

# Stormwater Opinions and Behaviors in Chittenden County, Vermont

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## **Introduction**

In September 2003, the Chittenden County Regional Stormwater Education Program (RSEP) and the Lake Champlain Committee commissioned a study to assess the opinions regarding and behaviors related to stormwater pollution of households in eight municipalities in Chittenden County. Based on this assessment, RSEP designed and implemented a social marketing campaign to (a) raise awareness of stormwater pollution issues and (b) to suggest and encourage behavioral changes to reduce this form of pollution. This social marketing campaign ran for four years, beginning in the spring of 2004 and ending in summer 2007. Following this campaign, in the fall of 2007, a post-campaign study was commissioned by RSEP to determine if there were any significant changes in opinions or behaviors of people in Chittenden County over time. This report presents the methods and findings from this study.

## **Methods**

### ***Data***

Two datasets were used for this longitudinal trend study. The first set of data was a precollected dataset, which was supplied by the RSEP for this study from the 2003 telephone survey. There were a total of 400 completed responses from eight municipalities in Chittenden County, which represented 8.5 percent of all calls made during the survey implementation process. The 2003 study surveyed households in Burlington, Colchester, Essex Town, Essex Junction, South Burlington, Shelburne, Williston, and Winooski.

The second dataset was collected for this study by the Center for Rural Studies, using a similar questionnaire, which included the same questions and responses, but

differed slightly in the introduction, to comply with requirements of the University of Vermont Committee on Human Research in the Behavioral Sciences. Also, for the 2007 version of the survey, the order of the opinion and behavior questions was reversed from the 2003 survey, which had the behavior questions before the opinion questions. The 2007 survey instrument is presented in *Appendix A*. The 2007 survey was conducted between the hours of 2:00 p.m. and 9:00 p.m. beginning on October 8, 2007 and ending on October 12, 2007. The survey was conducted by telephone from the University of Vermont using computer-aided telephone interviewing (CATI). The sample was randomly drawn from a list of telephone numbers, updated quarterly, which included all eight the municipalities from the 2003 study and Milton. Each potential respondent who was contacted had to be a resident of one of these nine municipalities and be over the age of eighteen in order to qualify for the study. In total, 4,283 households were contacted, yielding 454 complete responses; therefore, 10.6 percent of all calls made resulted in a completed survey. The results based on a group of this size have a margin of error of plus or minus 5 percent with a confidence interval of 95 percent. This means that if the survey were repeated, 95 percent of the time the results would be plus or minus 5 percent of the number reported.

### ***Respondent Profile***

*Table 1* presents the total number of completed responses by municipality for 2003 and 2007. The percent of respondents by length of time that they have lived in their current home is depicted in *Table 2*. *Table 3* shows the respondents by ownership status by percent, while *Table 4* presents the percent of respondents with decision making

control over the grounds where they live. These four tables all include the additional data for respondents from Milton in 2007 survey, which were not present in the 2003 study.

Table 1: Total Number of Completed Responses by Municipality

<b>Town</b>	<b>2003</b>	<b>2007</b>
Burlington	136	131
Colchester	50	56
Essex Junction	10	46
Essex Town	66	59
<i>Milton</i>	<i>N/A</i>	<i>34</i>
South Burlington	57	57
Shelburne	23	26
Williston	39	26
Winooski	19	19
<i>Total</i>	<i>400</i>	<i>454</i>

Table 2: Percent of Respondents by Length of Time in Current Home

<b>Response</b>	<b>2003</b>	<b>2007</b>
One year or less	12.0%	2.0%
More than one year	88.0%	98.0%
Don't Know	0.0%	0.0%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (453)</i>

Table 3: Percent of Respondents by Ownership Status

<b>Response</b>	<b>2003</b>	<b>2007</b>
Own	78.7%	84.4%
Rent	20.7%	15.3%
Don't Know	0.6%	0.2%
<i>Total</i>	<i>100.0% (352)</i>	<i>100.0% (450)</i>

Table 4: Percent of Respondents who Decide How the Grounds are Cared For

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes, I decide	69.6%	80.3%
No, I do not decide	30.4%	19.4%
Don't Know	0.0%	0.2%
<i>Total</i>	<i>100.0% (352)</i>	<i>100.0% (432)</i>

### ***Analysis & Reporting***

The data were stored electronically using Microsoft Excel on a password-protected server. In order to protect the privacy and confidentiality of the respondents, no identifying information was stored with the data. The Statistical Package for the Social Sciences (SPSS) was used for the analysis. Cross tabulation tables were created to show the percent values from the 2003 and 2007 datasets. Pearson Chi<sup>2</sup> values and their corresponding significance values were calculated for each cross tabulation table. For this study, significance values of less than 0.100 were considered to be a significant indication of difference between the two datasets.

The findings of the statistical analysis are presented in the Results section of this document. Each variable is presented separately and each page includes the wording of the question, a cross tabulation table, and the significance value determined from the Chi<sup>2</sup> test value. Since the tables are intended to compare the 2003 and 2007 findings, the respondents from Milton were not included in this analysis. No discussion or conclusions are presented in this report. The actual significance and meaning of the findings will be left to the discretion of the parties that commissioned the study to decide.

