



Working together, restoring the river

RESULTS OF THE 2022 WATER QUALITY CHANGES IN THE ROUGE RIVER SURVEY


WATER QUALITY CHANGES IN THE ROUGE RIVER 2022 SURVEY
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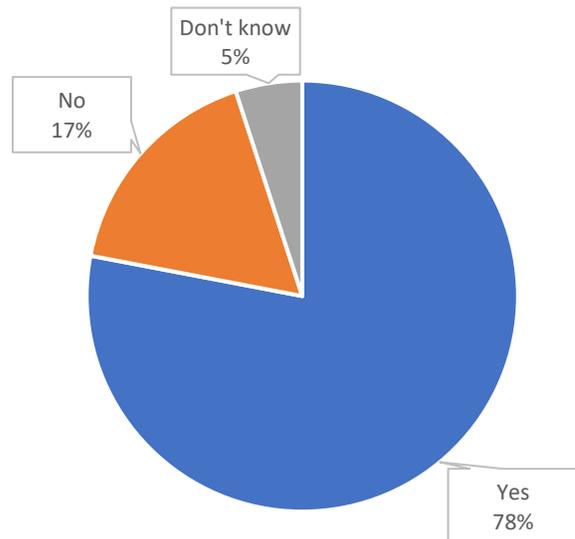
* Do you live in a watershed?

Yes
 No
 Don't know

Progress bar: [25%]

Prev Next

Do You Live in a Watershed?




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* Where does the rain water running off your property drain to?

A river, stream or lake
 A wastewater treatment plant
 Don't know

Progress bar: [25%]

Prev Next

March 2023



RESULTS OF THE 2022 WATER QUALITY CHANGES IN THE ROUGE RIVER SURVEY

INTRODUCTION

The Alliance of Rouge Communities (ARC), a 501(c)(3) organization, is a voluntary public watershed entity currently comprised of 35 municipal governments (i.e. cities, townships and villages), three counties (Wayne, Oakland and Washtenaw), Henry Ford College, University of Michigan-Dearborn, Schoolcraft College and cooperating partners (i.e. other organizations) as authorized by Part 312 (Watershed Alliances) of the Michigan Natural Resources and Environmental Protection Act (MCL 324.101 to 324.90106) as amended by Act No. 517, Public Acts of 2004.

The purpose of the ARC is to provide an institutional mechanism to encourage watershed-wide cooperation and mutual support to meet water quality permit requirements and to restore beneficial uses of the Rouge River to the area residents.

The ARC members' NPDES permits for stormwater discharges from municipal separate storm sewer systems (MS4) included a Collaborative Public Education Plan (PEP). As part of the Collaborative PEP the ARC conducted a public awareness survey from May 31, 2022, until August 31, 2022, to evaluate changes in public awareness and behavior as it relates to the Rouge River. This report summarizes the results of that survey and compares some of the responses to similar questions in surveys done in 1993 by the Rouge River National Wet Weather Demonstration Project, 1999 by the University of Michigan and most recently 2017 by the ARC.

METHODOLOGY

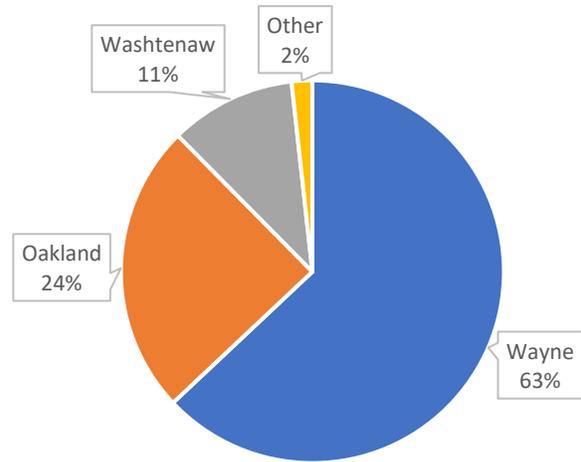
In May 2022, ARC Staff developed an online survey using SurveyMonkey which received 3,096 responses to a 28-question survey. The intent of the survey was to 1) ascertain residents' current attitudes and knowledge about the Rouge River and its watershed, 2) explore changes in attitudes and knowledge that have occurred since similar surveys conducted in 1993, 1999, and 2017 and 3) determine if any modifications should be made to the Collaborative PEP to address ineffective implementation.

The average time required to complete the survey was 9 minutes. The ARC promoted the survey on the ARC website and boosted it on Facebook where it had a reach of 11,300. The ARC also shared the link at stewardship workshops in 2022 which focused on public awareness of the Rouge River and water quality issues and encouraged participants to take the ARC's survey.

Appendix A presents the survey questions and the responses, by percentage of total responses to each. Appendix B shows the comparison between the 2017 and 2022 surveys which were both completed through SurveyMonkey.

The comparisons presented in this report are based on the 3,096 responses with 63% of responses from Wayne County, 24% from Oakland County, 11% from Washtenaw County (see Figure 1) and 2% outside the Rouge River Watershed with 55% of them living at their current residence for 4-6 years and 19% at their current residence for 10 or more years.

Figure 1: Survey Participation by County

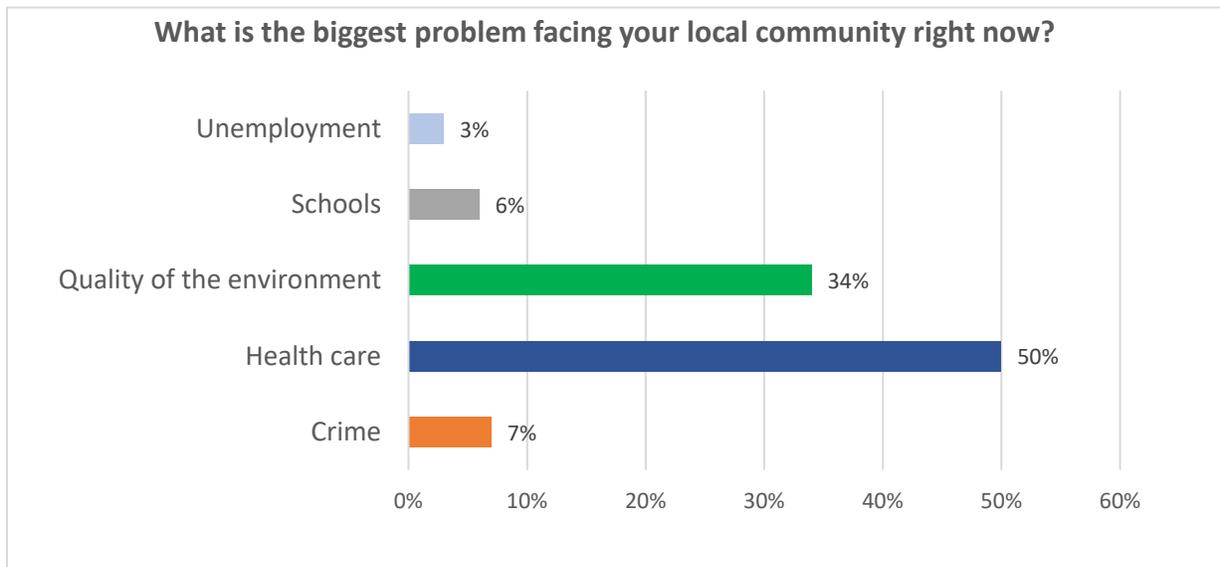


FINDINGS

Issues of Concern

Survey respondents were asked which of five **issues (crime, health care, quality of the environment, schools and unemployment) they view as the biggest problem facing their local community right now**. Overall health care was the biggest problem expressed most often, followed by quality of the environment and crime. Figure 2 presents the overall results. Quality of the environment was the issue of concern for both Washtenaw and Oakland County and for Wayne County health care was the biggest issue of concern with quality of the environment second.

Figure 2: Overall Issues of Concern



River: Knowledge and Use

Knowledge

Several questions were asked on the public’s general knowledge of watershed concepts.

Overall, when asked **do you live in a watershed?** 78% of respondents said yes, 17% said no, and 5% did not know as shown in Figure 3. The County breakdown is shown in Table 1.

Figure 3: Do You Live in a Watershed?

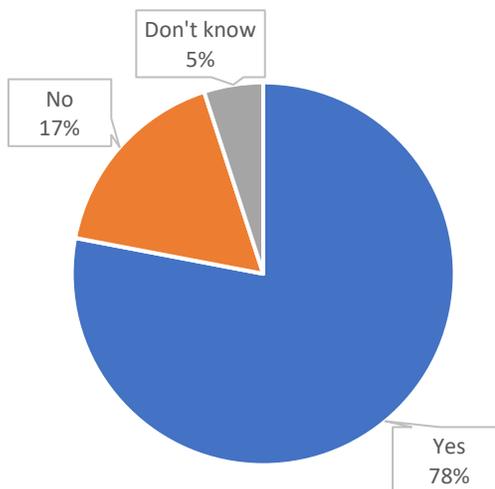


Table 1: County Breakdown for Do You Live in a Watershed?

County	YES	NO	DON'T KNOW
OVERALL	78%	17%	5%
Wayne	81%	16%	3%
Oakland	73%	19%	8%
Washtenaw	69%	18%	13%

The survey asked **where does the rainwater running off your property drain to?** Since some of the watershed is served by combined sewers which drain to wastewater treatment plants, those responses from combined sewer areas (Detroit, Redford Twp, Birmingham and Dearborn) were filtered out for this question. However, it should be noted that this resulted in a less than 1% change in the results. 50% of the overall respondents said the rainwater drained to a wastewater treatment plant. 45% said the water drains to a river, stream or lake. 5% said they didn’t know where the rainwater drained to. The County breakdown is shown in Table 2.

Table 2: County Breakdown for Where Does the Rainwater Running off Your Property Drain To?

County	RIVER/STREAM/LAKE	WASTEWATER TREATMENT PLANT	DON'T KNOW
OVERALL	45%	50%	5%
Wayne	42%	55%	3%
Oakland	51%	40%	9%
Washtenaw	51%	40%	9%

The survey asked **how familiar are you with the Rouge River Watershed and its network of rivers and streams running throughout southeast Michigan.** The majority of respondents, 66%, stated they were somewhat familiar with the Rouge River with 24% stating they were very familiar and 9% reporting that they were not very familiar with the Rouge River watershed and its tributaries.

Use

The survey also gauged respondents use of public areas that included a river or stream. Most respondents (96%) reported **using or visiting a park or other place with a river or stream running through it.** Biking and walking/running/jogging are the number one and two uses respectively, with

canoeing, boating or tubing in the river a close third. Other activities that were not answer options but were written in were invasive species removal and community volunteer and monitoring activities.

Flooding, Water Quality and Pollution Sources

Flooding

When asked **to rate the significance of the damage related to high flows including flooding of property or stream bank erosion in the Rouge River in the area where they live** most respondents, 51% felt that high flows cause somewhat significant damage while 23% felt that the damage from high flows in the Rouge River was not very significant. The remainder of the respondents felt it was very significant (14%), not a problem (9%) and 4% did not know if the damage was significant where they live.

The majority of respondents (39%) felt the flooding of the Rouge River and the related problems are the same as five years ago.

Water Quality

The majority (64%) of respondents believe that **over the past fifteen (15) years the water quality of the Rouge River is** either **much better** (13%) or **slightly better** (51%) as seen in Figure 4. 17% of the respondents felt the water quality is **the same** and 16% of the respondents felt the water quality in the Rouge River was **slightly worse** and 3% felt it was **much worse**.

When asked if poor water quality caused polluted swimming areas, contaminated fish, loss of desirable fish species, reduced beauty of lakes or streams, reduced quality/availability of water recreation activities or lower property values respondents top three causes were:

1. Loss of desirable fish species
2. Reduced beauty of lakes or streams
3. Contaminated fish

These top three were followed by:

4. Reduced quality/availability of water recreation activities
5. Polluted swimming areas
6. Lower property values

Respondents were asked **how they rate the water quality of the Rouge River** overall and for various activities. 48% of respondents felt that the overall water quality of the Rouge River was fair with 39% rating it as good and 13% rating it as poor. Table 3 shows the results for the other activities.

Figure 4: Over the Past 15 Years the Water Quality of the Rouge River is

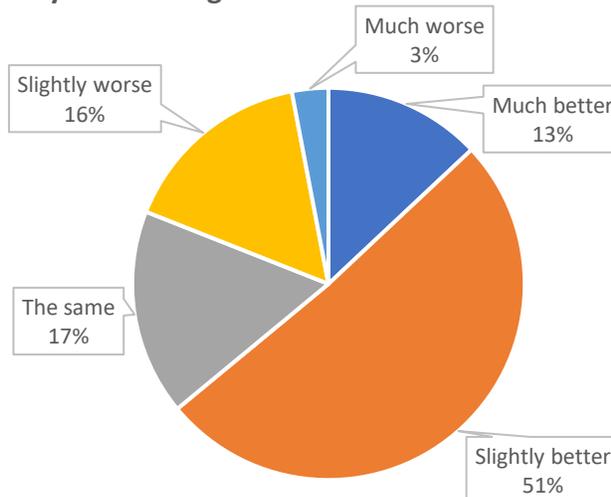


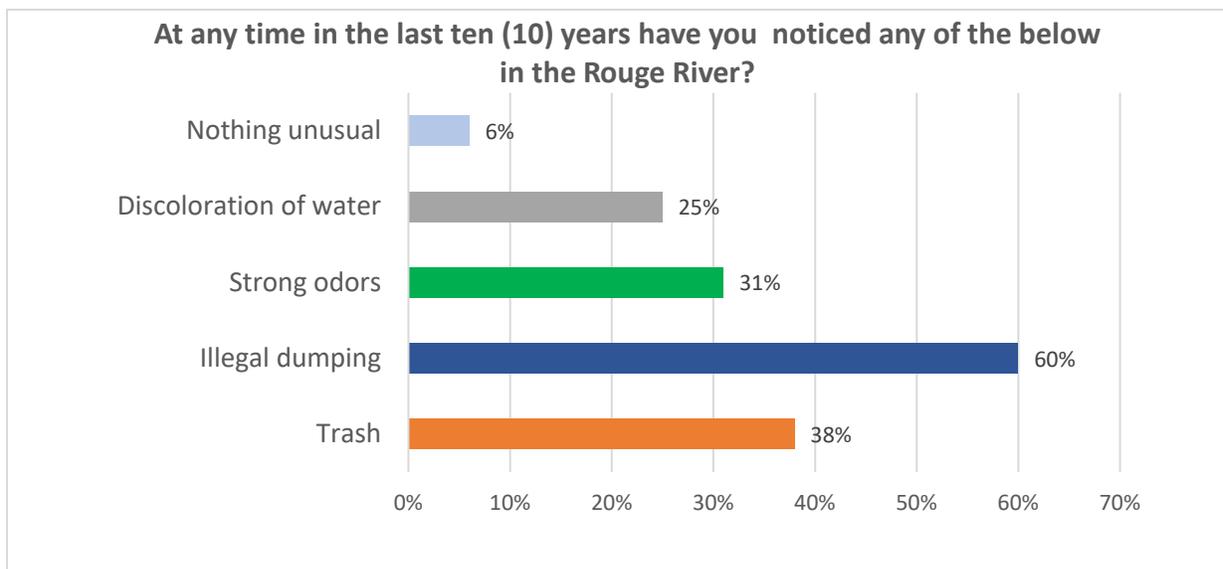
Table 3: How Would You Rate the Water Quality of the Rouge River?

WATER QUALITY FOR	GOOD	FAIR	POOR
Overall	39%	48%	13%
Canoeing/kayaking/boating	36%	46%	18%
Eating locally caught fish	30%	43%	28%
Swimming	29%	43%	28%
Picnicking and family activities	33%	47%	19%
Fish habitat	32%	45%	23%
Scenic beauty	34%	47%	18%

Pollution Sources

When asked if *at any time in the last ten (10) years you have noticed trash, illegal dumping, strong odors or discoloration in the Rouge River* the majority of respondents reported that they noticed illegal dumping in the river (see Figure 5).

Figure 5: Pollution of the Rouge River



When asked to *compare the problems in their area to the sources of water quality pollution across the country* respondents top two problems were:

1. Droppings from geese, ducks and other waterfowl
2. Chemicals, oils, fertilizers and other polluting materials that are found on the surface of parking lots, streets, farms and lawns washed into the river by rain

The *problems caused by stormwater runoff (rain events & snow/ice melt) in the Rouge River* were rated by the respondents as somewhat significant (58% of respondents), followed by not very significant

(17% of respondents). In addition, 14% considered stormwater runoff very significant, 7% considered it not a problem and 4% responded that they did not know if stormwater runoff was a significant problem.

Public Involvement and Information

Individual Actions

Respondents were asked ***if they have changed their actions affecting the Rouge River***. Half or more than half of respondents reported that they changed the type, amounts or application of lawn and garden fertilizers, pesticides or other chemicals; that they take used motor oil, antifreeze, batteries or other household hazardous materials to recycling facilities; that they reduced the use of detergents or other chemicals for home car washings; that they pick up pet waste and dispose of it properly; that they stopped disposing of any waste material into catch basins and storm drains; that they have installed a rain barrel; disconnected downspouts from storm drains to allow roof runoff to seep into the ground; and that they have installed a rain garden.

Education and Information

The survey presented several phrases encouraging stewardship of the Rouge River and asked respondents if they have seen or heard any of them. The top three phrases seen or heard were:

1. Help keep our rivers clean
2. Storm drains aren't garbage cans
3. Rouge River, ours to protect

When asked ***what you consider the most important things to educate the public on*** the overall respondents top five were:

1. How to apply and dispose of pesticides/herbicides/fertilizers
2. Impacts of businesses and industries on stormwater runoff
3. How to handle pet waste
4. Connection of the storm sewer system to local waterbodies
5. How to report illegal dumping

The majority of Wayne, Oakland and Washtenaw County responders (59%) ranked how to apply and dispose of pesticides/herbicides/fertilizers as the most important thing to educate the public on. The second most important thing to educate the public on in Wayne County was how to handle pet waste. In Oakland County the second most important thing to educate the public on was the connection of the storm sewer system to local waterbodies. Finally in Washtenaw County the second most important thing to educate the public on was the impacts of businesses and industries on stormwater runoff.

