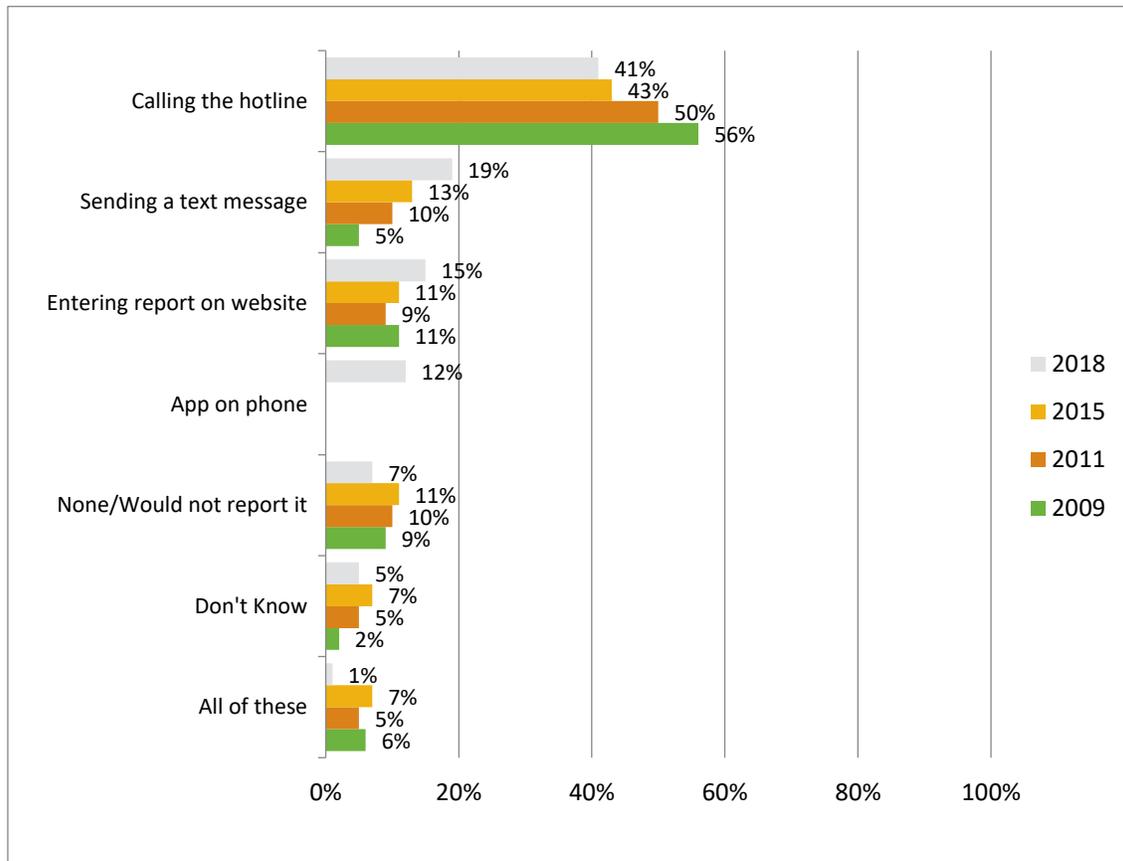
*Have you heard of a telephone hotline which can be used to get information about preventing pollution, or to report activities that may be polluting our local beaches and storm drains?*

Fewer than one-in-five respondents (15%) were aware of the hotline. This percentage is lower than that of previous studies (21% in 2015, 18% in 2011, 19% in 2009).

***If you saw someone doing something that polluted local waters, what would be the most convenient way for you to report it – assuming your name would be kept confidential?***

For this study, *with an app on phone* was added to capture the growing prevalence of cell phones. The percentage of respondents who report that *calling the hotline* would be the most convenient way continues to decrease, parallel to the continued increase in the proportion of respondents who indicated that they would prefer to *send a text message*. Interestingly, the percentage of respondents who reported that they would do nothing and not report the activity decreased.

**Figure 16. Most Convenient Method to Report Polluting Activity**



Note: 2018 N=500, 2015 N=800, 2011 N=801, 2009 N=808

## CONCLUSIONS AND RECOMMENDATIONS

### GENERAL CONCLUSIONS

---

Subject areas designated with an asterisk include new survey items.

**Watersheds and Storm Drains.** Awareness of living in a watershed continues to be very low (12%) across this administration and past administrations of the survey. Awareness of the term, *storm drain*, remains very high (80%); however, the percentage of respondents who correctly answered that stormwater goes directly to local waterways untreated (26%), has steadily fallen since the 2011 administration of the survey (25% in 2015, 43% in 2011). Importantly, nearly two-thirds (61%) are not sure if stormwater is treated or not.