**Results**

**Question 1:** Did you (or your family) maintain your lawn yourself or did you hire a lawn care company?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Self	89.0%	75.5%
Company	10.6%	19.1%
No Lawn	0.4%	5.5%
<i>Total</i>	<i>100.0% (245)</i>	<i>100.0% (330)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value < .001).*

**Question 2:** When you mowed your lawn, about how often did you bag or rake the clippings?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Always	18.3%	17.3%
Often	7.3%	6.4%
Sometimes	20.6%	17.3%
Never	52.3%	58.2%
Don't Know	1.4%	0.8%
<i>Total</i>	<i>100.0% (218)</i>	<i>100.0% (249)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .733).*

**Question 3a:** The following are some common things that people do to deal with bug problems. As I read the possibilities, please tell me how you typically dealt with bug problems. Do you...

<b>Response</b>	<b>2003</b>	<b>2007</b>
Spray the entire area regularly as a preventative measure	4.1%	3.8%
Kill all the bugs by hand using no chemicals	13.1%	15.7%
Hire a Professional	6.9%	6.4%
Spray areas only during problem	21.2%	17.3%
Something else, chemical	6.1%	.0%
Something else, non-chemical	9.4%	5.4%
Do nothing	26.5%	26.3%
No bug problems	12.7%	23.7%
Don't know	0.0%	1.3%
<i>Total</i>	<i>100.0% (245)</i>	<i>100.0% (312)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value < .001).*

**Question 3b:** What were these pesticides used on? Where they used on:

The Lawn

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	50.0%	49.4%
Yes	50.0%	50.6%
<i>Total</i>	<i>100.0% (92)</i>	<i>100.0% (85)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .938).*

**Question 3c:** What were these pesticides used on? Where they used on:

A Vegetable Garden

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	90.2%	85.9%
Yes	9.8%	14.1%
<i>Total</i>	<i>100.0% (92)</i>	<i>100.0% (85)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .373).*

**Question 3d:** What were these pesticides used on? Where they used on:

A Flower Garden

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	80.4%	77.6%
Yes	19.6%	22.4%
<i>Total</i>	<i>100.0% (92)</i>	<i>100.0% (85)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .649).*

**Question 3e:** What were these pesticides used on? Where they used on:

Landscaped Areas

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	91.3%	88.2%
Yes	8.7%	11.8%
<i>Total</i>	<i>100.0% (92)</i>	<i>100.0% (85)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .500).*

**Question 3f:** What were these pesticides used on? Where they used on:

Bugs in the House

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	76.1%	83.5%
Yes	23.9%	16.5%
<i>Total</i>	<i>100.0% (92)</i>	<i>100.0% (85)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .219).*

**Question 3g:** What were these pesticides used on? Where they used on:

Fleas

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	97.8%	98.8%
Yes	2.2%	1.2%
<i>Total</i>	<i>100.0% (92)</i>	<i>100.0% (85)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .608).*

**Question 3h:** What were these pesticides used on? Where they used on:

Other

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	88.0%	90.6%
Yes	12.0%	9.4%
<i>Total</i>	<i>100.0% (92)</i>	<i>100.0% (85)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .585).*

**Question 3i:** What were these pesticides used on? Where they used on:

Don't Know

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	94.6%	95.3%
Yes	5.4%	4.7%
<i>Total</i>	<i>100.0% (95)</i>	<i>100.0 (85)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .825).*

**Question 3j:** On a scale from 1 to 10 where 1 means 'Not at all important' and 10 means 'Extremely important', how important is it to you to have a yard free of bug damage?

<b>Response</b>	<b>2003</b>	<b>2007</b>
1	8.5%	4.7%
2	5.3%	10.6%
3	5.3%	7.1%
4	1.1%	3.5%
5	25.5%	12.9%
6	8.5%	11.8%
7	10.6%	16.5%
8	17.0%	16.5%
9	3.2%	2.4%
10	12.8%	12.9%
Don't Know	2.1%	1.2%
<i>Total</i>	<i>100.0% (94)</i>	<i>100.0% (85)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .479).*

**Question 4:** Now I'm going to read a list that describes some common things that people do to deal with weed problems. Please tell me how you typically dealt with weeds. Did you:

<b>Response</b>	<b>2003</b>	<b>2007</b>
Spray the entire area regularly as a preventative measure	4.5%	4.8%
Pull all weeds by hand using no chemicals	44.1%	43.4%
Hire a professional	9.4%	5.8%
Spray areas only during problems	11.0%	11.3%
Something else chemical	7.3%	.0%
Something else non chemical	3.7%	3.2%
Do nothing	15.5%	17.4%
No weed problems	3.3%	13.5%
Don't Know	1.2%	0.6%
<i>Total</i>	<i>100.0% (245)</i>	<i>100.0% (311)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value < .001).*

**Question 4b:** On a scale from 1 to 10 where 1 means 'Not at all important' and 10 means 'Extremely important', how important is it to you to have a weed-free yard?