When seeking information about water quality respondents stated the below top five avenues:

1. Internet (59%)
2. Television (31.7%)
3. Newspapers/magazines/newsletters (31.6%)
4. Billboards (30%)
5. Brochure/fact sheet (26%)

Priorities

The ARC survey asked respondents **how much they would spend to improve the water quality in the Rouge River annually through local taxes or fees**. Overall, 98% of respondents said they were willing to pay something to improve water quality in the Rouge River. 46% of respondents said they would be willing to pay \$5-\$10 a month, 41% said they would be willing to spend \$10-\$20 a month, 11% said \$1-\$4 a month and 2% said they did not want to pay.

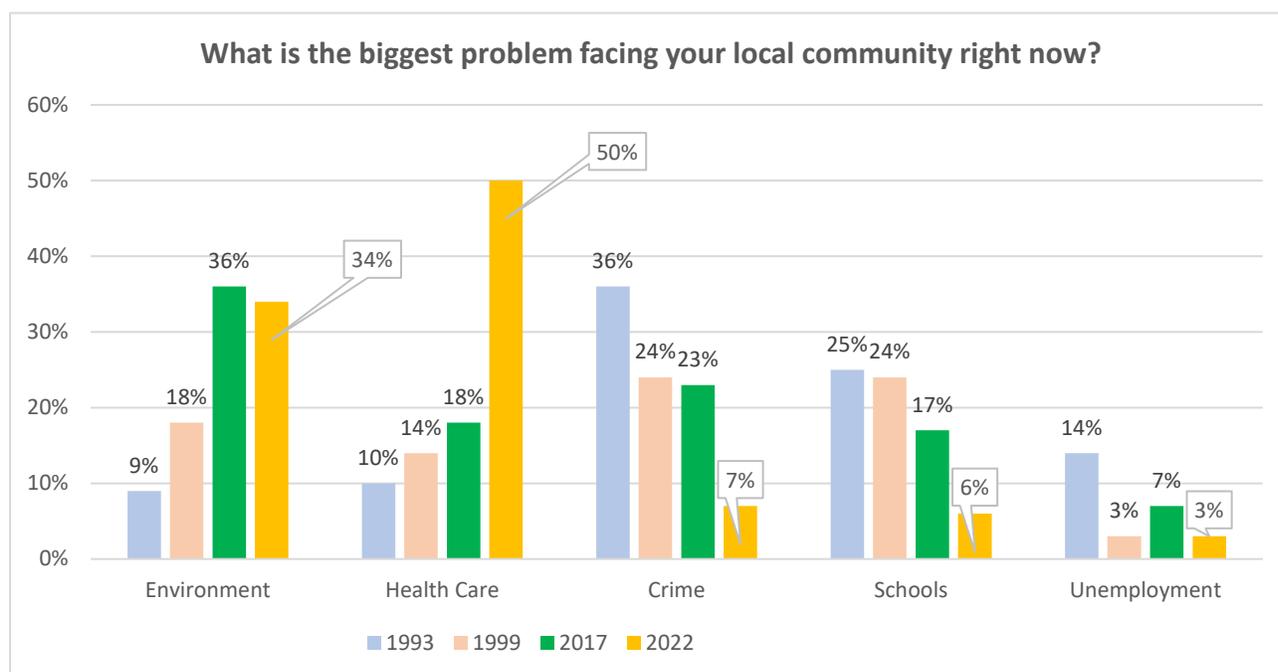
COMPARISONS WITH FINDINGS FROM OTHER SURVEYS

Issues of Concern

The 2017 and 2022 ARC surveys were structured to show trends in similar questions in relationship to both the 1993 Rouge Project public opinion telephone survey, and the 1999 University of Michigan mail survey. The average age of the 1999 survey respondent was 30-60 and the average age of the 2017 respondent was similar with 36% aged 30-45 and 27% aged 46-59. The ARC's 2022 survey's average age was 30-45 with 55% of respondents. However, 29% of the 2022 survey respondents were age 19-29.

Since the 1993 and 1999 surveys, there continues to be an overall decline in concern for crime, schools and unemployment. Health care and the environment continue to be a concern for the majority of those that responded to the 2022 survey as shown in Figure 6.

Figure 6: Issues of Concern



River: Knowledge and Use

Knowledge of the Rouge River watershed and its network of rivers and streams did not change much from 1993 to 1999 but use of nearby parks with rivers or streams running through them had risen. This suggested that despite park use being up, not all residents associated the streams and rivers running

through them with the Rouge River Watershed. Like the 1999 and 2017 survey, the 2022 survey showed an increase with 24% of respondents were very familiar with the Rouge River Watershed. The 2017 survey showed that 56% of respondents were either very or somewhat familiar with the watershed and its network of rivers. The 2022 survey showed a vast increase from this with 90% of the respondents being very or somewhat familiar with the watershed and its network of rivers.

In addition, the results of the 2022 survey show a similar pattern with 96%, an increase from 85% in 2017 and 69% in 1999, of respondents saying they had visited a park with rivers or streams running through them. In 1993 and 1999 picnicking was ranked highest with walking/running/jogging ranked second. In 2017 walking/running/jogging is ranked highest with picnicking second and biking a close third which supports the continued development and use of trails running along the Rouge River. The 2022 survey shows the continued use and benefit of the trails being developed along the Rouge River with biking and walking, running or jogging the top two uses of the river or parks. In 2022 canoeing, boating or tubing in the river was a close third which shows removing log jams and dams along the Rouge River is a benefit to both the habitat and humans.

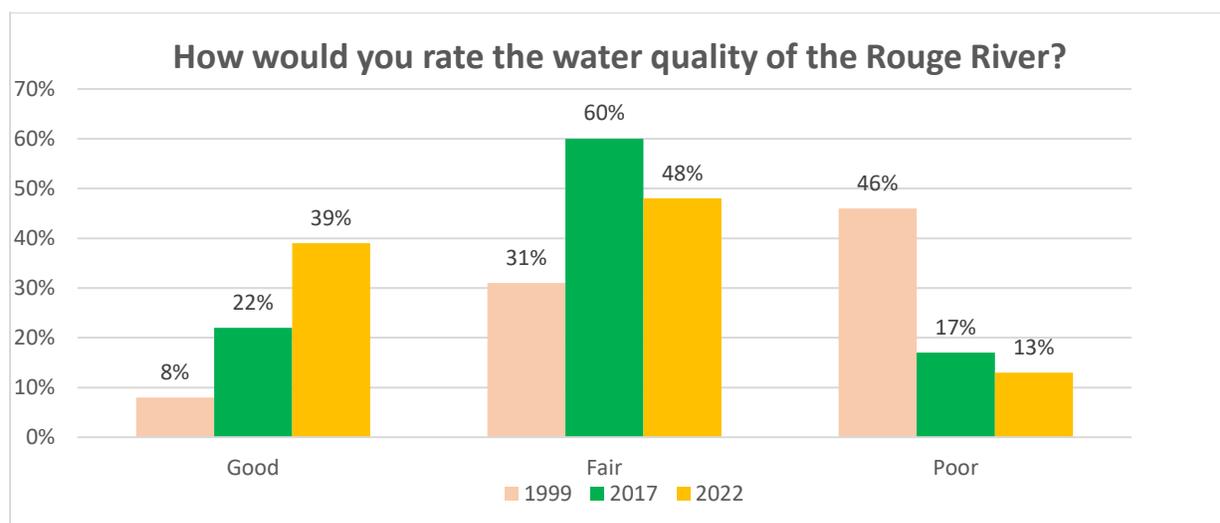
In 1999 18% and in 2017 37% of respondents felt the damage related to high flows was somewhat or very significant. This trend continued in the results from the 2022 survey with 65% of respondents feeling that the damage related to high flows was somewhat or very significant.

16% of respondents in 1999 and 32% of respondents in 2017 felt that over the past five years the flooding of the Rouge River and the related problems are slightly or much better. The 2022 survey showed that 41% of respondents felt that over the past five years the flooding of the Rouge River and the related problems are slightly or much better.

Water Quality and Pollution Sources

In 1999 respondents rated the overall water quality of the Rouge River as poor, in 2017 respondent’s opinion of water quality in the Rouge River improved with the majority rating the water quality fair as shown in Figure 7. The results from the 2022 survey show that even though the majority of respondents still are rating the water quality fair the number of people rating it as good is increasing.

Figure 7: Overall Rating of Water Quality in the Rouge River



The majority of the 1999 and 2017 survey respondent’s perception of the water quality of the Rouge River is that it has stayed the same over the last 15 years (the 1999 survey asked over the last 5 years). The 2022 survey shows that the majority (56%) of respondents felt that the water quality of the Rouge River over the last 15 years is slightly better and 10% felt that it was much better. This continues to support the overall water quality rating improvement from poor (1999) to fair (2017 and 2022). It also supports that people are seeing the improvements in the watershed with the continued increase in those rating the overall water quality as good. As shown in Figure 7.

Table 4 shows the survey results for the top three major pollution sources from the 1993, 1999, 2017 and 2022 surveys. As stated in the 1999 survey comparisons to the 1993 survey, stormwater was not cited as a major problem. The trend shows stormwater continues to be a concern.

Table 4: Which sources of water quality pollution are a problem in your area?

1993	1999	2017	2022
1. Business and industry	1. Business and industry 2. CSOs 3. Stormwater	1. Stormwater 2. Illegal dumping 3. Bird droppings	1. Bird droppings 2. Stormwater 3. Soil erosion

In 1999 74% and in 2017 61% of respondents rated the significance of problems caused by stormwater runoff as either somewhat or very significant. In 2022 72% rated the significance of problems caused by stormwater runoff as either somewhat or very significant.

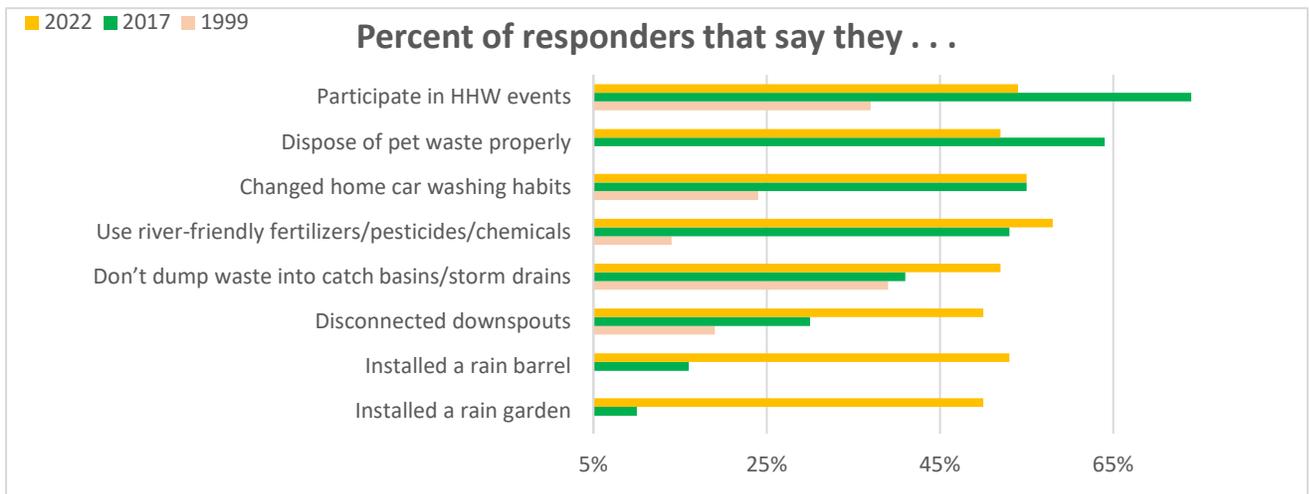
Public Involvement

When comparing the 1999 and 2017 results to the 2022 results for the top three phrases seen or heard by survey respondents encouraging stewardship of the Rouge River the responses correspond to the educational messages being promoted during those years. In 1999 the top three phrases included “our actions affect the Rouge River”, “storm drains aren’t garbage cans” and “use your head, you live in a watershed”. The 2017 top three phrases included “help keep our rivers clean”, Rouge River, ours to protect” and “drains to river (painted message on storm drains)”. The top three phrases seen or heard from the 2022 survey were “Help keep our river clean”, “storm drains aren’t garbage cans”, and “Rouge River, ours to protect”.

In 1999 the top three ways survey respondents were likely to seek information about water quality were television, radio and newspapers/magazines/newsletters (note that in the 1999 survey internet was not an option.) In the 2017 survey respondents stated that the top three ways were the internet, brochure/fact sheet and newspapers/magazines/newsletters respectively. The 2022 survey may reflect the fact that our audience has grown younger with more respondents aged 19-29. The top three ways to receive information were the internet, television, and newspapers/magazines/newsletters in that order.

Figure 8 shows the 1999, 2017 and 2022 activities that responders reported doing at home that improve water quality and benefit the environment. The results show that more than 50% of respondents report doing many of the activities with an overall increase in most activities.

Figure 8: Citizen Activities Supporting Water Quality Increased from 1999 to 2017

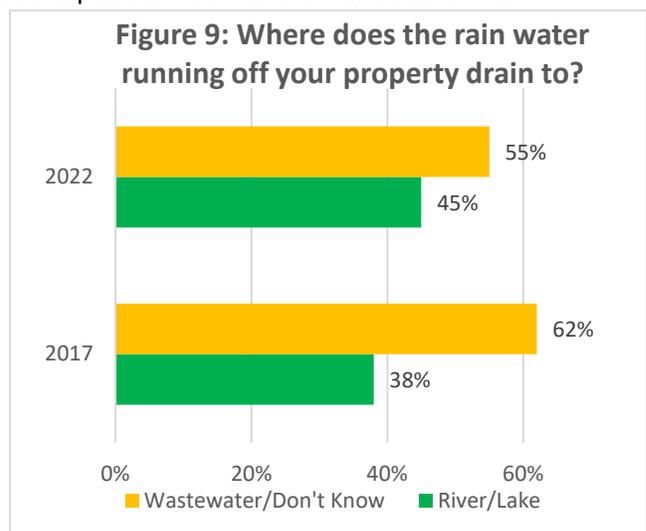


CONCLUSIONS

The overall results of the 2022 survey suggest that the ARC’s focus should be to continue to educate the public on watershed and stormwater concepts and what they mean, encouraging activities the public can do to help protect the Rouge River, and promoting restoration projects and the continued improvement of water quality in the Rouge River.

The review of the data from the 2022 public opinion survey and comparisons with the 1993, 1999 and 2017 surveys lead to several additional conclusions detailed below.

- The ARC audience has grown younger with the majority of respondents being between the age of 19 and 45. This supports the positive effect of the ARC’s expansion of its website and Facebook.
- Even though the percentage of people that know they live in a watershed has increased from 32% in 2017 to 78% in 2022, the confusion remains on where the rainwater running off their property goes. With 55% in 2022 saying it goes to a wastewater treatment plant or that they don’t know and 45% saying it goes to a river, stream or lake (see Figure 9).
- The number of people that believe that the water quality of the Rouge River is good has increased. This was also consistent when the majority of respondents felt that over the past 15 years the water quality of the Rouge River was either much better or slightly better. With



continued messaging the next survey could show the majority of people rate the water quality good!