**\*Awareness of Pollutants.** Awareness of common pollutants remains high. Respondents were asked to name one or two major sources of pollution (unprompted). The patterns of responses have remained consistent over past administrations of the survey with trash (60%), automobile fluids (24%), and fertilizers/pesticides (19%) mentioned most frequently. Animal waste was mentioned by 9% of respondents. When asked prompted about the extent to which a short list of items contribute to pollution of local waterways, trash, cigarette butts, and homeless camps received moderately high rating scores (7.25, 6.94, and 6.93, respectively, on a 1 to 10 scale). Pet waste received a moderate rating score of 5.11. Combined, the findings show a relatively low concern for pet waste as a pollutant, given its significance in the environment.

**Concern about Pollution.** Concerns about pollution of local waterways affecting their family was moderately high (7.24 on a 1 to 10 scale), with 40% of respondents stating they avoided local waterways over their concerns.

**Behavior Changes to Prevent Pollution.** A moderate percentage of respondents (28%) stated they had made behavior changes in the past year as a result of hearing pollution-prevention information. A greater percentage of younger respondents (35%) than older respondents (28%, 40-59 years and 18%, 60+ years) stated they changed their behavior. Picking up trash was the most common activity listed to help prevent stormwater pollution.

**Yard Structure and Behaviors.** Two-third of respondents stated they, or someone in their household, have responsibility for maintaining their yard. Of those who maintain their own yards, about half (54%) have an automatic sprinkler system. About half (55%) also stated that excess water does not runoff their property. These numbers are consistent with past survey administrations. It would be interesting to know if respondents have a routine of checking for broken or misaligned sprinklers. Use of fertilizers shows some decline over time (37%); however, use of pesticides remained about the same as past survey administrations (30%).

**Outdoor Clean-Up Behaviors.** Most respondents (82%), stated they have a driveway or off-street parking area for their home. Although a high percentage of respondents stated they sweep up to clean their driveway, about half use a blower (52%) and quite a few continue to use a hose (20%). Most

respondents (85%), stated they place the swept-up materials in the trash container, in a green-waste bin, or in the landscape. A small percentage (6%), stated they sweep materials into the street. In addition, 15% of participants with a driveway stated they washed their cars at home, but of those, a large percentage (74%), do so on a concrete driveway. These are small percentages, but in aggregate, they may still be impacting water quality.

**\*Litter Behaviors.** An alarming 8% of respondents stated they had littered gum or candy wrappers in the past month and 16% reported littering at least one of the listed items. In addition, 66% of those who stated they had littered, were under 40 years of age. Those outcomes, when generalized countywide, are impactful.

**\*Pet Waste Behaviors.** The overwhelming majority of dog owners report doing the right thing. Just over one-third of respondents stated they had a dog in the household (39%). Of households with a dog, 71% stated their dogs *go* in their own yard and most (91%) reported cleaning up dog waste daily or once a week. A high percentage of respondents (82%) reported picking up their dog's waste and disposing of it in a trash bin (either at home or on a sidewalk/trail).

***Project Clean Water Awareness and Communication.*** Awareness of Project Clean Water and its mission is low. Although 25% of respondents stated they had heard of Project Clean Water, only 10% of those respondents correctly reported the program had to do with stormwater. Over half of respondents (59%) stated they would look for water pollution prevention information on the internet. Fewer respondents than in previous studies (15%) stated they were aware of the hotline. While the pattern of responses to the most convenient method to reporting pollution activities was the same as past survey administrations, *calling* has decreased while other methods have increased (i.e., text messages, website, and using a phone app). Calling the hotline (41%), sending a text message (19%), and entering a report on a website (15%), were the most common responses.

## RECOMMENDATIONS FOR MESSAGING AND FUTURE OUTREACH

---

Overall, the findings show that countywide, residents are concerned about water pollution and can identify some significant sources. Respondent values are in a good place, but there is still room to increase knowledge of the storm drain system and increase engagement in specific behaviors to improve water quality in the region.

**Project Clean Water.** Promote awareness the Project Clean Water program and create program taglines to link the mission of the program to stormwater quality. Increase awareness of the utility of the website for community events, educational resources, reporting pollution issues, and for general inquiries about local water quality, the storm drain system, and watersheds.

As a foundation to the Project Clean Water messaging, promote that stormwater moves untreated to local waterways. Reported awareness that untreated stormwater runs directly to local waterways has been *falling* since the 2011 administration of this survey.