<b>Response</b>	<b>2003</b>	<b>2007</b>
1	5.1%	4.4%
2	1.3%	7.4%
3	3.8%	5.9%
4	2.5%	8.8%
5	22.8%	16.2%
6	8.9%	14.7%
7	20.3%	14.7%
8	11.4%	16.2%
9	3.8%	4.4%
10	20.3%	5.9%
Don't Know	0.0%	1.5%
<b>Total</b>	<b>100.0% (79)</b>	<b>100.0% (68)</b>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .093).*

**Question 7:** Have you typically used a combined fertilizer and weed killer - a 'weed and feed' product?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	67.1%	69.1%
No	19.0%	22.1%
Don't Know	13.9%	8.8%
<i>Total</i>	<i>100.0% (79)</i>	<i>100.0% (68)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value < .603).*

**Question 8:** Did you or anyone in your household use any other fertilizers in your yard?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	40.4%	33.4%
No	58.0%	64.3%
Don't Know	1.6%	2.3%
<i>Total</i>	<i>100.0% (245)</i>	<i>100.0% (311)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .225).*

**Question 9a:** What was the fertilizer used on? Was it:

The Lawn

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	35.3%	45.2%
Yes	64.6%	54.8%
<i>Total</i>	<i>100.0% (99)</i>	<i>100.0% (104)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .153).*

**Question 9b:** What was the fertilizer used on? Was it:

A Vegetable Garden

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	72.7%	65.4%
Yes	27.3%	34.6%
<i>Total</i>	<i>100.0% (99)</i>	<i>100.0% (104)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .258).*

**Question 9c:** What was the fertilizer used on? Was it:

A Flower Garden

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	58.6%	57.7%
Yes	41.4%	42.3%
<i>Total</i>	<i>100.0% (99)</i>	<i>100.0% (104)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .897).*

**Question 9d:** What was the fertilizer used on? Was it:

Landscaped Areas

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	91.9%	93.3%
Yes	8.1%	6.7%
<i>Total</i>	<i>100.0% (99)</i>	<i>100.0% (104)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .713).*

**Question 9e:** What was the fertilizer used on? Was it:

Somewhere Else

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	98.0%	97.1%
Yes	2.0%	2.9%
<i>Total</i>	<i>100.0% (99)</i>	<i>100.0% (104)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .691).*

**Question 9e:** What was the fertilizer used on? Was it:

Don't Know

<b>Response</b>	<b>2003</b>	<b>2007</b>
No	99.0%	100.0%
Yes	1.0%	0.0%
<i>Total</i>	<i>100.0% (99)</i>	<i>100.0% (104)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .304).*

**Question 10:** And when you used fertilizer, did you use a slow-release product or a regular product?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Slow Release	42.4%	40.4%
Regular	40.4%	29.8%
Don't Know	17.2%	29.8%
<i>Total</i>	<i>100.0% (99)</i>	<i>100.0% (104)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .078).*

**Question 11a:** When you watered your lawn, how often did you notice puddles forming or water running off of it? Would you say:

<b>Response</b>	<b>2003</b>	<b>2007</b>
Always	1.6%	0.6%
Often	3.3%	0.6%
Sometimes	11.8%	8.4%
Never	50.2%	45.0%
Don't Water Lawn	33.1%	44.7%
Don't Know	0.0%	0.6%
<i>Total</i>	<i>100.0% (245)</i>	<i>100.0% (311)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .010).*

**Question 11b:** Is there any water - either a stream or lake - on or next to your property?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	14.3%	24.4%
No	85.7%	75.2%
Don't Know	0.0%	0.3%
<i>Total</i>	<i>100.0% (245)</i>	<i>100.0% (311)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .008).*

**Question 11c:** About how many times each year did you clear vegetation along that water way?

<b>Response</b>	<b>2003</b>	<b>2007</b>
0	74.3%	80.6%
1	5.7%	9.7%
2	8.6%	2.8%
3	5.7%	1.4%
4	0.0%	1.4%
8	0.0%	1.4%
Don't Know	5.7%	2.8%
<i>Total</i>	<i>100.0% (35)</i>	<i>100.0% (72)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .500).*

**Question 12:** When you had yard waste to dispose of, how did you most often dispose of it? Did you:

<b>Response</b>	<b>2003</b>	<b>2007</b>
Burn It	2.4%	4.5%
Compost It	47.8%	61.3%
Put it in a Trash Container	21.6%	16.1%
Something Else	27.8%	15.5%
Don't Know	0.4%	2.6%
<i>Total</i>	<i>100.0% (245)</i>	<i>100.0% (310)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value < .001).*

**Question 13:** How many, if any, dogs does your household have?

<b>Response</b>	<b>2003</b>	<b>2007</b>
0	72.3%	72.9%
1 or more	27.8%	27.1%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (417)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .835).*

**Question 14:** When you took your dog(s) for a walk, did you typically do anything in particular to dispose of your pet's waste?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Put in the Trash	62.2%	72.6
No	17.1%	8.8
Don't Walk the Dog	9.9%	6.2
Other	9.9%	12.4%
Don't Know	0.9%	0.0%
<i>Total</i>	<i>100.0% (111)</i>	<i>100.0% (113)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .189).*