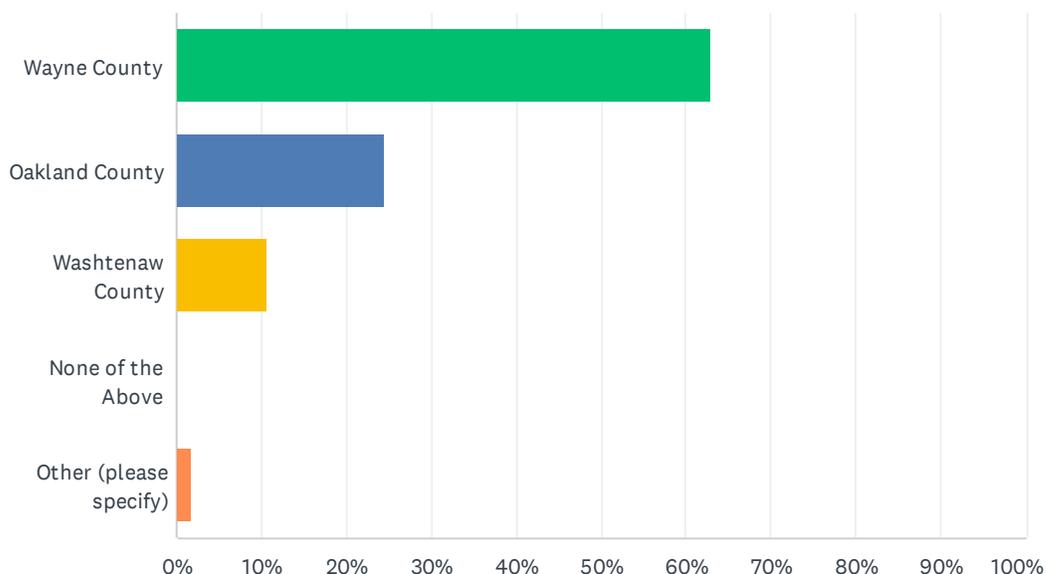
- The number of people that are taking active measures to improve water quality has increased dramatically from 2017 to 2022. More people are focusing on what they can do at home to protect water quality including not disposing of any waste material into a catch basin or storm drain, disconnecting downspouts. In addition people continue to install rain gardens and rain barrels which were not items surveyed in the 1999 survey.
- In the 2022 survey, the number of people very familiar with the Rouge River and its tributaries increased from the 2017 survey.
- 2022 respondents ranked stormwater as the #2 major source of water quality pollution. In 2017 respondents ranked stormwater as #1 and in 1999 it was #3. The question choice was stated as “chemicals, oils, fertilizers, and other polluting materials that are found on the surface of parking lots, streets, farms and lawns washed into the river by rain” (the word stormwater not used). Then when asked “How significant would you rate the problems caused by stormwater runoff (rain events & snow/ice melt) in the Rouge River?” 74% of 1999 respondents felt the problems were somewhat or very significant (who ranked stormwater #3) and in 2017 when respondents ranked stormwater #1, only 61% felt the problems caused by stormwater were somewhat or very significant. 2022 results showed that 72% felt the problems caused by stormwater were somewhat or very significant. In addition, when respondents were asked “Where does the rainwater running off your property drain to?” (the word stormwater not used again) most respondents in 2017 and 2022 didn’t know (see Figure 9). Educating the public on what the different words mean should continue to be an important focus moving forward along with the connection between rainwater and the river. 2022 data shows that the ARC’s message is making progress; more people knew rainwater goes to a river, stream, or lake.
- The 2022 survey shows that respondents felt that water quality of the Rouge River improved in specific areas including: for canoeing/kayaking/boating; for eating locally caught fish; for swimming; for fish habitat; and for scenic beauty. This is a good indicator that the sharing of the restoration activities being completed through EPA GLRI funding on the ARC’s website and Facebook are having a positive effect. This was also an increase from the 2017 survey results.
- The 2022 survey supports that citizens understand more now, compared to 2017, about the significance of the damage related to high flows in the Rouge River and feel that improvements are being made to control the high flows.
- When comparing the 2017 and 2022 top three phrases seen or heard by survey respondents encouraging stewardship of the Rouge River it becomes clear that citizens are retaining the educational messages. The top messages in the 2022 survey are consistent with the ARC’s current public education campaigns.
- Continued internet and social media efforts are important as 59% of the people surveyed in 2022 said they use the internet when seeking information about water quality. The survey also showed that 30% feel billboards are a good way to learn about water quality. This supports the ARC’s planned billboard campaign which begins in 2024.
- The 2022 survey continues the trend from 2017 that the respondents support spending money through local taxes or fees to improve the water quality in the Rouge River.

APPENDIX A

2022 DETAILED SURVEY QUESTIONS AND RESULTS WATER QUALITY CHANGES IN THE ROUGE RIVER

Q1 Where do you live?

Answered: 3,096 Skipped: 0



ANSWER CHOICES	RESPONSES
Wayne County	62.98% 1,950
Oakland County	24.61% 762
Washtenaw County	10.66% 330
None of the Above	0.00% 0
Other (please specify)	1.74% 54
TOTAL	3,096

#	OTHER (PLEASE SPECIFY)	DATE
1	United States, Montana, Great Falls	8/31/2022 6:24 PM
2	Lapeer County	8/11/2022 11:45 AM
3	Sterling Heights	8/10/2022 10:29 AM
4	Oshawa	7/14/2022 7:08 PM
5	US MA Chicopee	7/10/2022 10:20 PM
6	oregon	7/9/2022 2:31 AM
7	oregon	7/9/2022 2:30 AM
8	oregon	7/9/2022 2:29 AM
9	oregon	7/9/2022 2:27 AM
10	oregon	7/9/2022 2:23 AM
11	Alaska	6/28/2022 2:44 AM

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12	mead	6/27/2022 9:30 PM
13	Macomb	6/27/2022 6:26 AM
14	Southfield	6/20/2022 9:32 PM
15	New York	6/20/2022 5:04 AM
16	Milwaukee	6/18/2022 10:09 PM
17	maple valley	6/18/2022 8:41 AM
18	Warrington	6/18/2022 5:58 AM
19	Daly City	6/18/2022 5:58 AM
20	Gadsden	6/18/2022 5:58 AM
21	Edmond	6/18/2022 5:58 AM
22	Crystal City	6/18/2022 5:58 AM
23	santa clara	6/18/2022 5:57 AM
24	Chesapeake	6/18/2022 3:54 AM
25	Spartanburg	6/18/2022 3:54 AM
26	Cherokee	6/18/2022 3:53 AM
27	Knox county	6/17/2022 11:00 PM
28	missouri city	6/17/2022 2:28 PM
29	ashland	6/16/2022 3:03 AM
30	Oakland	6/14/2022 10:05 PM
31	Illinois	6/13/2022 8:07 AM
32	STOCKTON	6/12/2022 9:23 PM
33	New York	6/11/2022 4:36 AM
34	San Diego	6/11/2022 4:17 AM
35	San Diego	6/11/2022 4:07 AM
36	Marina	6/11/2022 3:59 AM
37	Santa Rosa	6/11/2022 3:47 AM
38	Santa Rosa	6/11/2022 3:31 AM
39	Los Angeles	6/11/2022 2:55 AM
40	Los Angeles	6/11/2022 2:25 AM
41	Los Angeles	6/11/2022 2:06 AM
42	Los Angeles	6/11/2022 1:44 AM
43	Spokane	6/11/2022 12:39 AM
44	New York	6/10/2022 11:37 PM
45	cortland	6/10/2022 11:32 PM
46	mount vernon	6/10/2022 11:30 PM
47	staten Island	6/10/2022 11:28 PM
48	brooklyn	6/10/2022 11:24 PM
49	Westborough	6/9/2022 11:54 AM

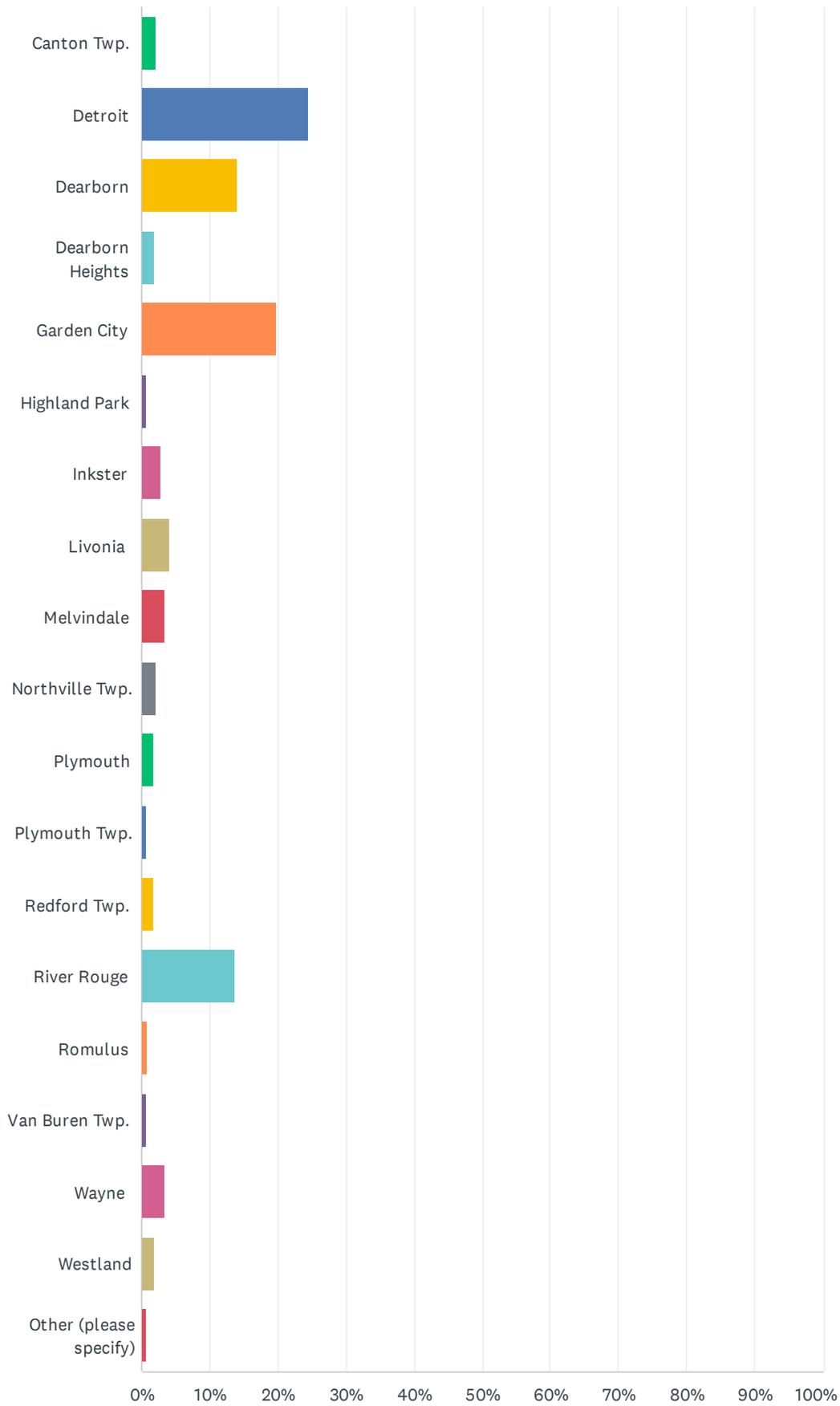
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50	Westborough	6/9/2022 11:48 AM
51	Can Diego	6/8/2022 11:31 PM
52	us	6/2/2022 8:49 PM
53	USA	6/2/2022 5:54 PM
54	Loudoun	6/2/2022 12:20 PM

Q2 In Wayne County, which city, township or village do you live in?

Answered: 1,913 Skipped: 1,183



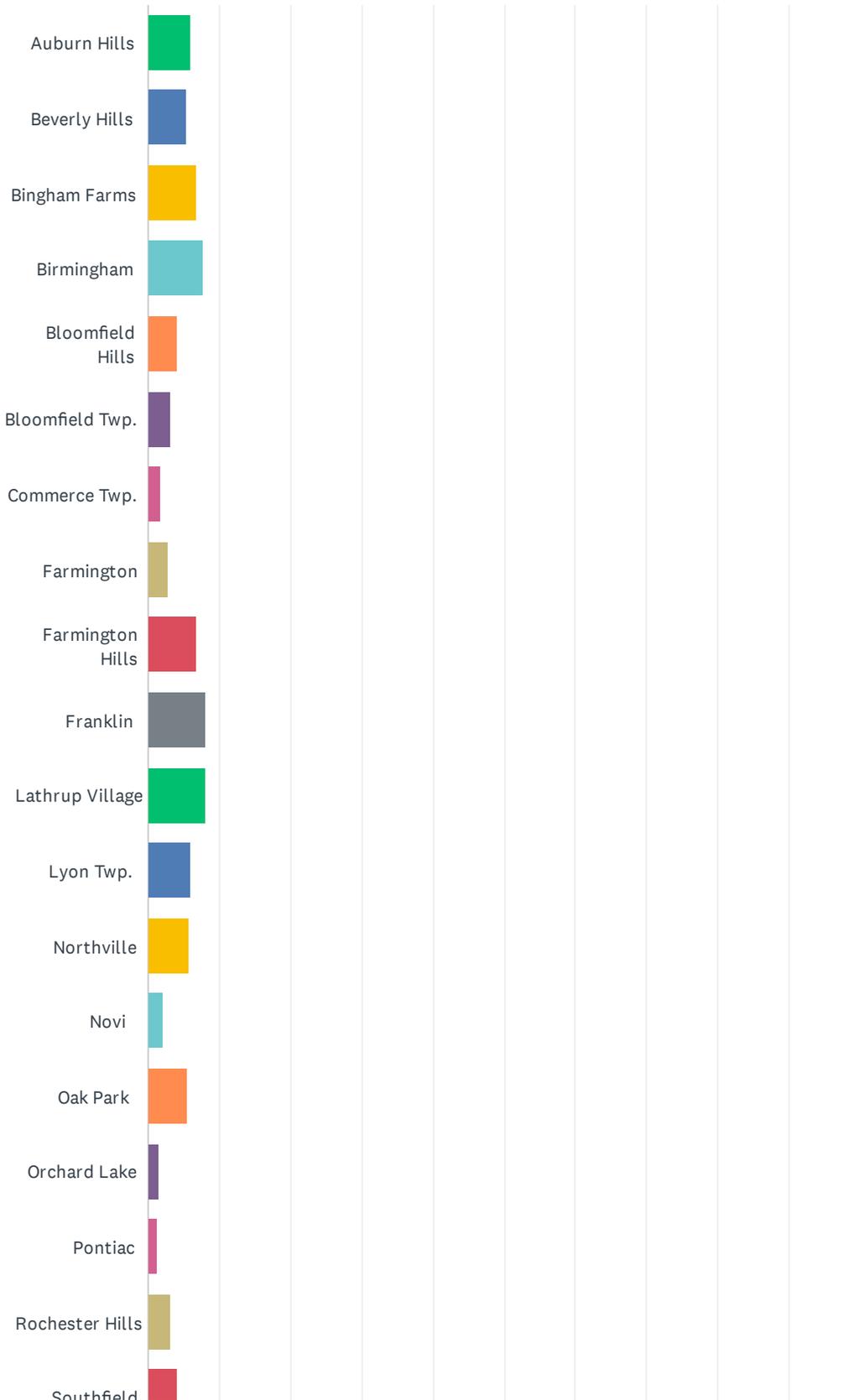
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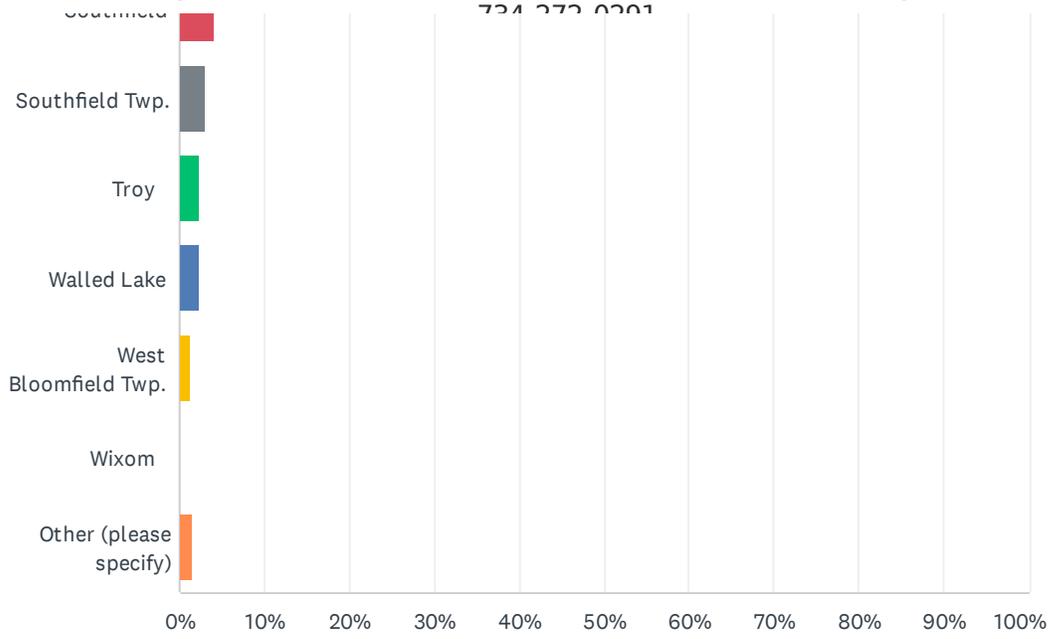
ANSWER CHOICES	RESPONSES	
Canton Twp.	2.04%	39
Detroit	24.46%	468
Dearborn	14.01%	268
Dearborn Heights	1.99%	38
Garden City	19.76%	378
Highland Park	0.63%	12
Inkster	2.67%	51
Livonia	4.03%	77
Melvindale	3.35%	64
Northville Twp.	2.14%	41
Plymouth	1.62%	31
Plymouth Twp.	0.63%	12
Redford Twp.	1.67%	32
River Rouge	13.70%	262
Romulus	0.78%	15
Van Buren Twp.	0.68%	13
Wayne	3.35%	64
Westland	1.83%	35
Other (please specify)	0.68%	13
TOTAL		1,913

#	OTHER (PLEASE SPECIFY)	DATE
1	Southgate	8/26/2022 10:09 AM
2	Grosse Pointe Park	8/24/2022 8:02 PM
3	Taylor, grew up in River Rouge.	7/31/2022 7:39 AM
4	Hamtramck	7/30/2022 5:29 PM
5	Southgate	7/21/2022 10:59 PM
6	Taylor	7/10/2022 11:13 PM
7	Lincoln Park	7/4/2022 5:26 AM
8	Trenton	6/30/2022 11:24 AM
9	Lincoln Park	6/30/2022 11:18 AM
10	Southgate	6/20/2022 8:26 PM
11	Woodhaven	6/11/2022 3:23 PM
12	Wyandotte	6/10/2022 2:11 PM
13	I	6/6/2022 3:52 AM

Q3 In Oakland County, which city, township or village do you live in?