**Dog-Waste Behaviors.** Promote dog-waste pickup behaviors. With ongoing concerns about bacteria levels in local waterways, this behavior continues to be a good target for outreach. While self-reported dog-waste behaviors were favorable, overall respondent concerns about dog waste as a stormwater pollutant were moderate. In addition, picking up dog waste is a socially desirable behavior, so there is value in promoting a behavior that is well-accepted by dog owners and non-dog owners.

**Irrigation Runoff.** Promote routine checking for broken and misaligned sprinklers. Over half of respondents with automatic sprinklers systems stated that they do not experience water runoff on their property. From past observational research, we know that a large proportion of residents do experience runoff and their sprinklers run at a time when they are not present to witness the runoff. Target car washing and hosing behaviors after irrigation behaviors have improved. Improvement of runoff behaviors will assist the county to reach their dry-weather runoff goals.

**Trash and Litter.** Promote proper disposal behaviors. Respondents reported a high-level of concern for trash as a stormwater pollutant, yet a surprising 16% stated they had littered in the past month. Consistent with other local and national research, the self-reported littering survey item was overwhelmingly age-related; therefore, a trash and litter campaign should target young people. Respondents under the age of 40 were far more likely to report littering than the older age groups. Although, California has one of the lowest smoking rates nationally, cigarettes were rated highly as a pollutant of concern. Including proper disposal of cigarettes as a target behavior in a litter campaign is supported by these findings.

## APPENDIX A: TOPLINE RESULTS

San Diego Regional Stormwater Survey 2018

---

Numbers in red are percentages unless otherwise noted.

Hello, I'm \_\_\_\_\_ from \_\_\_\_\_. We've been asked by several cities in San Diego County to conduct a survey of local residents, and your telephone number was selected at random. We are not selling anything, and we are only interested in your opinions.

Have I reached a household, or is this a place of business?

1. HOUSEHOLD 100
2. BUSINESS [TERMINATE]
99. OTHER/REF [TERMINATE]

### ASK EVERYONE

QG. Now, do you live in the County of San Diego, or in some other county?

1. SAN DIEGO 100
2. OTHER COUNTY [TERMINATE]
3. DK/REF [TERMINATE]

QH. For statistical purposes, what is the zip code of your place of residence? **[IF RESPONDENT REFUSES SAY]** We only need it so you will be included when we represent the viewpoints of residents in each area of the county.

1. RECORD 5-DIGIT ZIP CODE **[IF ZIP NOT FOUND ON LIST, TERMINATE]**
2. IF NOT SURE RECORD 99999 [TERMINATE]
3. REF [TERMINATE]

### Program Awareness

Q1N. Now, in the past year, have you seen or heard about "Project Clean Water?"

1. YES 25
2. NO [SKIP TO Q3] 72
3. DK/REF [SKIP TO Q3] 3

Q2N. In a few words of your own, what do you think "Project Clean Water" does?

1. RECORD VERBATIM 87
2. DK/REF 13

### Outdoor Behaviors

Q3. Do you live in a single-family home, a duplex or triplex, a townhouse, or an apartment or condominium?

1. SINGLE FAMILY 51
2. DUPLEX/TRIPLEX 4
3. TOWNHOUSE 4
4. APARTMENT/CONDO 34
5. OTHER 6
6. DK/REF 1

Q4. Now, thinking about your home, is there a yard or garden that you or someone in your household are responsible for?

1. YES 54
2. NO [SKIP TO Q12] 45
3. DK/REF [SKIP TO Q12] 1

- Q5. Is your yard or garden maintained by you or others in your household? By a gardening service? Or by both household members and a gardening service together?
1. You or others in household 66
  2. Gardening service 9
  3. Both 22
  4. NOT MAINTAINED 3
  5. OTHER >1
  6. DK/REF
- Q6. Do you have an automatic sprinkler system for your yard or garden?
1. YES 54
  2. NO 46
  3. DK/REF
- Q7N. After watering your plants and lawn where does any excess water run off your property?  
[ASK OPEN-ENDED, CODE OR RECORD]
1. FROM A DRAIN OR HOLE AT THE CURB/WEEP HOLE 14
  2. FRENCH DRAINS LEAD TO A DRAIN OR HOLE AT THE CURB/WEEP HOLE 4
  3. RUNS ACROSS THE DRIVEWAY OR SIDEWALK 10
  4. IT DOESN'T LEAVE THE YARD, IT SOAKS INTO THE GROUND 50
  5. OTHER 8
  6. DOES NOT WATER 6
  7. DK/REF 8
- Q8. In the last year or so, did any fertilizers get used on your yard or garden?
1. YES 37
  2. NO 59
  3. DK/REF 4
- Q9. In the last year or so, did any pesticides or chemicals get used on your yard or garden to control insects, weeds, or plant diseases?
1. YES 30
  2. NO 67
  3. DK/REF 3
- Q12. Do you have either a driveway or an off-street parking area that is for your home?
1. YES 81
  2. NO [SKIP TO Q41] 18
  3. DK/REF [SKIP TO Q41] 1
- Q13. Please tell me if your driveway or off-street parking area was cleaned in each of the following ways in the last year. You can answer Yes or No to each one.  
[ROTATE a-c]
- a. By sweeping it?
    1. YES 67
    2. NO [SKIP TO Q41] 29
    3. DK/REF [SKIP TO Q41] 4
  - b. By hosing it down?
    1. YES [SKIP TO Q41] 19
    2. NO [SKIP TO Q41] 78
    3. DK/REF [SKIP TO Q41] 3
  - c. By blowing materials off it?
    1. YES [SKIP TO Q41] 51
    2. NO [SKIP TO Q41] 47
    3. DK/REF [SKIP TO Q41] 2