**Question 15:** When your dog(s) left waste around your property, did you typically do anything in particular to dispose of it?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Put in the Trash	59.5%	63.7%
Flush it Down the Toilet	0.9%	5.3%
Other	37.8%	29.2%
Don't Know	1.8%	1.8%
<i>Total</i>	<i>100.0% (111)</i>	<i>100.0% (113)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .180).*

**Question 16a:** How often, if at all, did you or people in your household wash your cars at home?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Once a Week or More	7.3%	3.4%
2-3 Times a Month	7.8%	5.8%
About Once a Month	10.8%	9.1%
Less Than Once a Month	30.8%	26.6%
Never	42.8%	54.9%
Don't Know	0.8%	0.2%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (417)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .007).*

**Question 16b:** When you or others in your household have washed their cars at your house, how often were they washed on paved surfaces (as opposed to gravel, dirt, or grass)? Would you say:

<b>Response</b>	<b>2003</b>	<b>2007</b>
Always	68.3%	78.9%
Often	6.7%	5.3%
Sometimes	3.3%	5.3%
Never	21.7%	10.5%
Don't Know	0.0%	0.0%
<i>Total</i>	<i>100.0% (60)</i>	<i>100.0% (38)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .510).*

**Question 17a:** Did you or others in your household work on any motors or motor vehicles on your property?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	17.5%	13.7%
No	82.5%	86.3%
Don't Know	0.0%	0.0%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (417)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .131).*

**Question 17b:** How often would you say you or someone else has worked on motors or motor vehicles on your property? Would you say:

<b>Response</b>	<b>2003</b>	<b>2007</b>
Always	4.3%	12.3%
Often	24.3%	22.8%
Sometimes	71.4%	63.2%
Never	0.0%	1.8%
Don't Know	0.0%	0.0%
<i>Total</i>	<i>100.0% (70)</i>	<i>100.0% (57)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .248).*

**Question 18a:** When you or others changed the oil, how was it typically disposed?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Dumped on Property or Street	1.4%	0.0%
Recycled/Put in a Container	67.1%	78.6%
Didn't Change the Oil	24.3%	12.5%
Other	0.0%	7.1%
Don't Know	7.1%	1.8%
<i>Total</i>	<i>100.0% (70)</i>	<i>100.0% (56)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .033).*

**Question 18b:** When you or others changed the antifreeze, how was it typically disposed?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Dumped on Property or Street	1.4%	0.0%
Recycled/Put in a Container	34.3%	30.4%
Didn't Change the Antifreeze	48.6%	53.6%
Other	0.0%	7.1%
Don't Know	15.7%	8.9%
<i>Total</i>	<i>100.0% (70)</i>	<i>100.0% (56)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .124).*

**Question 19:** In general, compared to ten years ago, do you think that Lake Champlain is more polluted, less polluted or about the same?

<b>Response</b>	<b>2003</b>	<b>2007</b>
More Polluted	48.0%	40.2%
Less Polluted	14.5%	18.3%
About the Same	22.5%	28.8%
Don't Know	15.0%	12.6%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .034).*

**Question 20:** Compared to ten years ago, do you think that your local streams and waterways are more polluted, less polluted or about the same?

<b>Response</b>	<b>2003</b>	<b>2007</b>
More Polluted	43.1%	39.3%
Less Polluted	14.3%	18.6%
About the Same	26.6%	28.1%
Don't Know	16.0%	14.0%
<i>Total</i>	<i>100.0% (399)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .293).*

**Question 21a:** Now, thinking specifically about water in your area, water from your kitchen and bath -- can you tell me if that water gets treated at a sewage treatment plant or system, or does it run directly into creeks, rivers and Lake Champlain?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Treatment Plant	57.5%	69.3%
Creeks/Rivers/Lake	1.5%	1.7%
Septic System	24.3%	17.4%
Don't Know	16.8%	11.7%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .005).*

**Question 21b:** And the water outside of your place of residence, from over-watered lawns and gardens, can you tell me where that drains to?

Treatment Plant

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	2.8%	4.8%
No, everyone else	97.3%	95.2%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .131).*

**Question 21c:** And the water outside of your place of residence, from over-watered lawns and gardens, can you tell me where that drains to?

Creeks/Rivers/Lake

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	20.0%	41.4%
No, everyone else	80.0%	58.6%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value < .001).*

**Question 21d:** And the water outside of your place of residence, from over-watered lawns and gardens, can you tell me where that drains to?

Storm Drain

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	18.5%	21.7%
No, everyone else	81.5%	78.3%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .258).*

**Question 21e:** And the water outside of your place of residence, from over-watered lawns and gardens, can you tell me where that drains to?

Sewer

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	9.3%	14.0%
No, everyone else	90.8%	86.0%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .033).*

**Question 21f:** And the water outside of your place of residence, from over-watered lawns and gardens, can you tell me where that drains to?

Absorbed into the Ground

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	18.8%	23.8%
No, everyone else	81.3%	76.2%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .077).*

**Question 21g:** And the water outside of your place of residence, from over-watered lawns and gardens, can you tell me where that drains to?