Answered: 733 Skipped: 2,363





WATER QUALITY CHANGES IN THE ROUGE RIVER 2022 SURVEY
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 734.272.0201

ANSWER CHOICES	RESPONSES	
Auburn Hills	5.87%	43
Beverly Hills	5.32%	39
Bingham Farms	6.82%	50
Birmingham	7.64%	56
Bloomfield Hills	3.96%	29
Bloomfield Twp.	3.14%	23
Commerce Twp.	1.64%	12
Farmington	2.73%	20
Farmington Hills	6.82%	50
Franklin	8.05%	59
Lathrup Village	8.19%	60
Lyon Twp.	6.00%	44
Northville	5.73%	42
Novi	2.05%	15
Oak Park	5.59%	41
Orchard Lake	1.50%	11
Pontiac	1.23%	9
Rochester Hills	3.27%	24
Southfield	3.96%	29
Southfield Twp.	3.00%	22
Troy	2.32%	17
Walled Lake	2.32%	17
West Bloomfield Twp.	1.36%	10
Wixom	0.00%	0
Other (please specify)	1.50%	11
TOTAL		733

#	OTHER (PLEASE SPECIFY)	DATE
1	Royal Oak	8/25/2022 8:31 PM
2	Hazel Park	7/23/2022 12:12 PM
3	Royal Oak	7/6/2022 10:18 AM
4	Ferndale	7/5/2022 5:51 AM
5	Royal Oak	6/29/2022 2:46 PM
6	Waterford	6/20/2022 11:59 AM

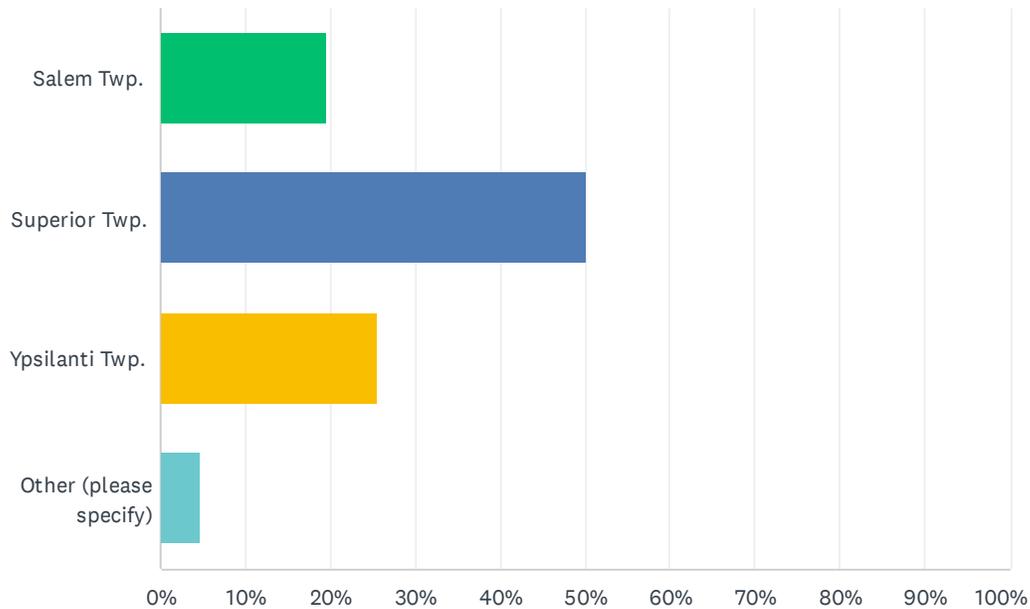
WATER QUALITY CHANGES IN THE ROUGE RIVER 2022 SURVEY

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734 272 0201

7	Royal Oak	6/19/2022 10:08 AM
8	Ferndale	6/17/2022 5:42 PM
9	Hazel Park	6/17/2022 5:13 PM
10	Royal Oak	6/13/2022 10:41 AM
11	Waterford	6/2/2022 11:42 AM

Q4 In Washtenaw County, which city, township or village do you live in?

Answered: 327 Skipped: 2,769



ANSWER CHOICES	RESPONSES	
Salem Twp.	19.57%	64
Superior Twp.	50.15%	164
Ypsilanti Twp.	25.69%	84
Other (please specify)	4.59%	15
TOTAL		327

#	OTHER (PLEASE SPECIFY)	DATE
1	Scio Township	7/27/2022 2:20 PM
2	Ann Arbor	6/12/2022 6:56 AM
3	Ann arbor	6/11/2022 3:49 AM
4	Twp of Lima	6/8/2022 9:10 PM
5	Dexter	6/8/2022 6:35 PM
6	Lima Twp	6/8/2022 4:44 PM
7	Pittsfield township	6/8/2022 9:22 AM
8	Northfield	6/7/2022 10:49 PM
9	Ann Arbor	6/7/2022 7:57 PM
10	Manchester	6/7/2022 6:02 AM
11	Ann Arbor	6/6/2022 6:16 PM

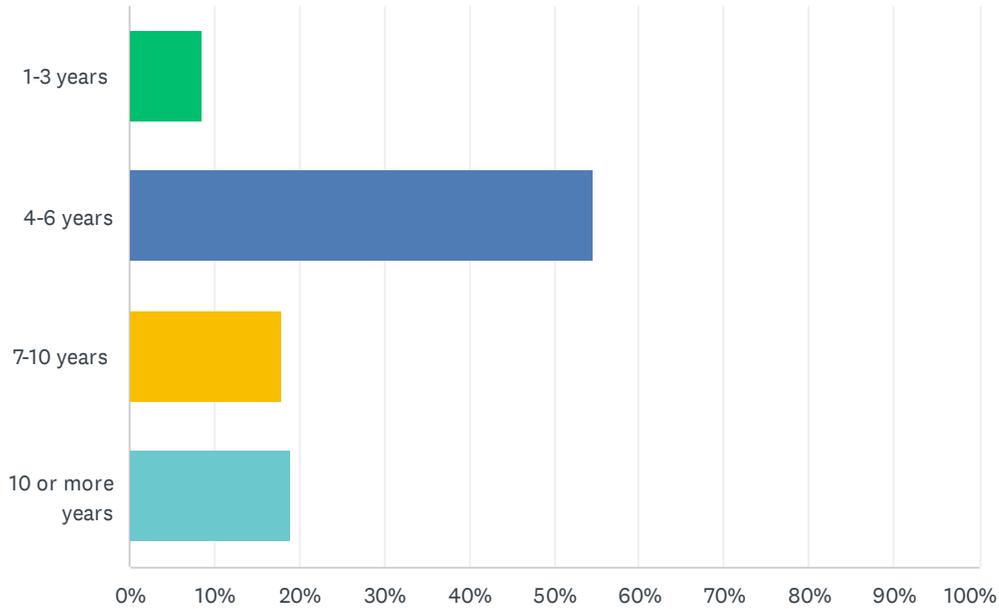
WATER QUALITY CHANGES IN THE ROUGE RIVER 2022 SURVEY

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12	Ann Arbor	6/6/2022 6:14 PM
13	Ann Arbor	6/6/2022 5:59 PM
14	Idk	6/6/2022 4:12 PM
15	Ann Arbor	6/6/2022 3:37 PM

Q5 How long have you lived at your current residence?

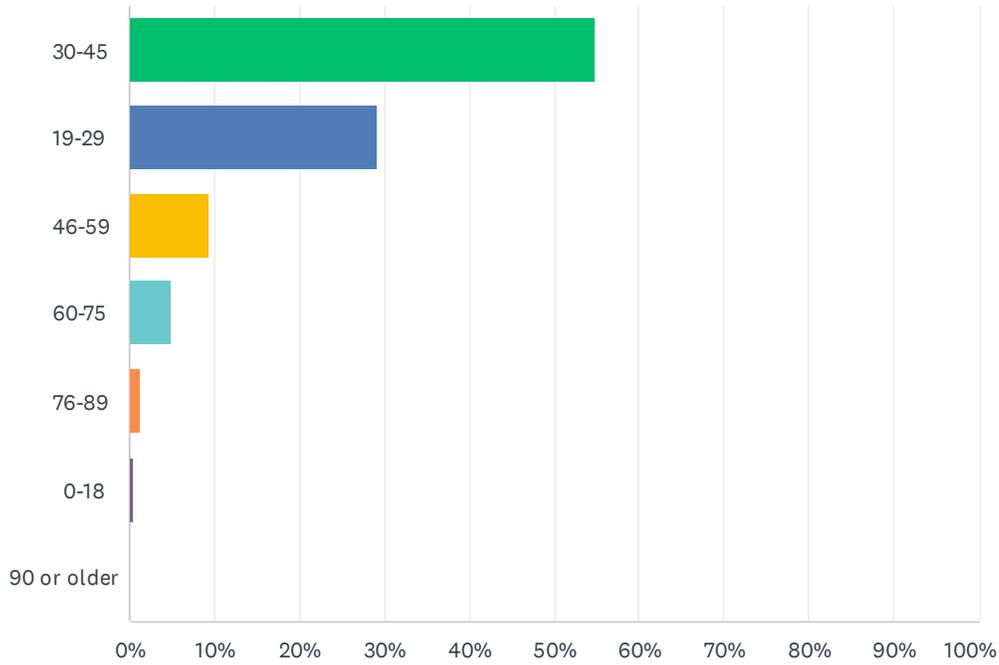
Answered: 2,957 Skipped: 139



ANSWER CHOICES	RESPONSES
1-3 years	8.49% 251
4-6 years	54.68% 1,617
7-10 years	17.86% 528
10 or more years	18.97% 561
TOTAL	2,957

Q6 How old are you?

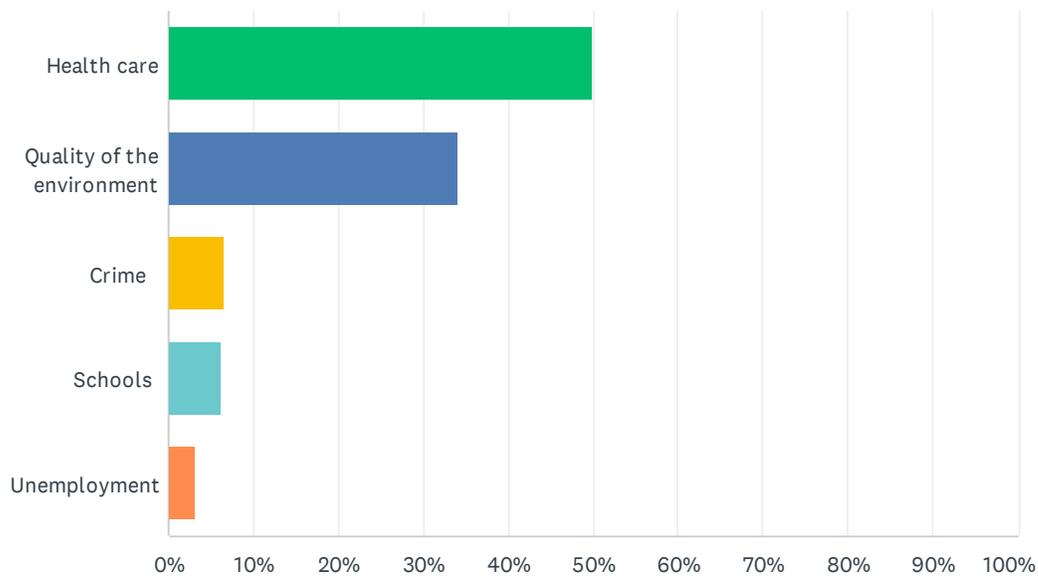
Answered: 2,947 Skipped: 149



ANSWER CHOICES	RESPONSES	
30-45	54.77%	1,614
19-29	29.25%	862
46-59	9.33%	275
60-75	4.82%	142
76-89	1.32%	39
0-18	0.48%	14
90 or older	0.03%	1
TOTAL		2,947

Q7 What is the biggest problem facing your local community right now?

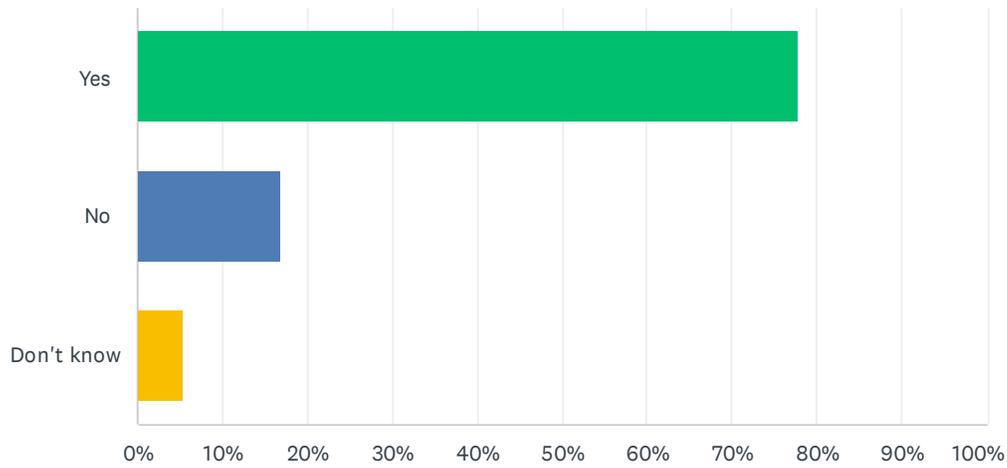
Answered: 2,929 Skipped: 167



ANSWER CHOICES	RESPONSES	
Health care	49.95%	1,463
Quality of the environment	34.04%	997
Crime	6.56%	192
Schools	6.28%	184
Unemployment	3.18%	93
TOTAL		2,929

Q8 Do you live in a watershed?

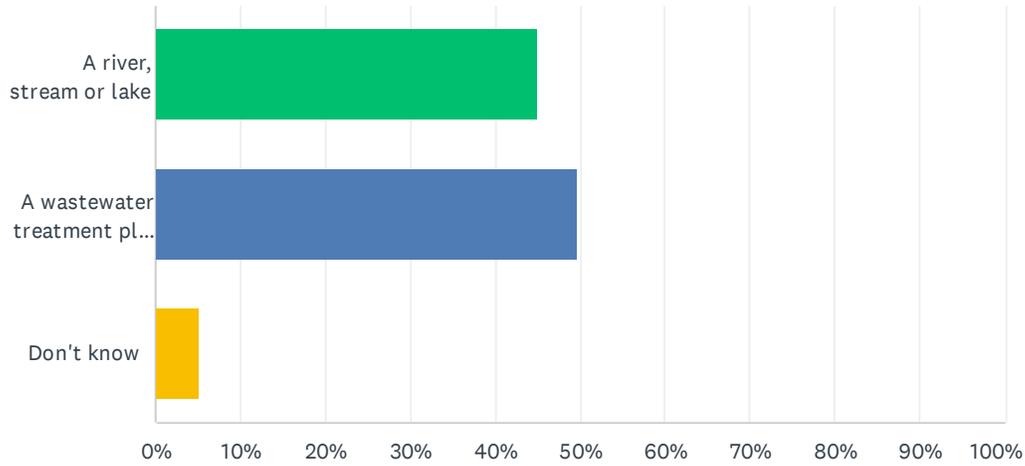
Answered: 2,917 Skipped: 179



ANSWER CHOICES	RESPONSES	
Yes	77.89%	2,272
No	16.83%	491
Don't know	5.28%	154
TOTAL		2,917

Q9 Where does the rain water running off your property drain to?

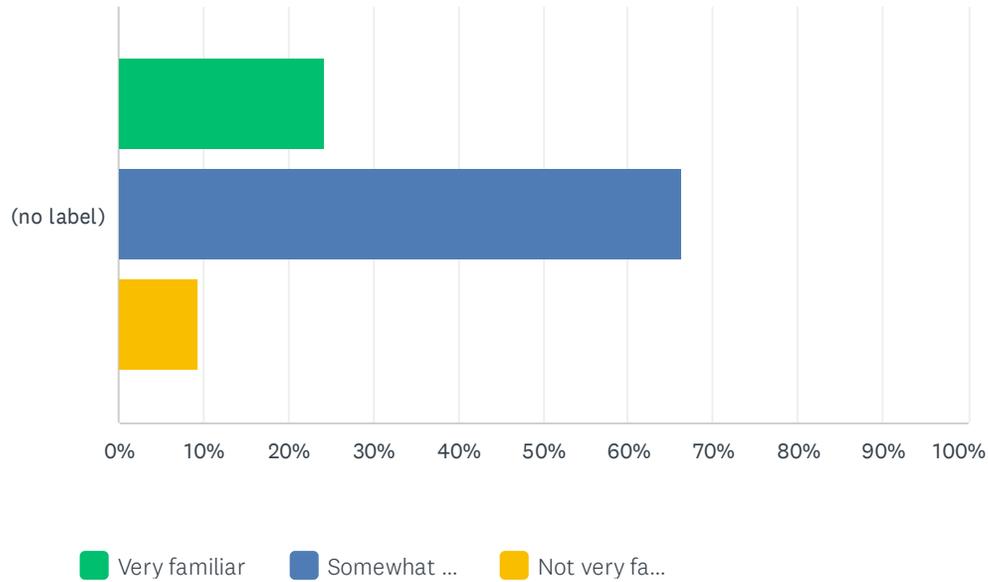
Answered: 2,908 Skipped: 188



ANSWER CHOICES	RESPONSES	
A river, stream or lake	45.08%	1,311
A wastewater treatment plant	49.72%	1,446
Don't know	5.19%	151
TOTAL		2,908

Q10 How familiar are you with the Rouge River Watershed and its network of rivers and streams running throughout southeast Michigan?