Q14. When your driveway or off-street parking area is cleaned by sweeping it, where do the swept-up materials go? Are they swept into the street? Put in a trash container? Put in a green waste collection bin? Sweep into your lawn or landscaping? Or something else? **[CHECK ONE]**

- 1. Sweep into street 5
- 2. Put it in the trash container 47
- 3. Put it in the green waste bin 26
- 4. Sweep it into lawn or landscaping 12
- 5. Something else 7
- 6. LEAVE IT IN A PILE
- 7. DK/REF 2

Q41. In the past three months or so, did you wash your car at home, at a car wash, or did you use a mobile car wash service? **[CHECK ONE]**

- 1. At home 15
- 2. Car wash **[SKIP TO T4]** 62
- 3. Mobile car wash service **[SKIP TO T4]** 8
- 4. DIDN'T WASH MY CAR **[SKIP TO T4]** 8
- 5. DON'T HAVE A CAR **[SKIP TO T4]** 6
- 6. DK/REF **[SKIP TO T4]** 1

Q42. You stated you wash your car at home. Do you wash it on a concrete, gravel or dirt driveway, or on your lawn?

- 1. Concrete driveway 70
- 2. Gravel or dirt driveway 18
- 3. Lawn or grass 7
- 4. DK/REF 5

### Pet Waste Behaviors

T4. Now I have a few questions about dogs.

Q43. How many dogs do you have in your household?

<b>[IF 0, SKIP TO T5]</b>	Have dog(s)	39	<i>M=1.7, Range 1 - 8</i>
DK/REF <b>[SKIP TO T5]</b>	No dog	56	
	DK/Ref	5	

Q44. In general, where do your dogs leave their waste, in your yard, a common area shared by other households, or somewhere else?

- 1. In my yard 71
- 2. In a common area shared by other households 11
- 3. SOMEWHERE ELSE 18
- 4. DK/REF **[SKIP TO Q46]**

Q45. You stated that your dog(s) goes [INSERT Q44]. How often do you pick up the dog waste [INSERT Q44]?

- 1. Every day 65
- 2. Once a week 25
- 3. Twice a month 4
- 4. Once a month, or 2
- 5. Rarely, never 2
- 6. DK/REF 2

Q46. When your dog is taken on a walk, where does his or her waste get thrown away or, is it left behind?  
[ASK OPEN-ENDED, CODE OR RECORD]

- |                                       |    |
|---------------------------------------|----|
| 1. IN GARBAGE CAN/BIN AT HOME         | 62 |
| 2. IN A CAN/BIN ON THE SIDEWALK/TRAIL | 20 |
| 3. LEFT ON THE SIDEWALK/TRAIL         | 2  |
| 4. DOG NEVER GOES ON A WALK           | 12 |
| 5. DOG NEVER GOES POO WHILE ON A WALK | 4  |
| 6. OTHER                              |    |
| 7. DK/REF                             | <1 |

T5. For the next four questions please think about your daily activities at home, at work, while shopping, and while socializing with friends and family.

### Litter Behaviors

Q47. In the past month, have you . . .  
[ROTATE a-d]

- dropped small items such as gum or candy wrappers on the ground, sidewalk, or street?
- dropped food or food wrappers on the ground, sidewalk, or street?
- left plastic bottles or caps in an outdoor area?
- tossed anything out of your car window?

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
1. YES	8	5	5	4
2. NO	92	94	95	95
3. DK/REF	<1	1	<1	1

### Pollution Concerns and Behaviors

T6. The next few questions are about items you might see on our sidewalks, streets, in our parks, and on our highways.

Q48. In your opinion, how much do each of the following contribute to the pollution of our local creeks, rivers, and ocean? Use a 1 for *not at all*, 10 for *a lot*, or use any number in between.