Absorbed into the Ground and Enters Storm Drains

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	1.8%	2.1%
No, everyone else	98.3%	97.9%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .684).*

**Question 21h:** And the water outside of your place of residence, from over-watered lawns and gardens, can you tell me where that drains to?

Absorbed into the Ground

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	2.5%	1.4%
No, everyone else	97.5%	98.6%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates **no** significant difference between 2003 and 2007 (significance value = .268).*

**Question 21i:** And the water outside of your place of residence, from over-watered lawns and gardens, can you tell me where that drains to?

Don't Know

<b>Response</b>	<b>2003</b>	<b>2007</b>
Yes	27.0%	14.3%
No, everyone else	73.0%	85.7%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (420)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value < .001).*

**Question 22a:** I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.

Business and industry?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Great Impact	42.5%	42.0%
Some Impact	26.0%	33.2%
Very Little Impact	13.3%	13.6%
No Impact	14.3%	6.4%
Don't Know	4.0%	4.8%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (419)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .003).*

**Question 22b:** I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.

Residential septic systems?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Great Impact	14.5%	17.5%
Some Impact	33.3%	36.5%
Very Little Impact	19.3%	22.3%
No Impact	24.3%	12.2%
Don't Know	8.8%	11.5%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (417)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value < .001).*

**Question 22c:** I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.

Construction of roads, houses and shopping centers?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Great Impact	33.0%	39.5%
Some Impact	35.3%	34.7%
Very Little Impact	13.3%	15.1%
No Impact	15.0%	6.9%
Don't Know	3.5%	3.8%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (418)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .004).*

**Question 22d:** I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.

Wastewater treatment facilities?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Great Impact	18.8%	21.3%
Some Impact	32.0%	24.2%
Very Little Impact	20.5%	23.7%
No Impact	17.0%	13.7%
Don't Know	11.8%	17.0%
<b>Total</b>	<b>100.0% (400)</b>	<b>100.0% (417)</b>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .022).*

**Question 22e:** I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.

Farming?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Great Impact	33.5%	38.4%
Some Impact	31.0%	30.7%
Very Little Impact	12.5%	15.1%
No Impact	17.8%	9.8%
Don't Know	5.3%	6.0%
<b>Total</b>	<b>100.0% (400)</b>	<b>100.0% (417)</b>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .018).*

**Question 22f:** I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.

Rain run-off from parking lots and roads?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Great Impact	27.8%	43.5%
Some Impact	41.3%	37.8%
Very Little Impact	16.0%	9.3%
No Impact	12.3%	5.3%
Don't Know	2.8%	4.1%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (418)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value < .001).*

**Question 22g:** I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.

Population growth in general?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Great Impact	37.8%	48.1%
Some Impact	39.3%	34.4%
Very Little Impact	11.5%	8.4%
No Impact	8.5%	5.3%
Don't Know	3.0%	3.8%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (418)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .018).*

**Question 22h:** I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.

Rain run-off from lawns and gardens?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Great Impact	15.8%	24.5%
Some Impact	40.5%	44.4%
Very Little Impact	25.5%	18.7%
No Impact	13.5%	8.2%
Don't Know	4.8%	4.3%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (417)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .001).*

**Question 22i:** I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.

Hosing sand, gravel, and other debris off of driveways and into street gutters?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Great Impact	10.0%	21.6%
Some Impact	39.3%	41.2%
Very Little Impact	27.5%	22.3%
No Impact	19.3%	8.9%
Don't Know	4.0%	6.0%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (417)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value < .001).*

**Question 22j:** I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.

Erosion from small home/garden construction projects?

<b>Response</b>	<b>2003</b>	<b>2007</b>
Great Impact	5.8%	9.4%
Some Impact	33.8%	39.3%
Very Little Impact	35.3%	35.3%
No Impact	20.5%	10.8%
Don't Know	4.8%	5.3%
<i>Total</i>	<i>100.0% (400)</i>	<i>100.0% (417)</i>

*Note. Chi<sup>2</sup> test indicates a significant difference between 2003 and 2007 (significance value = .001).*

**Appendix A**

**2007 Stormwater Survey Instrument**

**SECTION I: INTRODUCTION**

**Intro1.** Hello, my name is \_\_\_\_\_.

**I'm calling from the Center for Rural Studies at the University of Vermont.**

**We are calling Chittenden County residents, such as you, to learn about some household practices and public opinions.**

**Your household was randomly selected for our research study. The survey will take less than 10 minutes and your participation is completely voluntary.**

**Do you have time to answer some questions?**

1. Yes
2. No
77. Don't know
99. Refused

[IF NO] **Is there a time that would better for you?** [Record date and time]

**Intro2.** Are you 18-years-old or greater?

1. Yes
2. No
77. Don't know
99. Refused

[IF NO] **Is there someone else at home who is 18-years-old or greater?**

[IF NO] **Is there a better time to call?**

**Intro 3.** Thank you for agreeing to participate.

**Let me assure you that this is NOT a marketing survey. We are gathering information in the public interest, and while all of the individual answers will be kept confidential, a general report of the survey's findings will be made available to the public.**