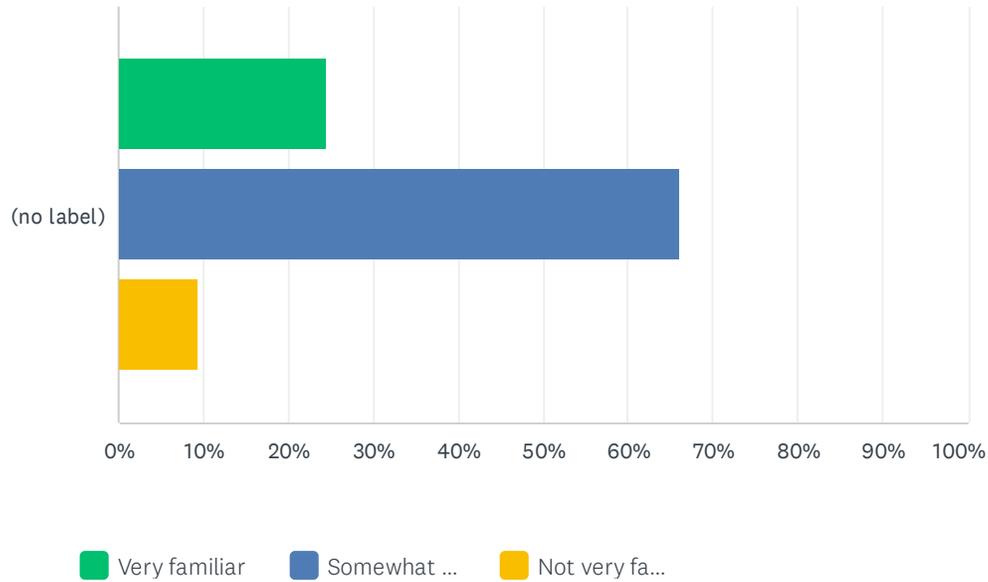
Answered: 2,898 Skipped: 198



	VERY FAMILIAR	SOMEWHAT FAMILIAR	NOT VERY FAMILIAR	TOTAL	WEIGHTED AVERAGE
(no label)	24.22% 702	66.32% 1,922	9.45% 274	2,898	1.00

Q11 How familiar are you with the Rouge River Watershed and its network of rivers and streams running throughout southeast Michigan?

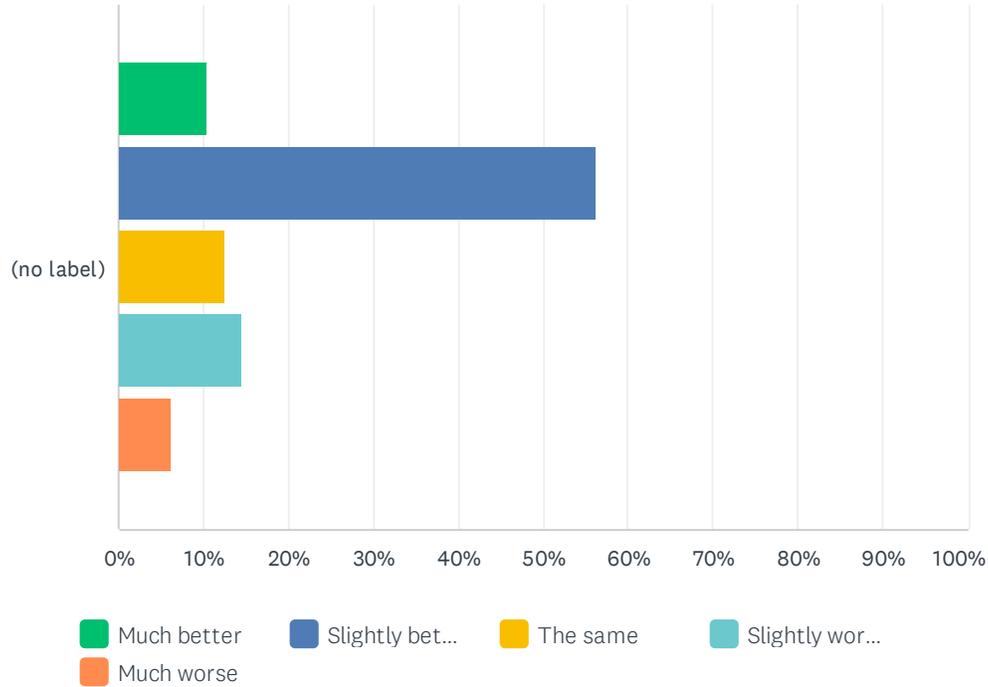
Answered: 53 Skipped: 3,043



	VERY FAMILIAR	SOMEWHAT FAMILIAR	NOT VERY FAMILIAR	TOTAL	WEIGHTED AVERAGE
(no label)	24.53% 13	66.04% 35	9.43% 5	53	1.00

Q12 In your opinion, over the past fifteen (15) years the water quality of the Rouge River is. . .

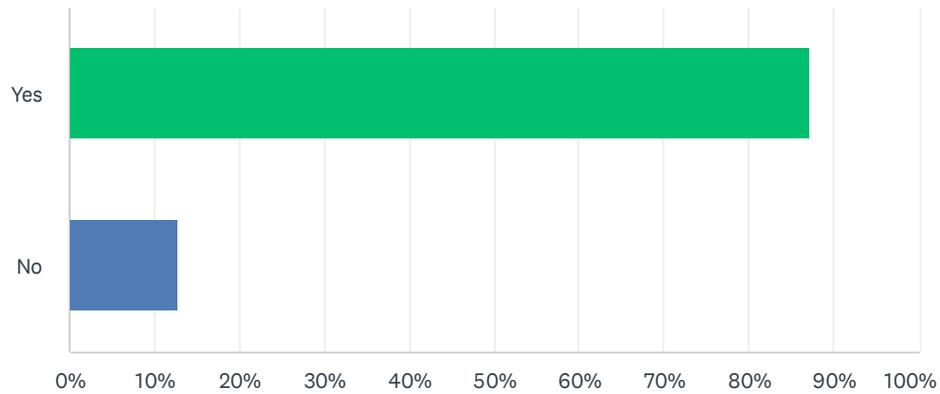
Answered: 48 Skipped: 3,048



	MUCH BETTER	SLIGHTLY BETTER	THE SAME	SLIGHTLY WORSE	MUCH WORSE	TOTAL	WEIGHTED AVERAGE
(no label)	10.42% 5	56.25% 27	12.50% 6	14.58% 7	6.25% 3	48	2.50

Q13 Is your home located along the Rouge River or creek?

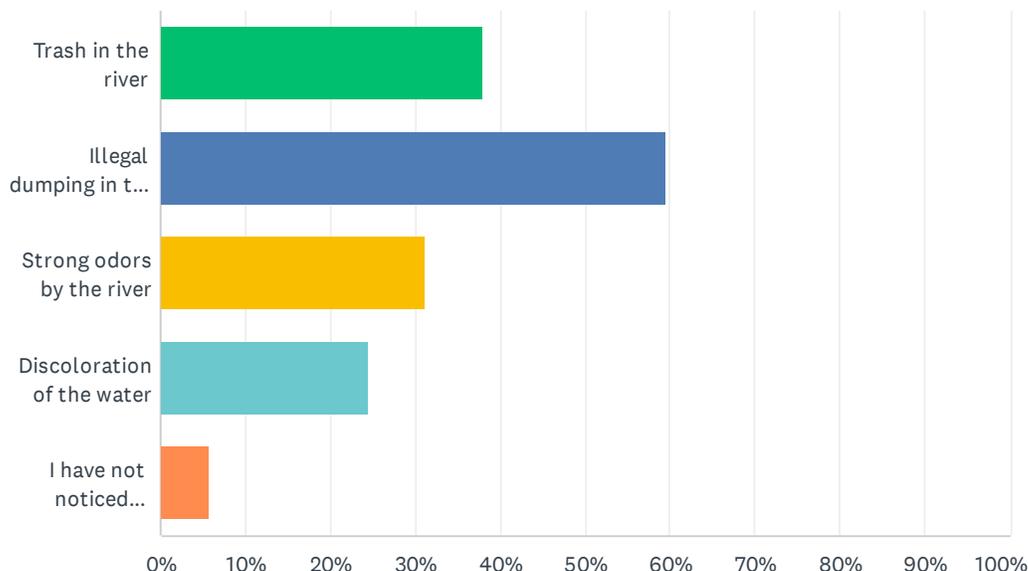
Answered: 2,895 Skipped: 201



ANSWER CHOICES	RESPONSES	
Yes	87.18%	2,524
No	12.82%	371
TOTAL		2,895

Q14 At any time in the last ten (10) years have you noticed any of the below in the Rouge River?

Answered: 2,881 Skipped: 215



ANSWER CHOICES	RESPONSES
Trash in the river	37.87% 1,091
Illegal dumping in the river	59.53% 1,715
Strong odors by the river	31.14% 897
Discoloration of the water	24.57% 708
I have not noticed anything unusual	5.69% 164
Total Respondents: 2,881	

#	PLEASE DESCRIBE IN MORE DETAIL IF NECESSARY OR IF YOU HAVE SEEN SOMETHING THAT IS NOT LISTED ABOVE (INCLUDE CROSS STREETS IF POSSIBLE)	DATE
1	The death of the water plants along the shore	9/29/2022 12:42 PM
2	I feel the river is fine. Nothing unusual	9/28/2022 12:17 PM
3	I've seen a lot of dead animals and some household garbage	9/28/2022 3:05 AM
4	Extreme erosion, log jamming- Lots Rd/ Mich.Ave	9/27/2022 12:59 PM
5	Woody debris	9/8/2022 8:51 PM
6	Erosion due to trees stuck under bridges	8/29/2022 11:03 PM
7	9211 STARK RD Fallen trees are more numerous than needed for fish habitat	8/24/2022 6:41 PM
8	Warren and Inkster where the Red Run Drain exits from an u underground culvert to an open stream. On Father's Day this year smelled a strong solvent type odor with a milky blue discoloration of the water. I called the 800 number for EGLE and gave a report. I also shared pictures of the stream discoloration. No one responded until 5 days later when our local DPW	8/24/2022 5:04 PM

WATER QUALITY CHANGES IN THE ROUGE RIVER 2022 SURVEY

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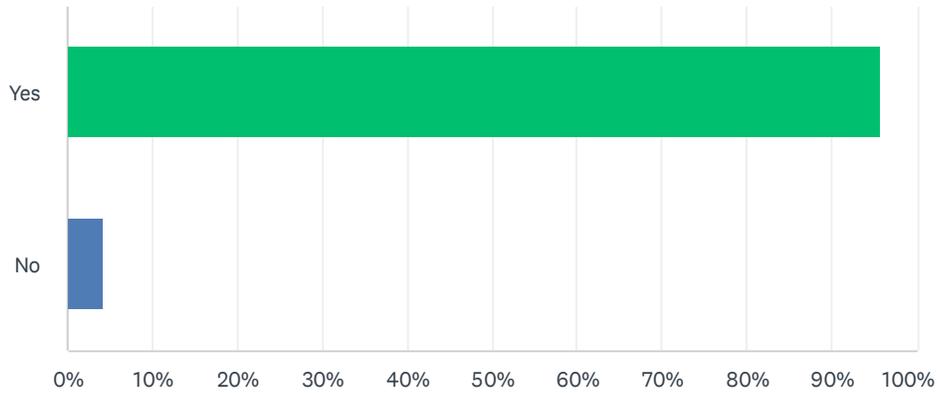
734 272 0201
 came to follow up. Of course by that time, the odor and discoloration were gone. I was expecting a more timely response.

9	Lola Dr & Puritan. I was bitten by an Asian Zebra Mosquito while sitting on my front porch. Bank damage causes ponding in the bottom of the park in front of my house These ponds need to be treated with biologicals to kill off the mosquito larvae	8/16/2022 10:03 PM
10	Erosion	8/16/2022 8:58 AM
11	Plastic Water Bottles and Plastic Bags	8/10/2022 6:05 PM
12	I walk and bird watch near the Rouge and its tributaries	7/27/2022 2:21 PM
13	Lots of snags and huge amounts of litter and tree blockages near Civic Center and Telegraph. Unbelievable amounts of trash in the river under I-696/M/-10/Telegraph.	7/22/2022 12:13 PM
14	More flashy runoff from more impervious surfaces.	7/18/2022 5:09 PM
15	Abundant lilly pads	7/18/2022 8:19 AM
16	Warren/Inkster: where red run drain exits from below salvation army. EGLE was notified (it was Father's Day sunday) but only took report; DH DPW did f/u about 5 days later.	7/13/2022 5:01 PM
17	Crossing the impoundment dam at Nankin Mills (Ann Arbor Trail).	6/30/2022 2:39 PM
18	The bridge on Ridge road just south of McNichols is frequently flooded and cars are swept away. There is frequent illegal dumping. Fallen trees create logjams that collect even more debris.	6/29/2022 3:09 PM
19	I live on a lake, not the river. Crazy algae blooms near the city storm drain.	6/28/2022 8:13 AM
20	My sister has the Rouge River running through her property. She is on Tuck Road across the street from the entrance to Beaumont Commons. Too much debris from the Road ends up in the river. I've seen dumping of yard waste adjacent to the river that eventually gets rained or blown into the river. A terrible amount of debris gets washed over to my sister's property faming the river & changing it's course. The river in the next year or two is going to cause their pumphouse &/ or barn the collapse into the river. They could use some help! Please! 🙏	6/26/2022 7:52 PM
21	Near Lola Valley Yard	6/23/2022 10:14 PM
22	Grass clippings	6/21/2022 9:16 PM
23	River overrun with fallen trees and vegetation.	6/21/2022 9:22 AM
24	During fish and mussel surveys. Small amounts of trash and a car. Smells when near a waste water treatment plant	6/20/2022 12:01 PM
25	Discharge industrial waste water into the river	6/19/2022 4:20 AM
26	Where I am in W Bloomfield there are lots of logs obstructing the flow of the water in the headwater stream. Sometimes there's trash and there's a private dam downstream, I live in Franklin Corners sun.	6/17/2022 10:12 PM
27	log jams, 'milky' sediment river water	6/17/2022 5:30 PM
28	Extremely high nitrate concentrations (>15 mg N) at the YCUA outfall, turbidity after storms, increases chloride concentrations during winter	6/17/2022 1:45 PM
29	In 2020/2021 There was a new development that had some kind of natural gas issue and I noticed a sheen and odor on the rock creek in my backyard	6/13/2022 7:28 PM
30	more frequent flooding	6/13/2022 1:36 PM
31	This is part of my job, lol	6/13/2022 10:44 AM
32	Dead deer @ Tireman in Rouge Pk	6/13/2022 6:42 AM
33	Foam	6/12/2022 6:57 AM
34	dxfgds	6/10/2022 10:11 PM
35	Bank erosion	6/10/2022 2:34 PM

36	I've not been around it	6/4/2022 8:26 PM
37	After heavy rains - Trash. From the bridge on Merriman by Warren over the creek / river.	6/4/2022 11:58 AM
38	Do not live near river so I cannot answer this question!	6/4/2022 9:23 AM
39	I'm not on the River so not applicable	6/2/2022 11:43 AM
40	Can't remember / haven't been	6/2/2022 8:35 AM
41	Dead fish	6/1/2022 3:27 PM
42	Debri trees	6/1/2022 1:17 PM

Q15 In the past five (5) years, have you or members of your family used or visited a park or other place with a river or stream running through it?

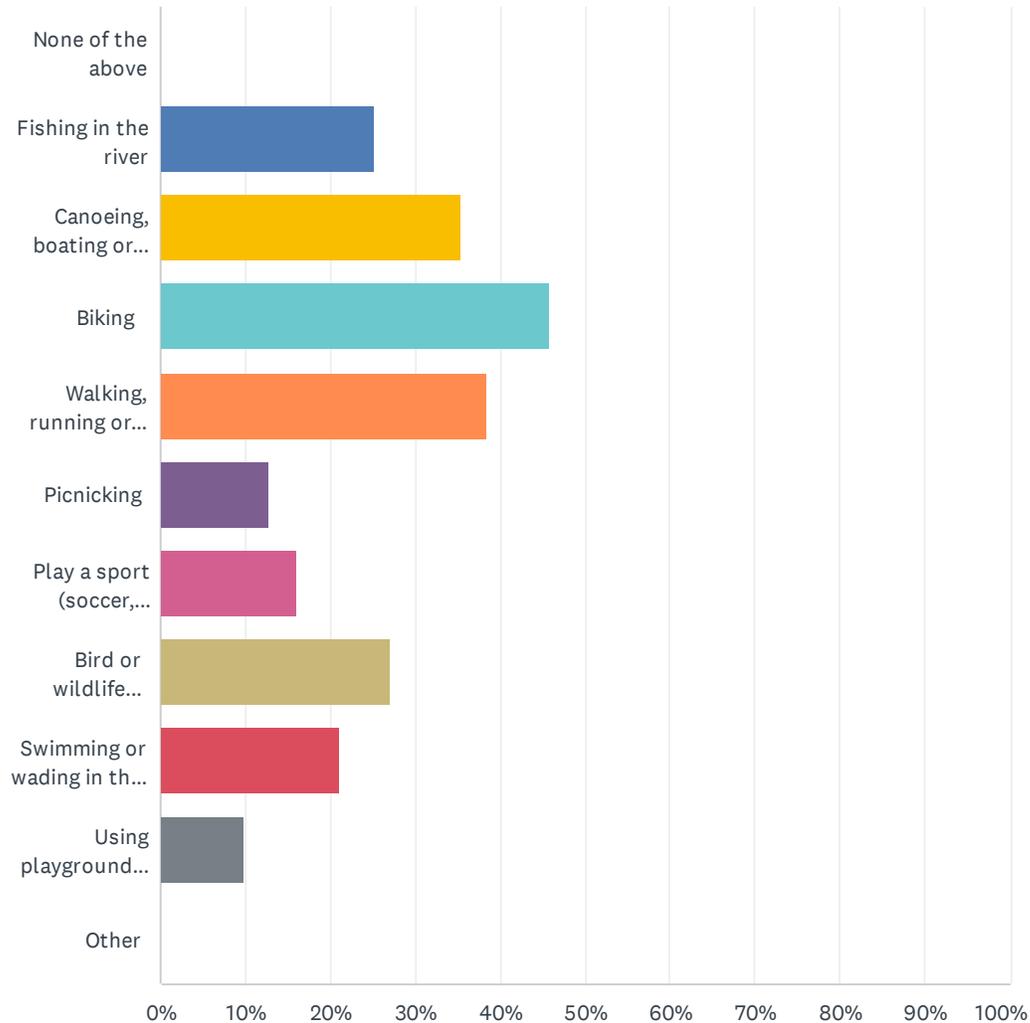
Answered: 2,875 Skipped: 221



ANSWER CHOICES	RESPONSES	
Yes	95.76%	2,753
No	4.24%	122
TOTAL		2,875

Q16 What activities have you or members of your family used the river or parks for during the past five years? (Check all that apply)