[ROTATE a-f]

- |  |        |
|--|--------|
| a. Cigarette butts                                 | M=6.95 |
| b. Waste from dogs and other pets                  | M=5.11 |
| c. Leaves and grass clippings left in the gutter   | M=4.70 |
| d. Trash, such as plastic bottles or food wrappers | M=7.25 |
| e. Water that runs off your yard into the gutter   | M=4.50 |
| f. People living in homeless camps                 | M=6.94 |

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10 --- DK/REF

Q17. When our beaches, oceans, lakes, and creeks get polluted, how much do you think this affects you and your family? Use a 1 if this pollution *does not affect you at all*, a 10 if *it affects you a great deal*, or use any number in between.

M=7.24

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10 --- DK/REF

Q18N. In the last year, did you avoid going into the water at a beach, lake, or river in San Diego County because you were concerned about pollution in the water?

- |           |    |
|-----------|----|
| 1. YES    | 40 |
| 2. NO     | 59 |
| 3. DK/REF | 1  |

## Watershed and Storm Drain Knowledge

T7. Now I have some questions about our local waterways.

Q20. Now, as far as you know, do you live in a watershed, or not?

- |           |    |
|-----------|----|
| 1. YES    | 12 |
| 2. NO     | 53 |
| 3. DK/REF | 65 |

Q21. Have you ever heard of the term “storm drain” before, or not?

- |           |    |
|-----------|----|
| 1. YES    | 80 |
| 2. NO     | 20 |
| 3. DK/REF | <1 |

Q22. When water goes into the storm drains in your area, does it go to a sewage treatment plant before it is released, or is it released into local waterways or the ocean without treatment? If you are not sure, just say so.

- |                               |    |
|-------------------------------|----|
| 1. Goes to treatment plant    | 13 |
| 2. Released without treatment | 26 |
| 3. Not sure                   | 60 |
| 4. REF                        | 1  |

T1. In fact, water in storm drains in San Diego County does not go into the sewage system and flows directly into local waterways and the ocean without being treated.

Q23. From what you know or may have heard, what are one or two major sources of pollution in storm drains?

- |                    |    |
|--------------------|----|
| 1. RECORD VERBATIM | 82 |
| 2. DK/REF          | 18 |

Q25. In the past year, did you make any changes in your behavior that were a direct result of seeing or hearing any information about what polluted water in storm drains does to local waterways, the beaches, and the ocean? If you don't recall, just say so.

- |                 |    |
|-----------------|----|
| 1. YES          | 28 |
| 2. NO           | 50 |
| 3. DON'T RECALL | 22 |
| 4. REF          | <1 |

Q26. Now, can you name one thing that you could do to help prevent storm water pollution?

- |                    |    |
|--------------------|----|
| 1. RECORD VERBATIM | 93 |
| 2. DK/REF          | 7  |

## Pollution Communication and Reporting

Q49. If you wanted to find information about preventing water runoff pollution, where would you look?

**Respondents could choose multiple responses so percentages do not sum to 100.**

- |   |    |
|---|----|
| 1. COUNTY WEBSITE   | 10 |
| 2. CITY WEBSITE   | 11 |
| 3. NGO (Coast Keepers, Surfrider Foundation, Sierra Club, etc.) | 1  |
| 4. INTERNET (Google search, etc.)                               | 59 |
| 5. I WOULDN'T SEARCH FOR RUNOFF INFORMATION                     | 2  |
| 6. OTHER  | 12 |
| 7. DK/REF   | 14 |

Q28. Have you heard of a telephone hotline which can be used to get information about preventing pollution, or to report activities that may be polluting our local beaches and storm drains?

- |           |    |
|-----------|----|
| 1. YES    | 15 |
| 2. NO     | 83 |
| 3. DK/REF | 2  |

Q30N. If you saw someone doing something that polluted local waters, what would be the most convenient way for you to report it – assuming your name would be kept confidential? **[ROTATE 1-4, SELECT ONE]**

- |   |    |
|---|----|
| 1. Calling the telephone hotline,                                 | 41 |
| 2. Entering a report on a website,                                | 15 |
| 3. A special app on your phone that connects to city departments, | 12 |
| 4. Sending a text message?  | 19 |
| 5. NONE   | 4  |
| 6. WOULD NOT REPORT IT  | 3  |
| 7. ALL  | 1  |
| 8. DK/REF   | 5  |

## Demographics

T2. We are almost done. I have just a few additional questions for statistical purposes only.

Q32. Did you visit a beach at the ocean in San Diego County in the past year?

- |           |    |
|-----------|----|
| 1. YES    | 74 |
| 2. NO     | 25 |
| 3. DK/REF | 1  |

Q33. Did you visit a lake or river in San Diego County in the past year?