**Again, thank you for agreeing to be part of this study.**

**Section II: Opinions**

**Intro 6. First, I have some questions about water quality in your area:**

**Q19. In general, compared to ten years ago, do you think that Lake Champlain is more polluted, less polluted or about the same?**

- 01 MORE POLLUTED
- 02 LESS POLLUTED
- 03 ABOUT THE SAME
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q20. Compared to ten years ago, do you think that your local streams and waterways are more polluted, less polluted or about the same?**

- 01 MORE POLLUTED
- 02 LESS POLLUTED
- 03 ABOUT THE SAME
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q21a. Now, thinking specifically about water in your area, water from your kitchen and bath -- can you tell me if that water gets treated at a sewage treatment plant, or does it run directly into creeks, rivers and Lake Champlain?**

- 01 TREATMENT PLANT
- 02 CREEKS/RIVERS/LAKE
- 03 SEPTIC SYSTEM
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q21b. And the water outside of your place of residence, from over-watered lawns and gardens, can you tell me where that drains to? [OPEN ENDED. INTERVIEWER: DO NOT READ CHOICES] {MUL=7}**

- 01 GOES TO TREATMENT PLANT
- 02 RUNS TO CREEKS/RIVERS/LAKE
- 03 RUNS INTO A STORM DRAIN
- 04 RUNS INTO THE SEWER
- 05 ABSORBED INTO GROUND
- 06 ABSORBED INTO THE GROUND AND ENTERS STORMDRAIN

- 07 OTHER
- 77 DON'T KNOW
- 99 REFUSE

**Q22. I'm going to mention some possible sources of water pollution. Please tell me if each has a great impact, some impact, very little impact, or no impact on water in your region.**

//RANDOMIZE LIST – Q22a thru Q22j//

**Q22.a. Business and industry?**

- 01 GREAT IMPACT
- 02 SOME IMPACT
- 03 VERY LITTLE IMPACT
- 04 NO IMPACT

[Do not read]

- 77 DON'T KNOW
- 99 REFUSED

**Q22.b. Residential septic systems?**

- 01 GREAT IMPACT
- 02 SOME IMPACT
- 03 VERY LITTLE IMPACT
- 04 NO IMPACT

[Do not read]

- 77 DON'T KNOW
- 99 REFUSED

**Q22.c. Construction of roads, houses and shopping centers?**

- 01 GREAT IMPACT
- 02 SOME IMPACT
- 03 VERY LITTLE IMPACT
- 04 NO IMPACT

[Do not read]

- 77 DON'T KNOW
- 99 REFUSED

**Q22.d. Wastewater treatment facilities?**

- 01 GREAT IMPACT
- 02 SOME IMPACT
- 03 VERY LITTLE IMPACT
- 04 NO IMPACT

[Do not read]

- 77 DON'T KNOW
- 99 REFUSED

**Q22.e. Farming?**

- 01 GREAT IMPACT

- 02 SOME IMPACT
- 03 VERY LITTLE IMPACT
- 04 NO IMPACT
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q22.f. Rain run-off from parking lots and roads?**

- 01 GREAT IMPACT
- 02 SOME IMPACT
- 03 VERY LITTLE IMPACT
- 04 NO IMPACT
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q22.g. Population growth in general?**

- 01 GREAT IMPACT
- 02 SOME IMPACT
- 03 VERY LITTLE IMPACT
- 04 NO IMPACT
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q22.h. Rain run-off from lawns and gardens?**

- 01 GREAT IMPACT
- 02 SOME IMPACT
- 03 VERY LITTLE IMPACT
- 04 NO IMPACT
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q22.i. Hosing sand, gravel, and other debris off of driveways and into street gutters?**

- 01 GREAT IMPACT
- 02 SOME IMPACT
- 03 VERY LITTLE IMPACT
- 04 NO IMPACT
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q22.j. Erosion from small home/garden construction projects?**

- 01 GREAT IMPACT

02 SOME IMPACT  
03 VERY LITTLE IMPACT  
04 NO IMPACT  
[Do not read]  
77 DON'T KNOW  
99 REFUSED  
//END RANDOMIZE//

### **SECTION III: BEHAVIOR**

#### **Intro4. Now, I need to know....**

##### **P1. What city or town do you live in?**

01 Burlington  
02 Shelburne  
03 Winooski  
04 Colchester  
05 Essex  
06 South Burlington  
07 Essex Junction  
08 Williston  
09 Milton  
88 Other  
77 DON'T KNOW  
99 REFUSED  
// IF PRE1=88, 77, 99, GO TO CLOSING//

##### **P2. Have you lived in your home for more than one year?**

01 YES  
02 NO  
[Interviewer: Do not read]  
77 DON'T KNOW  
99 REFUSED  
// IF PRE1=02, GO TO Q13//

##### **P3. Do you own or rent?**

01 OWN  
02 RENT  
[Interviewer: Do not read]  
77 DON'T KNOW  
99 REFUSED

##### **P4. Do you yourself decide how the grounds where you live are cared for?**

01 YES

02 NO

[Interviewer: Do not read]

99 REFUSED

// IF PRE3=01, GO TO Q1; IF PRE3=02 OR 99, GO TO Q13//

**Intro5. I'm going to ask you some question about your yard and how you care for it. When we talk about how you care for it, I'd like you to try to think about what your household typically did this summer. Okay?**