Answered: 2,735 Skipped: 361

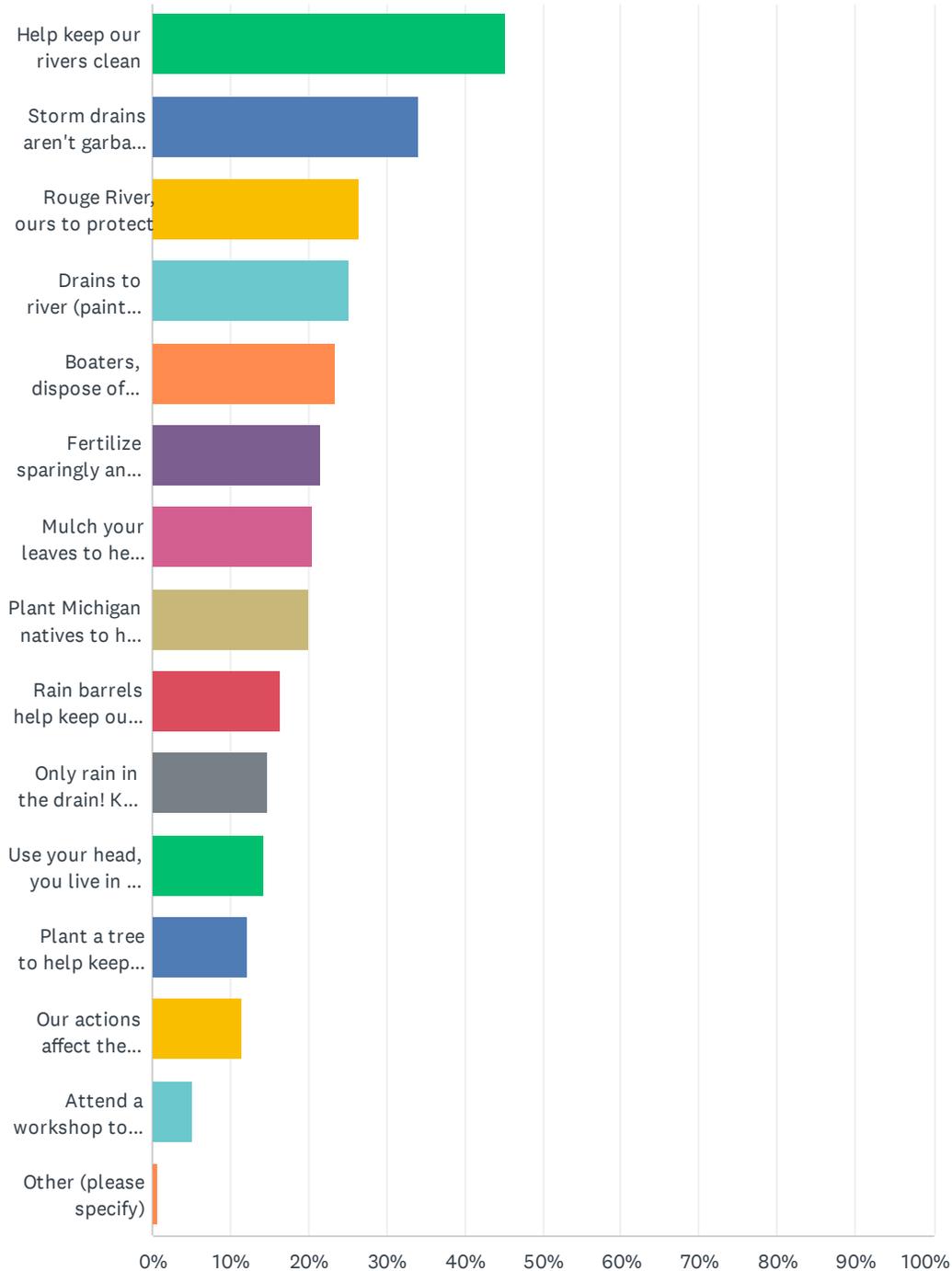


ANSWER CHOICES	RESPONSES
None of the above	0.00% 0
Fishing in the river	25.23% 690
Canoeing, boating or tubing in the river	35.43% 969
Biking	45.85% 1,254
Walking, running or jogging	38.46% 1,052
Picnicking	12.72% 348
Play a sport (soccer, sledding, baseball)	15.90% 435
Bird or wildlife watching	27.02% 739
Swimming or wading in the river	21.17% 579
Using playground equipment	9.84% 269
Other	0.00% 0
Total Respondents: 2,735	

#	OTHER (PLEASE SPECIFY)	DATE
1	Being outside in nature	9/27/2022 1:00 PM
2	Rouge Rescue Bug Hunts	8/24/2022 6:42 PM
3	Hiking	7/31/2022 7:42 AM
4	Wedding	7/23/2022 4:02 PM
5	invasive species removal	7/15/2022 10:01 AM
6	Walking dog	7/3/2022 10:42 PM
7	Frog & Toad surveys for Friends of the Rouge.	6/30/2022 2:40 PM
8	Canoeing on the Huron River. Boating in Cass Lake & on the Detroit River. Walking along the Rouge River, & bird & animal watched there too.	6/26/2022 7:54 PM
9	Removing trash from creeks and rouge river	6/20/2022 12:22 PM
10	go sightseeing	6/19/2022 4:27 AM
11	I miss biking on Hines Drive.	6/17/2022 10:19 PM
12	But none of these in the rouge river. That's disgusting. I'll never let my children swim in that water	6/1/2022 3:28 PM

Q17 Which of the following phrases encouraging stewardship of the Rouge River have you seen or heard? (Check all that apply)

Answered: 2,855 Skipped: 241



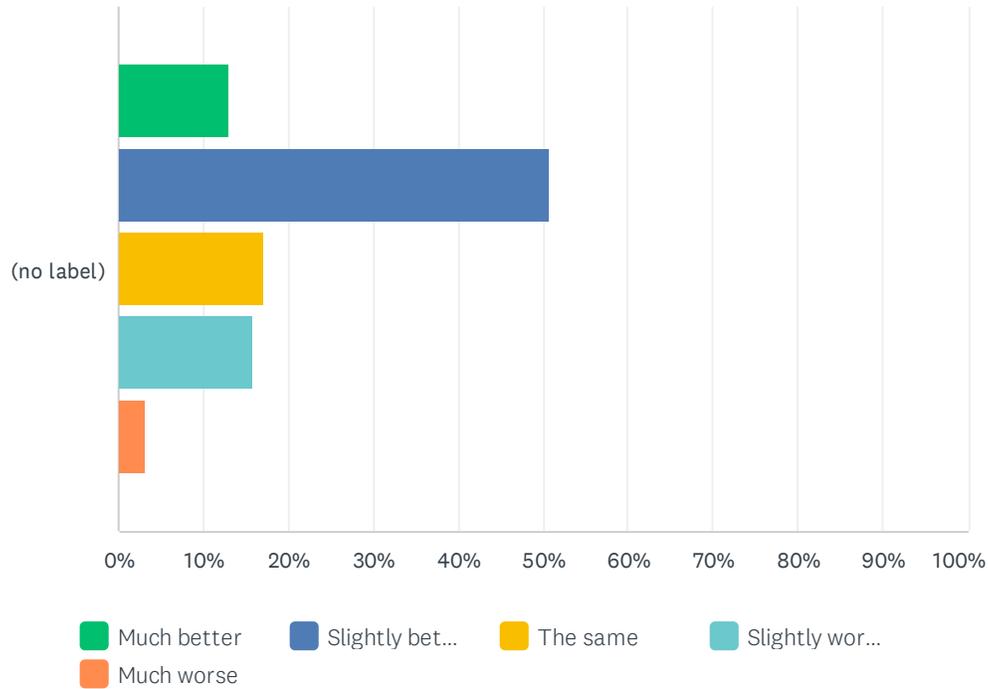
ANSWER CHOICES	RESPONSES	
Help keep our rivers clean	45.11%	1,288
Storm drains aren't garbage cans	34.08%	973
Rouge River, ours to protect	26.48%	756
Drains to river (painted message on storm drain)	25.11%	717
Boaters, dispose of waste properly; keep our rivers clean	23.47%	670
Fertilize sparingly and caringly	21.47%	613
Mulch your leaves to help keep our rivers clean	20.39%	582
Plant Michigan natives to help keep our river clean	20.07%	573
Rain barrels help keep our rivers clean	16.39%	468
Only rain in the drain! Keep our rivers clean	14.78%	422
Use your head, you live in a watershed	14.36%	410
Plant a tree to help keep our river clean	12.08%	345
Our actions affect the Rouge River	11.42%	326
Attend a workshop to help keep our rivers clean	5.04%	144
Other (please specify)	0.70%	20
Total Respondents: 2,855		

#	OTHER (PLEASE SPECIFY)	DATE
1	Help keep our rivers clean	9/28/2022 3:47 AM
2	Only rain in the drain! Keep our rivers clean	9/28/2022 3:30 AM
3	Use your head, you live in a watershed	9/28/2022 3:16 AM
4	Rouge River, ours to protect	9/28/2022 2:44 AM
5	Start from me to protect the Rouge river	9/27/2022 10:55 PM
6	Improve stormwater management requirements for developmentsl	9/13/2022 3:12 PM
7	help reduce erosion, provide habitat for fish and Maintain water quality, with emphasis on producing potable water	9/5/2022 3:51 PM
8	None	8/24/2022 4:04 PM
9	V	7/7/2022 9:08 PM
10	None	7/2/2022 11:57 AM
11	I haven't heard of any of these slogans. I completed MSU intro to lakes and cisma zoom, mich lakes and streams assoc	6/28/2022 8:15 AM
12	Only rup roasts litter	6/20/2022 12:24 PM
13	I haven't	6/20/2022 10:17 AM
14	Protecting the river is everyone's responsibility	6/19/2022 4:30 AM
15	clean, drain, dry (to prevent invasive species)	6/17/2022 5:32 PM
16	None of the above	6/5/2022 11:40 PM

17	None	6/2/2022 8:36 AM
18	Haven't seen any of these	6/1/2022 4:40 PM
19	Never heard any of these	6/1/2022 3:28 PM
20	clear the drains	6/1/2022 1:18 PM

Q18 In your opinion, over the past fifteen (15) years the water quality of the Rouge River is. . .

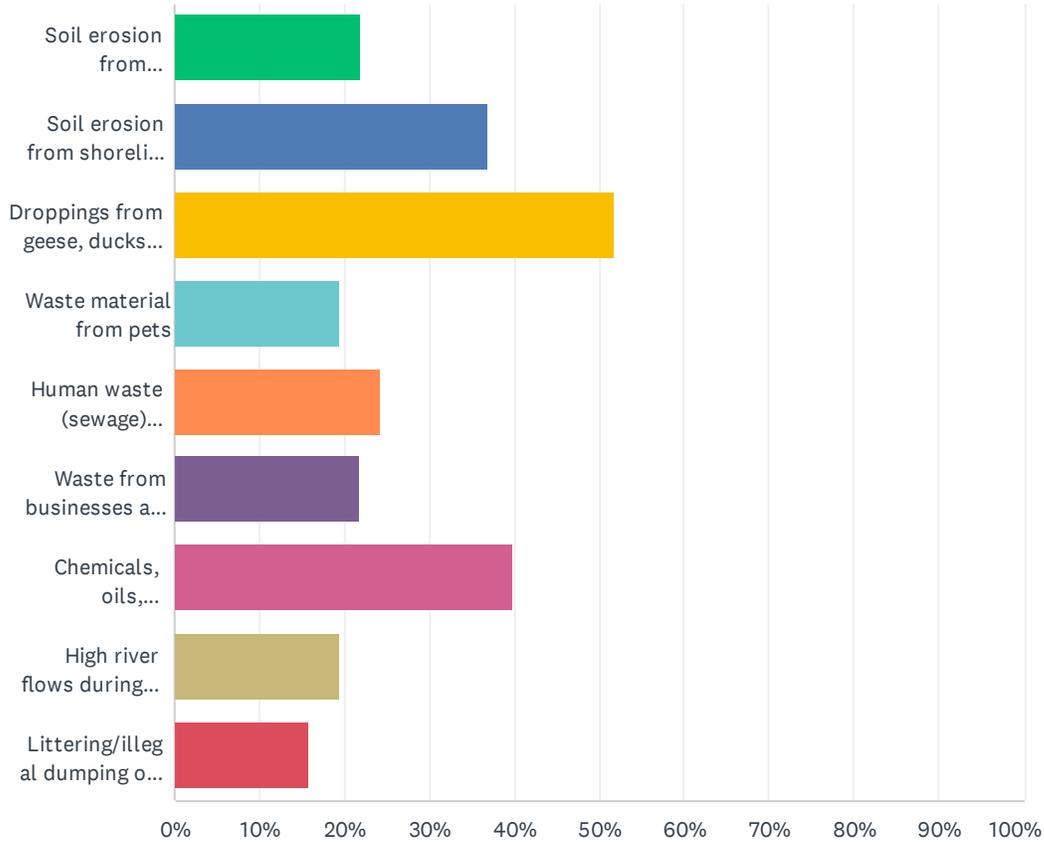
Answered: 2,851 Skipped: 245



	MUCH BETTER	SLIGHTLY BETTER	THE SAME	SLIGHTLY WORSE	MUCH WORSE	TOTAL	WEIGHTED AVERAGE
(no label)	13.05% 372	50.75% 1,447	17.15% 489	15.85% 452	3.19% 91	2,851	2.45

Q19 The items listed below are sources of water quality pollution across the country. In your opinion, which ones are a problem in your area? (Check all that apply)

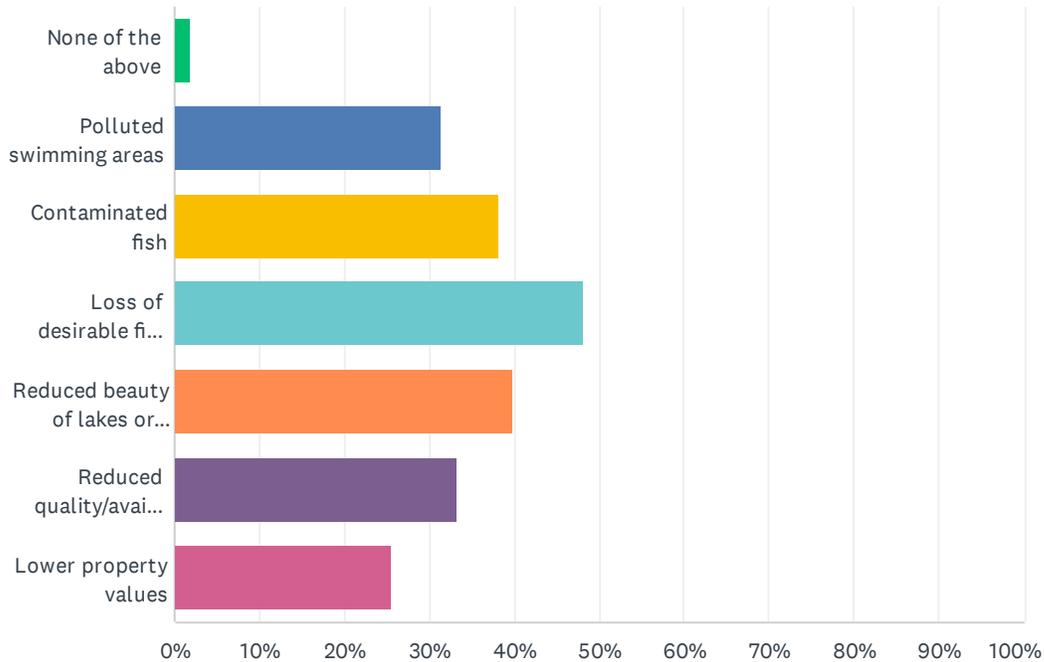
Answered: 2,845 Skipped: 251



ANSWER CHOICES	RESPONSES
Soil erosion from construction sites	21.97% 625
Soil erosion from shoreline and/or streambanks	36.87% 1,049
Droppings from geese, ducks and other waterfowl	51.85% 1,475
Waste material from pets	19.51% 555
Human waste (sewage) discharges that occur during heavy rain storms from Combined Sewer Overflows or cross-connections between the sanitary and storm sewers	24.36% 693
Waste from businesses and industrial facilities	21.72% 618
Chemicals, oils, fertilizers, and other polluting materials that are found on the surface of parking lots, streets, farms, and lawns washed into the river by rain	39.89% 1,135
High river flows during rain events	19.33% 550
Littering/illegal dumping of trash	15.71% 447
Total Respondents: 2,845	

Q20 In your opinion has poor water quality caused any of the following? (Check all that apply)