- |           |    |
|-----------|----|
| 1. YES    | 37 |
| 2. NO     | 61 |
| 3. DK/REF | 2  |

Q34. Are you of Hispanic or Latino origin or descent, or do you consider yourself Hispanic or Latino?

- |           |    |
|-----------|----|
| 1. YES    | 35 |
| 2. NO     | 62 |
| 3. DK/REF | 3  |

Q35. Would you describe your race as Black or African-American; Asian or Asian-American; White or Caucasian; Native American, mixed ethnicity, or something else?

- |                              |    |
|------------------------------|----|
| 1. Black or African-American | 5  |
| 2. Asian or Asian-American   | 8  |
| 3. White or Caucasian        | 64 |
| 4. Native American           | 1  |
| 5. Mixed ethnicity           | 13 |
| 6. Something else            | 2  |
| 7. REF                       | 7  |

Q36. Would you describe where you live as mostly urban, suburban, or rural?

- |             |    |
|-------------|----|
| 1. Urban    | 36 |
| 2. Suburban | 39 |
| 3. Rural    | 14 |
| 4. DK/REF   | 11 |

Q37. Do you own the home where you live or do you rent it?

- |           |    |
|-----------|----|
| 1. Own    | 47 |
| 2. Rent   | 48 |
| 3. DK/REF | 5  |

Q38. What was the last level of school you completed?

- 1. LESS THAN GRADE 12 10
- 2. HIGH SCHOOL GRADUATE 23
- 3. SOME COLLEGE, NO DEGREE 22
- 4. ASSOCIATE DEGREE (2-YR) 8
- 5. BACHELOR'S DEGREE (4-YR) 18
- 6. POST GRADUATE DEGREE 10
- 7. PROFESSIONAL DEGREE 5
- 8. REFUSED 4

Q39. What is your age, please?

- 1. RECORD VERBATIM **[SKIP TO Q40]** 93 *M=47.7, Range 18 - 95*
- 2. DK/REF 7

Q39a. Which of the following categories includes your age?

- 1. 18-29 21
- 2. 30-39 14
- 3. 40-49 13
- 4. 50-59 20
- 5. 60-64 8
- 6. 65-69 5
- 7. 70 or older 15
- 8. REFUSED 4

Q40. Finally, so we can identify results by watershed, what are the two nearest cross streets to your home?

- 1. FIRST STREET - RECORD VERBATIM, VERIFY SPELLING
- 2. SECOND STREET - RECORD VERBATIM, VERIFY SPELLING **[SKIP TO T3]**
- 3. REF

Q40a. Can you give me the name of the school or park closest to your home?

- 1. RECORD VERBATIM
- 2. REF

T3. Those are all the questions I have. Thank you very much for participating in the survey.

INTERVIEWER RECORD GENDER (DO NOT ASK):

- 1. MALE 58
- 2. FEMALE 42

## APPENDIX B: 2015 – 2018 SURVEY COMPARISONS

2015 San Diego County Regional Study		2018 San Diego Regional Storm Water Study	
<b>Think Blue Slogan Awareness</b>			
1	In the past year, have you seen or heard the slogan “Think Blue San Diego?”		
2	In a few words of your own, what do you think that the slogan “Think Blue San Diego” is asking you to do?		
		<b>Project Clean Water Awareness</b>	
		1	In the past year, have you seen or heard about “Project Clean Water?”
		2	In a few words of your own, what do you think “Project Clean Water” does?
<b>Outdoor Infrastructure &amp; Behavior</b>		<b>Outdoor Infrastructure &amp; Behavior</b>	
<b>Storm Water Pollution Behavior</b>		<b>Storm Water Pollution Behavior</b>	
3	Do you live in a single-family home, a duplex or triplex, a townhouse, or an apartment or condominium?	3	Do you live in a single-family home, a duplex or triplex, a townhouse, or an apartment or condominium?
4	Now, thinking about your home, is there a yard or garden that you or someone in your household are responsible for?	4	Now, thinking about your home, is there a yard or garden that you or someone in your household are responsible for?
5	Is your yard or garden maintained by you or others in your household? By a gardening service? Or by both household members and gardening service together?	5	Is your yard or garden maintained by you or others in your household? By a gardening service? Or by both household members and gardening service together?
6	Do you have an automatic sprinkler system for your yard or garden?	6	Do you have an automatic sprinkler system for your yard or garden?
7	In the last year or so, did anyone adjust the sprinklers in your yard or garden to reduce the amount of water you use? Or did that not happen in the last year?	7	After watering your plants and lawn where does any excess water run off your property?
8	In the last year or so, did any fertilizers get used on your yard or garden?	8	In the last year or so, did any fertilizers get used on your yard or garden?
9	In the last year, did any pesticides or chemicals get used on your yard or garden to control insects, weeds, or plant diseases?	9	In the last year, did any pesticides or chemicals get used on your yard or garden to control insects, weeds, or plant diseases?
10	There are a number of landscape and other design features that prevent or reduce the flow of rain water off your property. Please tell me if you have any of the following features in your front or back yard. <ul style="list-style-type: none"> <li>a. Do you have a planted or rock area designed to catch rain water to allow it to seep into the ground? This is called a vegetated swale or rock basin.</li> <li>b. Do you have a barrel or cistern connected to a rain downspout to collect rain water for later use?</li> <li>c. Do you have roof downspouts that drain onto landscaping?</li> </ul>		