**[INTERVIEWER: IF THEY HEDGE BECAUSE THEY ARE NOT THE PERSON WHO TYPICALLY CARES FOR THE YARD, READ THE FOLLOWING:] I have questions about things that different people in your household may have done. It's not vital that I speak to the person who actually did the work as long as you're familiar with the work that's typically done around your house.**

**First of all.....**

**Q1. Did you (or your family) maintain your lawn yourself, or did you hire a lawn care company?**

01 SELF

02 COMPANY

03 NO LAWN

[Do not read]

77 DON'T KNOW

99 REFUSED

// IF Q1=02, 03, 77, OR 99 GO TO Q3//

**Q2. When you mowed your lawn, about how often did you bag or rake the clippings?**

01 ALWAYS

02 OFTEN

03 SOMETIMES

04 NEVER

[Do not read]

77 DON'T KNOW

99 REFUSED

**Q3a. The following are some common things that people do to deal with bug problems. As I read the possibilities, please tell me how you typically dealt with bug problems. Did you...**

**[CHOOSE ONE]**

// ROTATE CATEGORIES 01 THRU 04//

- 01 Spray the entire problem area regularly as a preventive measure,
- 02 Kill bugs by hand using no chemicals,
- 03 Hire a professional,
- 04 Spray areas only during problems, or

//END ROTATE//

- 05 Something else? CHEMICAL [IF DISTINCTIVE FROM 01—04]
- 06 Something else? NON CHEMICAL

- 07 DO NOTHING ABOUT BUG PROBLEMS
- 88 NO BUG PROBLEMS

[Do not read]

- 77 DON'T KNOW
- 99 REFUSED

//Ask Q3b thru Q3j, if Q3a = 01,03,04,05//

**Q3b. What were these pesticides used on? Where they used on ..... {MUL=7}**

- 01 THE LAWN
- 02 A VEGETABLE GARDEN
- 03 A FLOWER GARDEN
- 04 LANDSCAPE AREAS
- 05 BUGS IN THE HOUSE, SUCH AS SPIDERS OR ANTS
- 06 FLEAS
- 07 OTHER

[Do not read]

- 77 DON'T KNOW
- 99 REFUSED

**Q3j. On a scale from 1 to 10 where 1 means 'Not at all important' and 10 means 'Extremely important', how important is it to you to have a yard free of bug damage?**

**[DO NOT READ NUMBERS]**

- 01 1 NOT IMPORTANT
- 02 2
- 03 3
- 04 4
- 05 5
- 06 6
- 07 7
- 08 8
- 09 9

10 10 EXTREMELY IMPORTANT

[Do not read]

77 DON'T KNOW

99 REFUSED

**Q4a. Now I'm going to read a similar list that describes some common things that people do to deal with weed problems. Please tell me how you typically dealt with weeds. Did you...**

**[INTERVIEWER: CHOOSE ONE]**

// ROTATE 01 THRU 04//

01 Spray the entire area regularly as a preventative measure,

02 Pull all weeds by hand using no chemicals

03 Hire a professional,

04 Spray areas only during problems, or

//END ROTATE//

05 Something else? CHEMICAL [USE ONLY IF TRULY DISTINCTIVE FROM 1-4]

06 Something else? NON-CHEMICAL [USE ONLY IF DISTINCTIVE FROM 1-4]

07 DO NOTHING ABOUT WEED PROBLEMS

88 NO WEED PROBLEMS

[Do not read]

77 DON'T KNOW

99 REFUSED

//Ask Q4b thru Q7, if Q4a = 01,03,04,05//

**Q4b. On a scale from 1 to 10 where 1 means 'Not at all important' and 10 means 'Extremely important', how important is it to you to have a weed-free yard?**

**[DO NOT READ NUMBERS]**

01 1 NOT AT ALL IMPORTANT

02 2

03 3

04 4

05 5

06 6

07 7

08 8

09 9

10 10 EXTREMELY IMPORTANT

[Do not read]

77 DON'T KNOW

99 REFUSED

**Q7. Have you typically used a combined fertilizer and weed killer- a 'weed and feed' product?**

01 YES

02 NO

[Do not read]

77 DON'T KNOW

99 REFUSED

**Q8. Did you or anyone in your household use any other fertilizers in your yard?**

01 YES

02 NO

[Do not read]

77 DON'T KNOW

99 REFUSED

// IF Q8=02, 77 or 99, GO TO Q11//

**Q9. What was the fertilizer used on? Was it.... {MUL=5}**

01 THE LAWN

02 A VEGETABLE GARDEN

03 A FLOWER GARDEN

04 LANDSCAPE AREAS

05 SOMEWHERE ELSE

[Do not read]

77 DON'T KNOW

99 REFUSED

**Q10. And when you used fertilizer, did you use a slow-release product or a regular product?**

01 SLOW RELEASE

02 REGULAR

[Do not read]

77 DON'T KNOW  
99 REFUSED

**Q11a. When you watered your lawn, how often did you notice puddles forming or water running off of it? Would you say...**