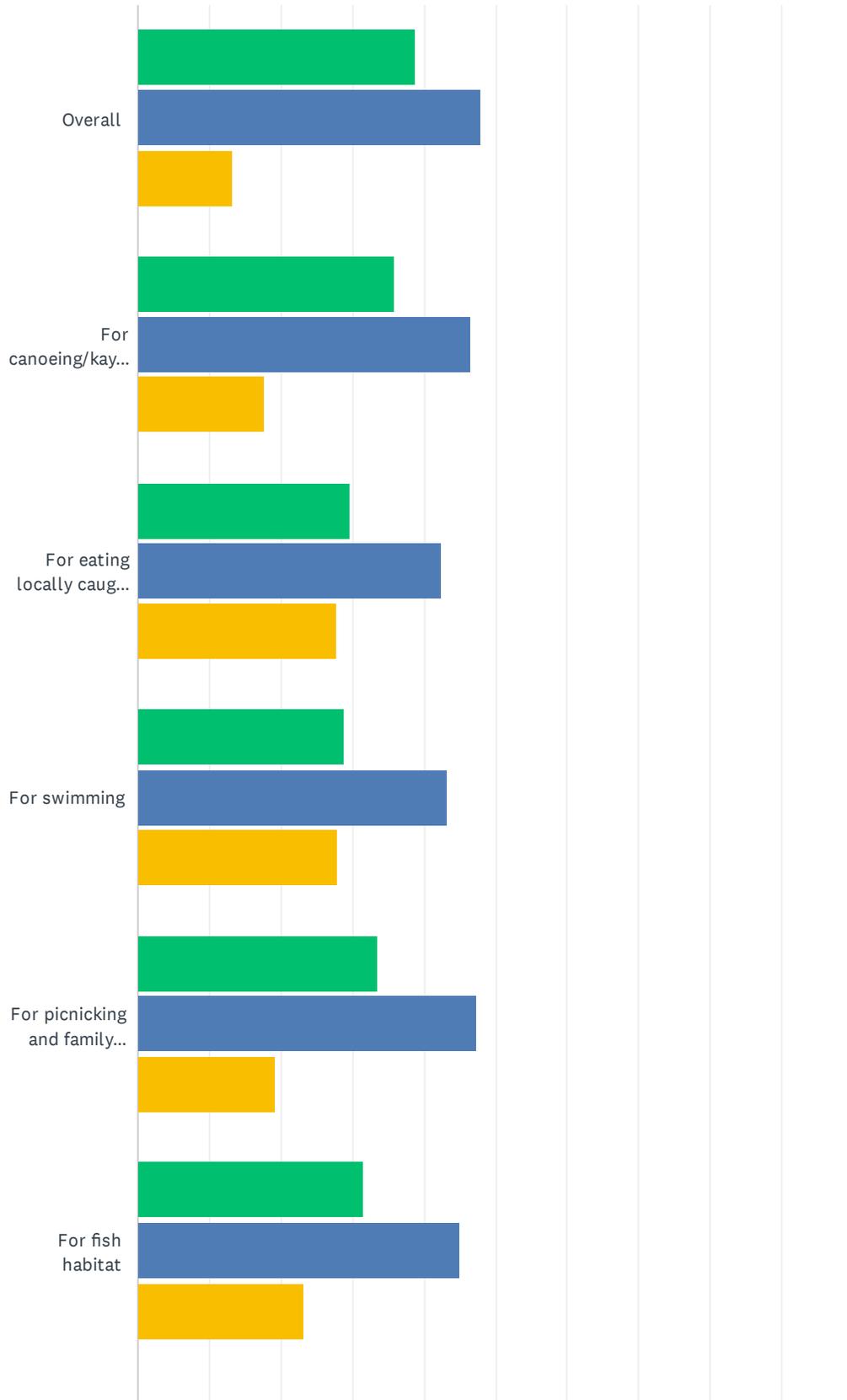
Answered: 2,838 Skipped: 258



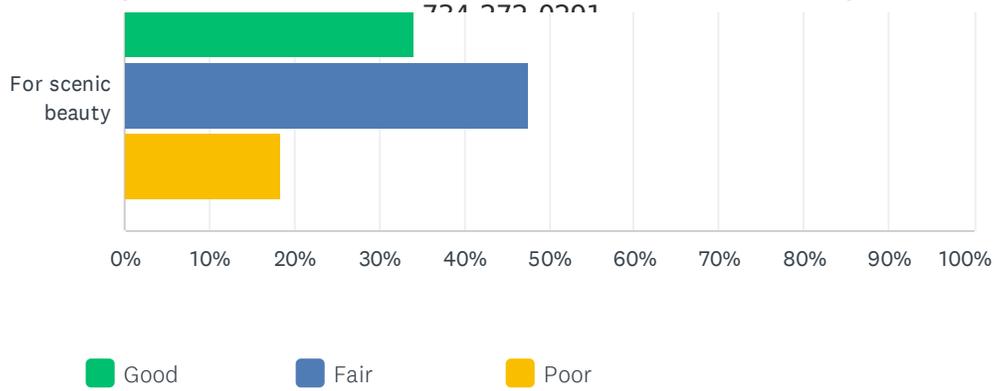
ANSWER CHOICES	RESPONSES
None of the above	1.94% 55
Polluted swimming areas	31.32% 889
Contaminated fish	38.09% 1,081
Loss of desirable fish species	48.24% 1,369
Reduced beauty of lakes or streams	39.92% 1,133
Reduced quality/availability of water recreation activities	33.33% 946
Lower property values	25.62% 727
Total Respondents: 2,838	

Q21 How would you rate the water quality of the Rouge River?

Answered: 2,828 Skipped: 268



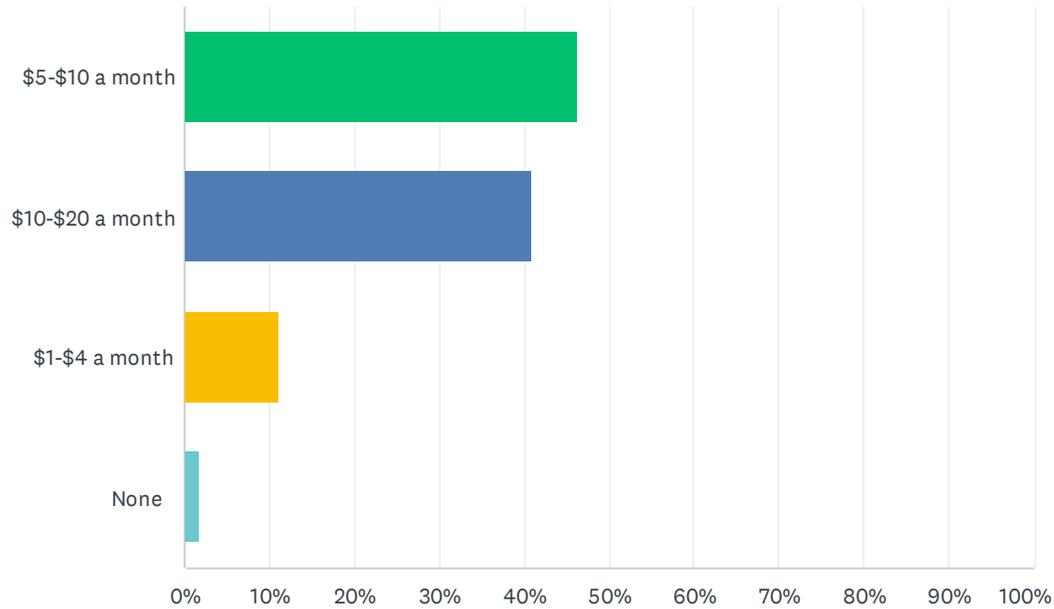
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	GOOD	FAIR	POOR	TOTAL	WEIGHTED AVERAGE
Overall	38.77% 1,086	47.91% 1,342	13.32% 373	2,801	2.75
For canoeing/kayaking/boating	35.86% 1,004	46.43% 1,300	17.71% 496	2,800	2.82
For eating locally caught fish	29.70% 830	42.50% 1,188	27.80% 777	2,795	2.98
For swimming	28.81% 803	43.31% 1,207	27.88% 777	2,787	2.99
For picnicking and family activities	33.37% 934	47.34% 1,325	19.29% 540	2,799	2.86
For fish habitat	31.59% 884	45.07% 1,261	23.34% 653	2,798	2.92
For scenic beauty	34.19% 959	47.49% 1,332	18.32% 514	2,805	2.84

Q22 How much would you spend to improve the water quality in the Rouge River? (For example: through local taxes or fees)

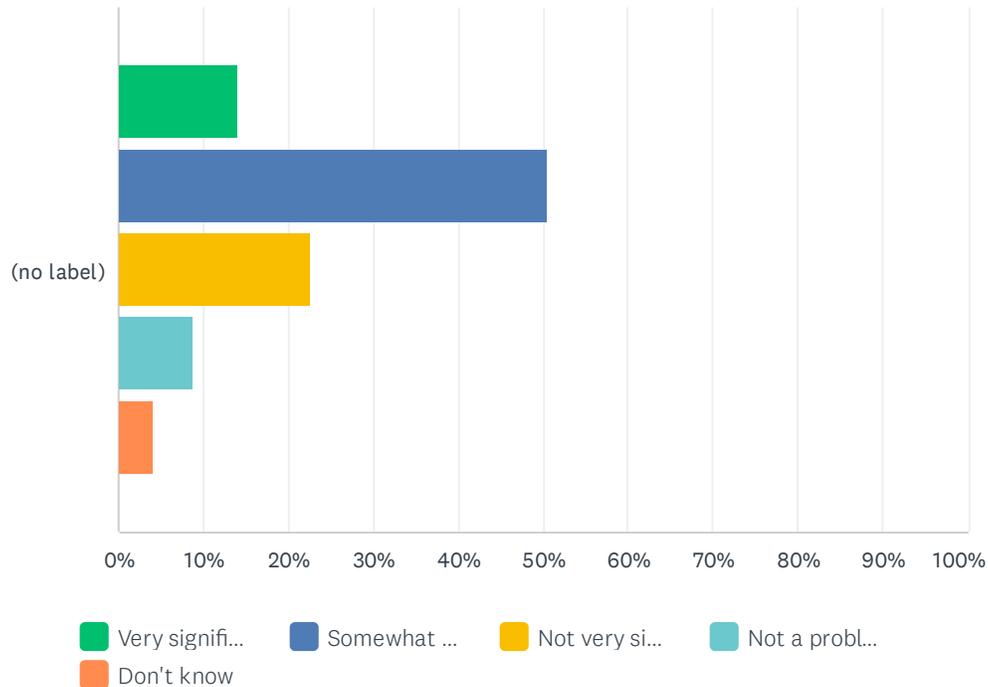
Answered: 2,823 Skipped: 273



ANSWER CHOICES	RESPONSES	
\$5-\$10 a month	46.19%	1,304
\$10-\$20 a month	41.02%	1,158
\$1-\$4 a month	11.02%	311
None	1.77%	50
TOTAL		2,823

Q23 How significant would you rate the damage related to high flows (flooding of property, stream bank erosion, etc.) in the Rouge River in the area where you live?

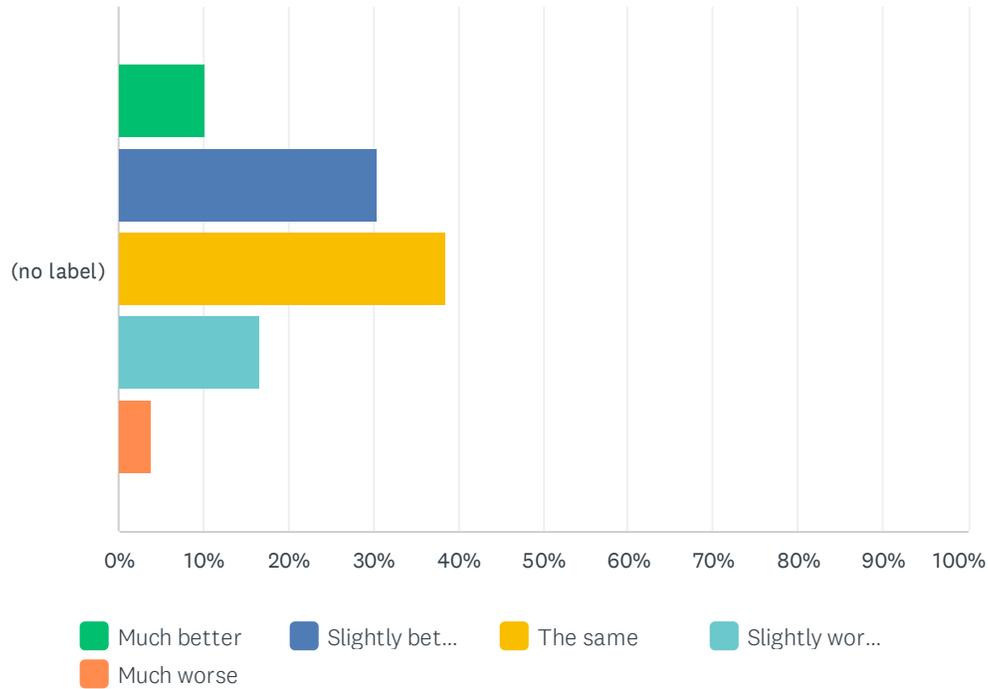
Answered: 2,818 Skipped: 278



	VERY SIGNIFICANT	SOMEWHAT SIGNIFICANT	NOT VERY SIGNIFICANT	NOT A PROBLEM	DON'T KNOW	TOTAL	WEIGHTED AVERAGE
(no label)	14.09% 397	50.50% 1,423	22.64% 638	8.80% 248	3.97% 112	2,818	2.38

Q24 In your opinion, over the past five (5) years, the flooding of the Rouge River and the related problems are . . .

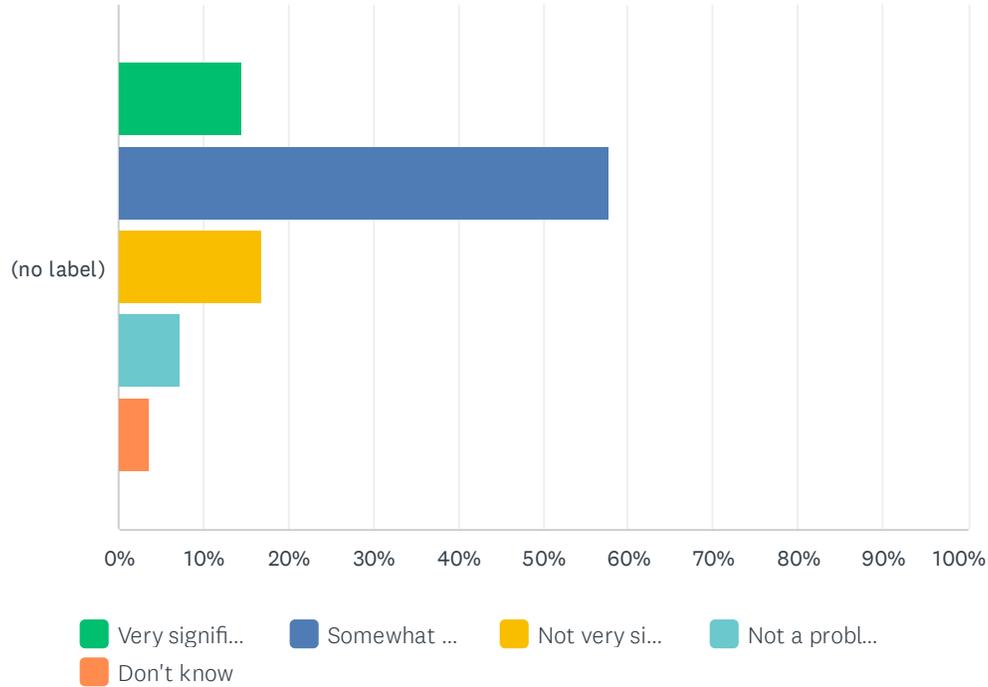
Answered: 2,811 Skipped: 285



	MUCH BETTER	SLIGHTLY BETTER	THE SAME	SLIGHTLY WORSE	MUCH WORSE	TOTAL	WEIGHTED AVERAGE
(no label)	10.32% 290	30.59% 860	38.67% 1,087	16.65% 468	3.77% 106	2,811	2.73

Q25 How significant would you rate the problems caused by stormwater runoff (rain events & snow/ice melt) in the Rouge River?