2015 San Diego County Regional Study		2018 San Diego Regional Storm Water Study	
	d. Do you have a paved driveway or walkway that allows rain water to seep through its surface into the ground? This is called permeable pavement.		
11	Have you removed any of your turf and replaced it with California-friendly plants or artificial turf?		
12	Do you have either a driveway or an off-street parking area that is for your home?	12	Do you have either a driveway or an off-street parking area that is for your home?
13	Please tell me if your driveway or off-street area was cleaned in each of the following ways in the last year. a. By sweeping it b. By hosing it down c. By blowing materials off it	13	Please tell me if your driveway or off-street area was cleaned in each of the following ways in the last year. a. By sweeping it b. By hosing it down c. By blowing materials off it
14	When you clean your driveway by sweeping it, what do you do most often with the materials you sweep up? Do you usually sweep it into the street? Put it in a trash container? Put it in a green waste collection bin? Sweep it into your lawn or landscaping? Or something else?	14	When you clean your driveway by sweeping it, what do you do most often with the materials you sweep up? Do you usually sweep it into the street? Put it in a trash container? Put it in a green waste collection bin? Sweep it into your lawn or landscaping? Or something else?
		<b>Car Washing Behavior</b>	
		41	In the past three months or so, did you wash your car at home, at a car wash, or did you use a mobile car wash service?
		42	You stated you wash your car at home. Do you wash it on a concrete, gravel or dirt driveway, or on your lawn?
		<b>Pet Waste Behavior</b>	
		43	How many dogs do you have in your household?
		44	In general, where do your dogs leave their waste, in your yard, a common area shared by other households, or somewhere else?
		45	You stated that your dog goes [Q44 answer]. How often do you pick up the dog waste [Q44 answer]?
		46	When your dog is taken on a walk, where does his or her waste get thrown away, or is it left behind?
<b>Litter Awareness</b>			
15	In the last year, how often did you see litter on the block where you live? (1 <i>never</i> to 10 <i>very frequently</i> )		
<b>Litter Behavior</b>		<b>Litter Behavior</b>	
16	When you see litter on your block, how often do you pick it up and dispose of it in a trash container? (1 <i>never</i> to 10 <i>always</i> )		
		T5	For the next four questions please think about your daily activities at home, at work, while shopping, and while socializing with friends and family.

2015 San Diego County Regional Study		2018 San Diego Regional Storm Water Study	
		47	In the past month, have you... a. dropped small items such as gum or candy wrappers on the ground, sidewalk, or street? b. dropped food or food wrappers on the ground, sidewalk, or street? c. left plastic bottles or caps in an outdoor area? d. tossed anything out of your car window?
Storm Water Pollution Concerns and Behaviors		Storm Water Pollution Concerns and Behaviors	
		T6	The next few questions are about items you might see on our sidewalks, streets, in our parks, and on our highways.
		48	In your opinion, how much do each of the following contribute to the pollution of our local creeks, rivers, and ocean? (1 <i>not at all</i> to 10 <i>a great deal</i> ) a. Cigarette butts b. Waste from dogs and other pets c. Leaves and grass clippings left in the gutter d. Trash, such as plastic bottles or food wrappers e. Water that runs off your yard into the gutter f. People living in homeless camps
17	When our beaches, oceans, lakes, and creeks get polluted, how much do you think this affects you and your family? (1 <i>not at all</i> to 10 <i>a great deal</i> )	17	When our beaches, oceans, lakes, and creeks get polluted, how much do you think this affects you and your family? (1 <i>not at all</i> to 10 <i>a great deal</i> )
18	In the last year, did you avoid going into the water at a beach in San Diego County because you were concerned about pollution in the water?	18N	In the last year, did you avoid going into the water at a beach, lake, or river in San Diego County because you were concerned about pollution in the water?
19	In the last year, did you avoid visiting a lake or river in San Diego County because you were concerned about pollution in the water?		
Watershed Awareness		Watershed Awareness	
20	Now, as far as you know, do you live in a watershed, or not?	20	Now, as far as you know, do you live in a watershed or not?
Storm Drain Awareness		Storm Drain Awareness	
21	Have you ever heard of the term "storm drain" before, or not?	21	Have you ever heard of the term "storm drain" before, or not?
22	When water goes into the storm drains in your area, does it go to a sewage treatment plant before it is released, or is it released into local waterways or the ocean without treatment?	25	When water goes into the storm drains in your area, does it go to a sewage treatment plant before it is released, or is it released into local waterways or the ocean without treatment?
T1	In fact, water in storm drains in San Diego County does not go into the sewage system and flows directly into local waterways and the ocean without treatment.	T1	In fact, water in storm drains in San Diego County does not go into the sewage system and flows directly into local waterways and the ocean without treatment.
23	From what you know or may have heard, what are one or two major sources of pollution in storm drains?	23	From what you know or may have heard, what are one or two major sources of pollution in storm drains?