01 ALWAYS  
02 OFTEN  
03 SOMETIMES  
04 NEVER  
05 DON'T WATER THE LAWN

[Do not read]

05 Don't water lawn  
77 DON'T KNOW  
99 REFUSED

**Q11b. Is there any water – either a stream or lake – on or next to your property?**

01 YES  
02 NO

[Do not read]

77 DON'T KNOW  
99 REFUSED

// IF Q11.2=02, 77, or 99 GO TO Q12//

**Q11c. About how many times each year did you clear vegetation along that water way?**

01 [Enter response]  
88 NONE

[Do not read]

77 DON'T KNOW  
99 REFUSED

**Q12. When you had yard waste to dispose of, how did you most often dispose of it? Did you...**

01 BURN IT  
02 COMPOST IT  
03 PUT IT IN A TRASH CONTAINER  
04 SOMETHING ELSE

[Do not read]

77 DON'T KNOW  
99 REFUSED

**Q13. How many, if any, dogs do you have?**

01 [Enter number]  
88 NONE  
[Do not read]  
77 DON'T KNOW  
99 REFUSED  
// IF Q13=88, 77, or 99 GO TO Q16//

**Q14. When you took your dog(s) for a walk, did you typically do anything in particular to dispose of your pet's waste?**

[INTERVIEWER: DO NOT PROMPT WITH CHOICES.]

01 PUT IT IN TRASH  
02 NO  
03 DON'T WALK THE DOG  
66 OTHER  
77 DON'T KNOW  
99 REFUSED

**Q15. When your dog(s) left waste around your property, did you typically do anything in particular to dispose of it?**

[INTERVIEWER: DO NOT PROMPT WITH CHOOICES.]

01 PUT IT IN TRASH  
02 FLUSH DOWN TOILET  
66 OTHER  
77 DON'T KNOW  
99 REFUSED

**Q16a. How often, if at all, did you or people in your household wash your cars at home?**

[INTERVIEWER: DO NOT PROMPT WITH CHOICES.]

01 ONCE A WEEK OR MORE  
02 2-3 TIMES A MONTH  
03 ABOUT ONCE A MONTH  
04 LESS THAN ONCE A MONTH  
05 NEVER  
77 DON'T KNOW  
99 REFUSED

//IF Q16a=01, 02 GOTO Q16b. IF Q16a=03, 04, 05, 77, 99 GOTO Q17a //

**Q16b. When you or others in your household have washed their cars at your house, how often were they washed on paved surfaces (AS OPPOSED TO GRAVEL, DIRT, OR GRASS)? Would you say...**

- 01 ALWAYS
- 02 OFTEN
- 03 SOMETIMES
- 04 NEVER
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q17a. Did you or others in your household work on any motors or motor vehicles on your property?**

- 01 YES
- 02 NO {skip to Q19}
- 77 DON'T KNOW {skip to Q19}
- 99 REFUSED {skip to Q19}

//Ask if Q17a = 01//

**Q17b. How often would you say you or someone else has worked on motors or motor vehicles on your property? Would you say....**

- 01 ALWAYS
- 02 OFTEN
- 03 SOMETIMES

- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

// IF Q17.2= 77, OR 99 GO TO Q19 //

**Q18a. When you or others changed the oil, how was it typically disposed of?**  
[INTERVIEWER: DO NOT PROMPT WITH CHOICES.]

- 01 DUMPED ON PROPERTY OR STREET
- 02 RECYCLED/PUT IN A CONTAINER
- 03 DIDN'T CHANGE THE OIL
- 77 DON'T KNOW
- 99 REFUSED

**Q18b. When you or others changed the antifreeze, how was it typically disposed of?**  
[INTERVIEWER: DO NOT PROMPT WITH ANSWERS. ]

- 01 DUMPED ON PROPERTY OR STREET
- 02 RECYCLED/PUT IN A CONTAINER
- 03 DIDN'T CHANGE THE ANTIFREEZE
- 77 DON'T KNOW
- 99 REFUSED

#### **Section IV: Respondent Characteristics**

**Intro 6. Finally, I have a few questions about yourself:**

**Q23. Which of the following is your age category? Are you...**

- 01 UNDER 20
- 02 21-45
- 03 46-60
- 04 OVER 60
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q24. What is the highest level of education you've completed?**

- 01 HIGH SCHOOL, GED, OR LESS
- 02 COLLEGE 1 YEAR TO 3 YEARS (SOME COLLEGE OR TECHNICAL SCHOOL)
- 03 FOUR YEAR COLLEGE DEGREE
- 04 GRADUATE DEGREE
- [Do not read]
- 77 DON'T KNOW
- 99 REFUSED

**Q25. How long have you lived at your present residence?**

- 01 [Enter response/NUMBER OF YEARS]
- [Do not read]
- 77 DON'T KNOW

99 REFUSED

**Q26. What is your gender?**

[Interviewer: ASK IF NECESSARY OTHERWISE JUST CODE]

01 MALE

02 FEMALE

[Do not read]

77 DON'T KNOW

99 REFUSED

**Intro 7. Thank you for taking the time to help us with this survey. Have a nice afternoon/evening.**