2015 San Diego County Regional Study		2018 San Diego Regional Storm Water Study	
2015 San Diego County Regional Study		2018 San Diego Regional Storm Water Study	
24	In the last year, did you see or hear anything about steps that any local government agencies in this area are taking to prevent pollution of the water in storm drains?		
<b>Storm Drain Pollution Behavior</b>		<b>Storm Drain Pollution Behavior</b>	
25	In the past year, did you make any changes in your behavior that were a direct result of seeing or hearing any information about what polluted water in storm drains does to local waterways, the beaches, and the ocean?	25	In the past year, did you make any changes in your behavior that were a direct result of seeing or hearing any information about what polluted water in storm drains does to local waterways, the beaches, and the ocean?
26	Now, can you name one thing that you could do to help prevent storm water pollution?	26	Now, can you name one thing that you could do to help prevent storm water pollution?
<b>Storm Water Pollution Prevention Awareness</b>		<b>Storm Water Pollution Prevention Awareness</b>	
27	Have you ever visited a website to get information about ways to reduce storm water pollution?		
		49	If you wanted to find information about preventing water runoff pollution, where would you look?
28	Have you heard of a telephone hotline which can be used to get information about preventing pollution, or to report activities that may be polluting our local beaches and storm drains?	28	Have you heard of a telephone hotline which can be used to get information about preventing pollution, or to report activities that may be polluting our local beaches and storm drains?
<b>Storm Water Pollution Prevention Behavior</b>		<b>Storm Water Pollution Prevention Behavior</b>	
29	In the last year, did you call a storm water pollution prevention hotline for any reason?		
30	If you saw someone doing something that polluted local waters, what would be the most convenient way for you to report it - assuming your name would be kept confidential? a. Calling the telephone hotline b. Sending an email c. Entering a report on a website d. Sending a text message	30N	If you saw someone doing something that polluted local waters, what would be the most convenient way for you to report it - assuming your name would be kept confidential? a. Calling the telephone hotline b. Entering a report on a website c. A special app on your phone that connects to city departments d. Sending a text message
<b>Demographics/Classifications</b>		<b>Demographics/Classifications</b>	
31	How many years have you lived in San Diego County?		
32	Did you visit a beach at the ocean in San Diego County in the past year?	32	Did you visit a beach at the ocean in San Diego County in the past year?
33	Did you visit a lake or river in San Diego County in the past year?	33	Did you visit a lake or river in San Diego County in the past year?
34	Are you of Hispanic or Latino origin or descent, or do you consider yourself to be Hispanic or Latino?	34	Are you of Hispanic or Latino origin or descent, or do you consider yourself to be Hispanic or Latino?

2015 San Diego County Regional Study		2018 San Diego Regional Storm Water Study	
35	Would you describe your race as Black or African-American, Asian or Asian-American, White or Caucasian, Native American, mixed ethnicity, or something else?	35	Would you describe your race as Black or African-American, Asian or Asian-American, White or Caucasian, Native American, mixed ethnicity, or something else?
36	Would you describe where you live as mostly urban, suburban, or rural?	36	Would you describe where you live as mostly urban, suburban, or rural?
37	Do you own the home where you live or do you rent it?	37	Do you own the home where you live or do you rent it?
38	What was the last level of school you completed?	38	What was the last level of school you completed?
39	What is your age, please?	39	What is your age, please?
39a	[If refused] Which of the following categories includes your age?	39a	[If refused] Which of the following categories includes your age?
40	Finally, so we can identify results by watershed, what are the two nearest cross streets to your home?	40	Finally, so we can identify results by watershed, what are the two nearest cross streets to your home?
40a	[If refused] Can you give me the name of the school or park closest to your home?	40a	[If refused] Can you give me the name of the school or park closest to your home?