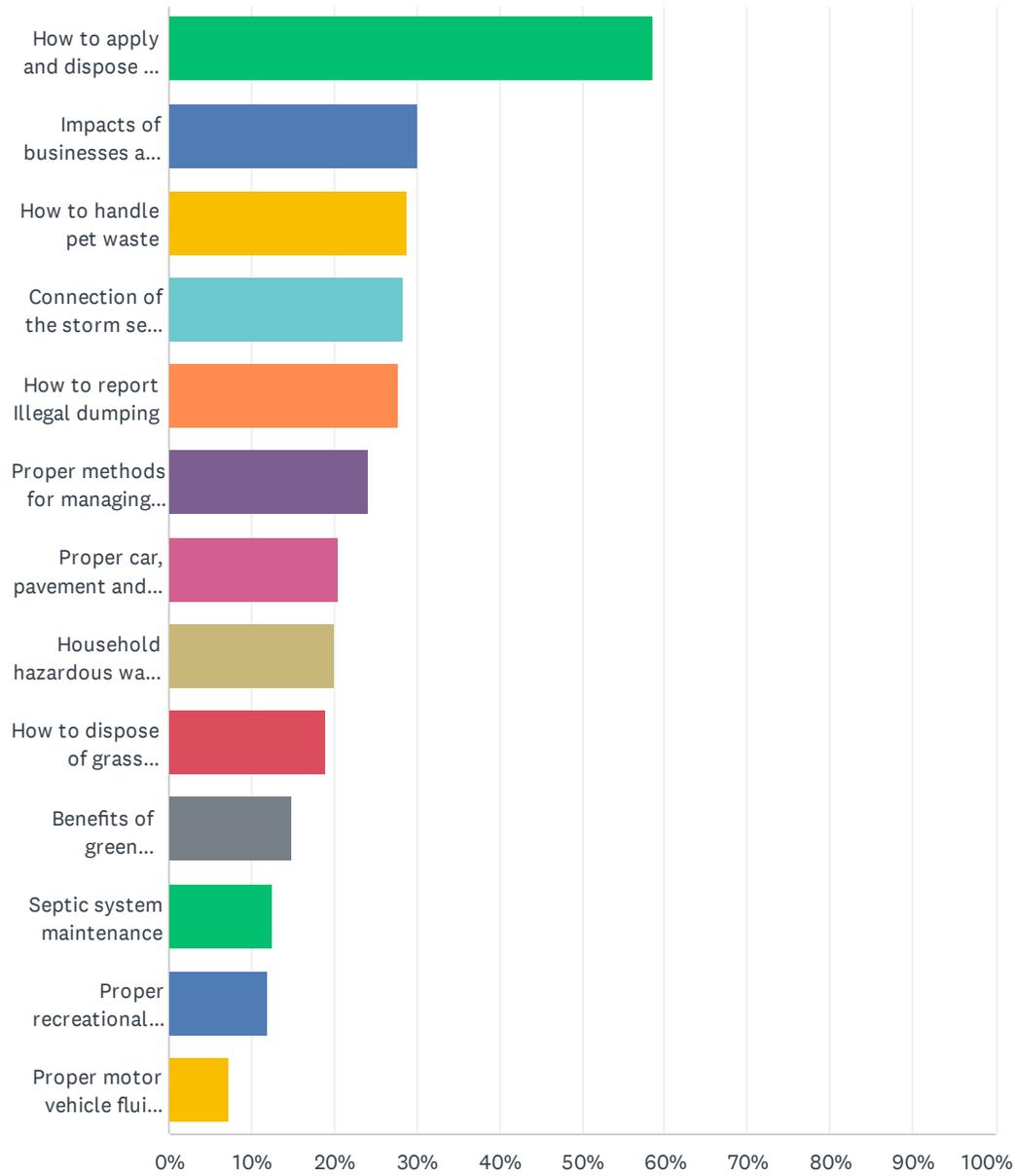
Answered: 2,808 Skipped: 288



	VERY SIGNIFICANT	SOMEWHAT SIGNIFICANT	NOT VERY SIGNIFICANT	NOT A PROBLEM	DON'T KNOW	TOTAL	WEIGHTED AVERAGE
(no label)	14.42% 405	57.83% 1,624	16.81% 472	7.23% 203	3.70% 104	2,808	2.28

Q26 What do you consider the most important things to educate the public on? (Choose up to 5)

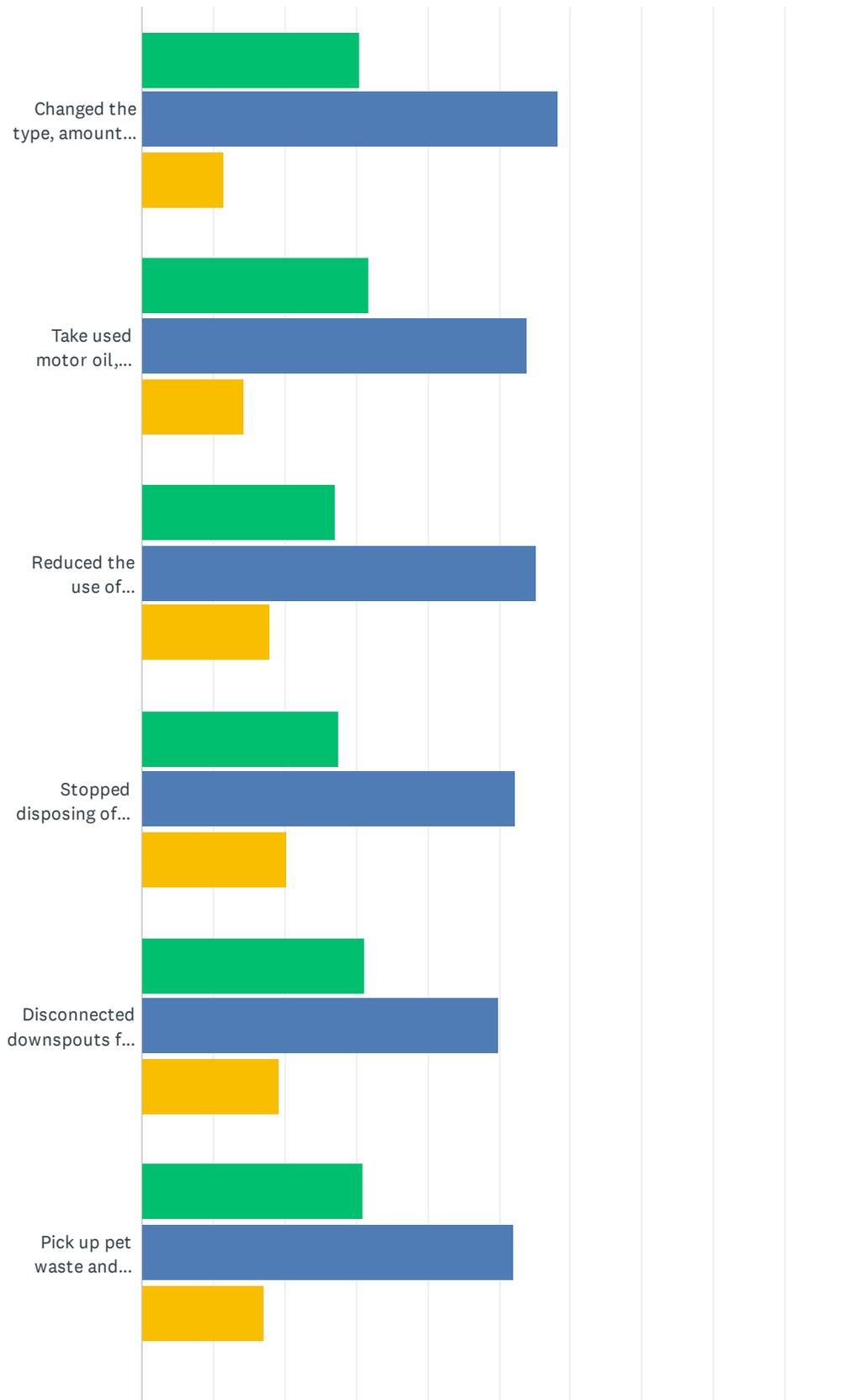
Answered: 2,800 Skipped: 296

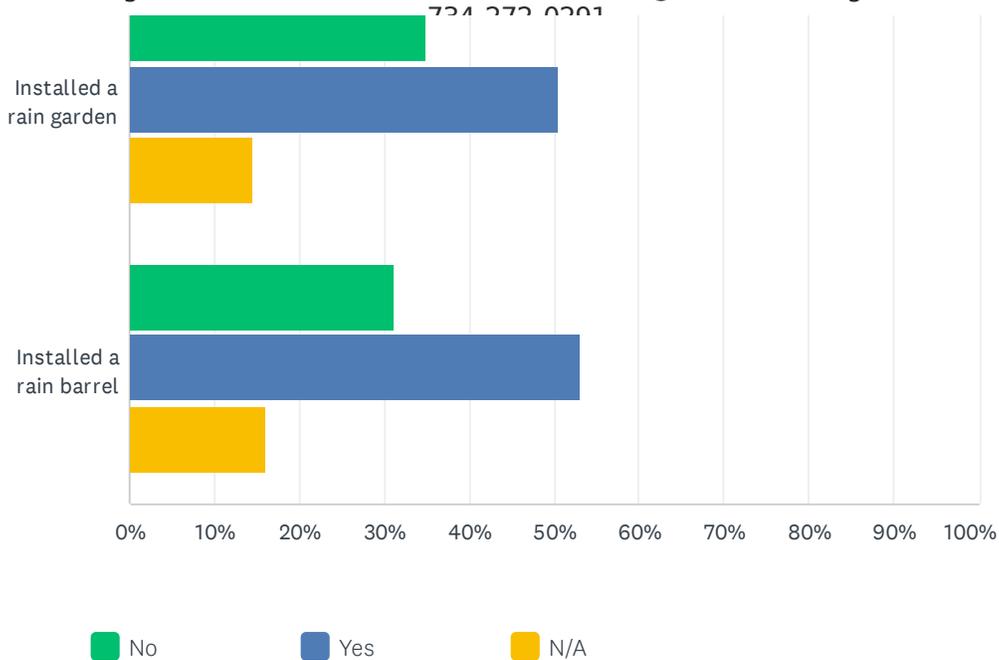


ANSWER CHOICES	RESPONSES	
How to apply and dispose of pesticides/herbicides/fertilizers	58.64%	1,642
Impacts of businesses and industries on stormwater runoff	29.96%	839
How to handle pet waste	28.75%	805
Connection of the storm sewer system to local waterbodies	28.46%	797
How to report Illegal dumping	27.71%	776
Proper methods for managing river/lake front properties	24.11%	675
Proper car, pavement and power washing practices	20.43%	572
Household hazardous waste disposal	20.00%	560
How to dispose of grass clippings and leaf litter	18.93%	530
Benefits of green infrastructure/low-impact development (like rain gardens/rain barrels or using native plants)	14.89%	417
Septic system maintenance	12.64%	354
Proper recreational vehicle waste disposal	11.93%	334
Proper motor vehicle fluid disposal	7.18%	201
Total Respondents: 2,800		

Q27 Have you done any of the following? (Choose all that apply)

Answered: 2,790 Skipped: 306

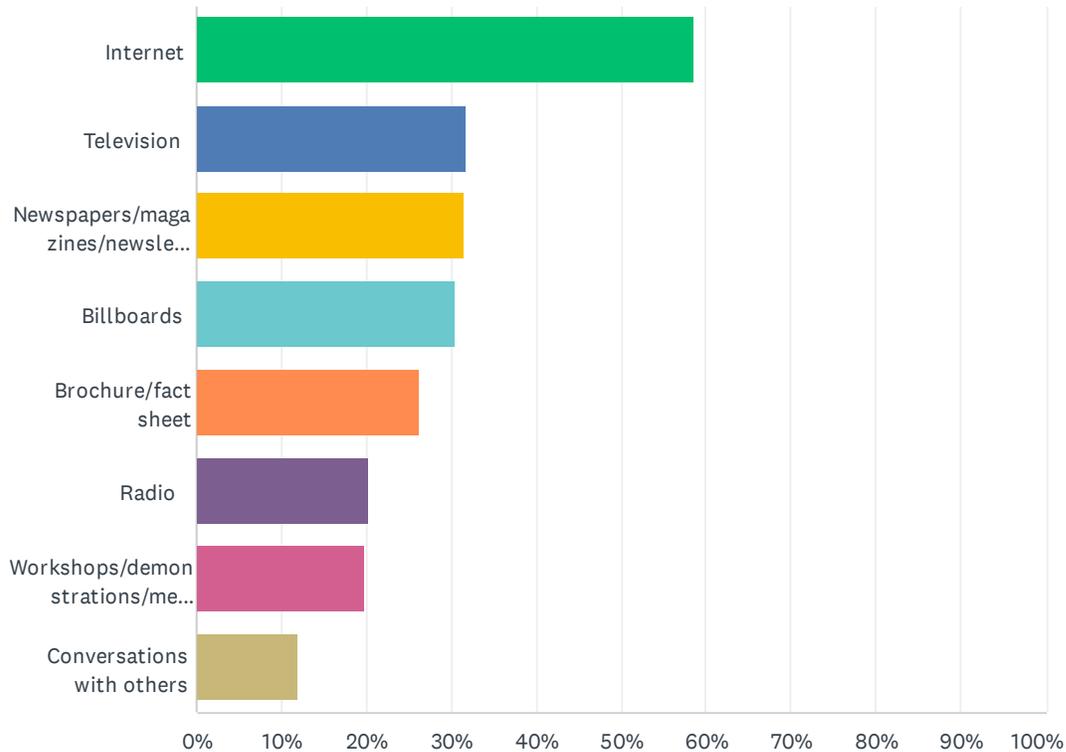




	NO	YES	N/A	TOTAL	WEIGHTED AVERAGE
Changed the type, amounts or application of lawn and garden fertilizers, pesticides or other chemicals	30.45% 841	58.11% 1,605	11.44% 316	2,762	2.31
Take used motor oil, antifreeze, batteries or other household hazardous materials to recycling facilities	31.76% 873	53.95% 1,483	14.30% 393	2,749	2.26
Reduced the use of detergents or other chemicals for home car washings	27.00% 744	55.19% 1,521	17.82% 491	2,756	2.34
Stopped disposing of any waste material into catch basins and storm drains	27.46% 753	52.33% 1,435	20.20% 554	2,742	2.31
Disconnected downspouts from storm drains to allow roof runoff to seep into the ground	31.03% 855	49.84% 1,373	19.13% 527	2,755	2.23
Pick up pet waste and dispose of properly	30.93% 851	52.09% 1,433	16.98% 467	2,751	2.25
Installed a rain garden	35.05% 962	50.49% 1,386	14.46% 397	2,745	2.18
Installed a rain barrel	31.07% 852	53.03% 1,454	15.90% 436	2,742	2.26

Q28 Where are you likely to seek information about water quality? (Choose all that apply)

Answered: 2,785 Skipped: 311



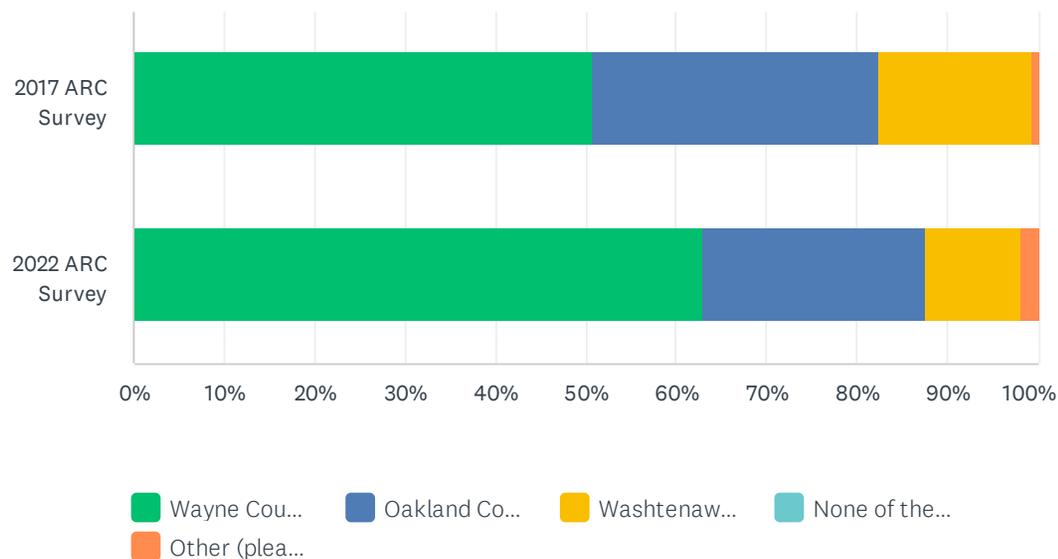
ANSWER CHOICES	RESPONSES	
Internet	58.64%	1,633
Television	31.71%	883
Newspapers/magazines/newsletters	31.63%	881
Billboards	30.41%	847
Brochure/fact sheet	26.32%	733
Radio	20.22%	563
Workshops/demonstrations/meetings	19.86%	553
Conversations with others	11.85%	330
Total Respondents: 2,785		

APPENDIX B

DETAILED COMPARISON FROM 2017/2022 SURVEY QUESTIONS AND RESULTS WATER QUALITY CHANGES IN THE ROUGE RIVER

Q1 Where do you live?

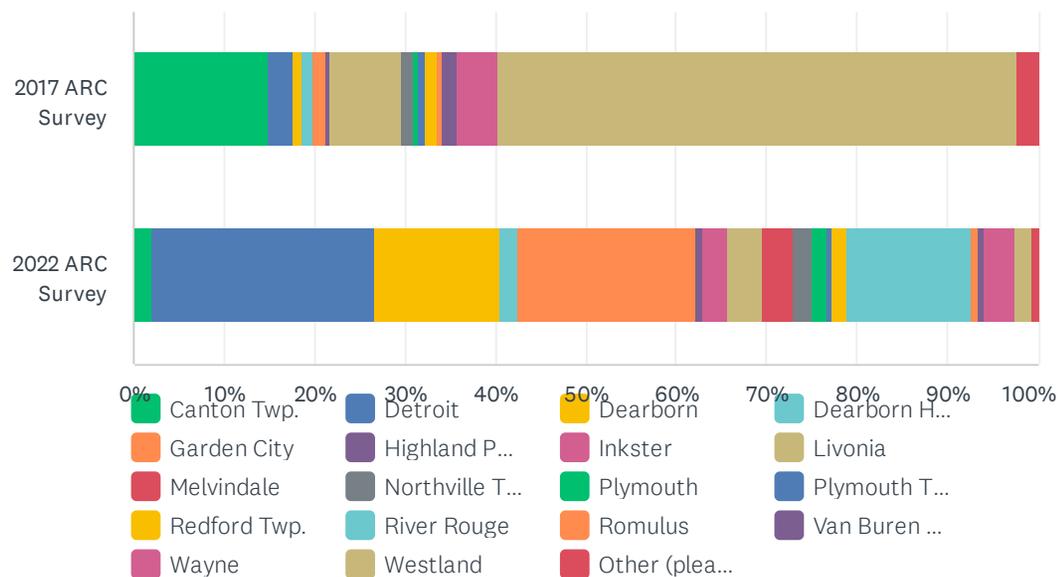
Answered: 3,626 Skipped: 0



	WAYNE COUNTY	OAKLAND COUNTY	WASHTENAW COUNTY	NONE OF THE ABOVE	OTHER (PLEASE SPECIFY)	TOTAL
2017 ARC Survey	50.75% 269	31.70% 168	16.98% 90	0.00% 0	0.57% 3	14.62% 530
2022 ARC Survey	62.98% 1,950	24.61% 762	10.66% 330	0.00% 0	1.74% 54	85.38% 3,096
Total Respondents	2,219	930	420	0	57	3,626

Q2 In Wayne County, which city, township or village do you live in?

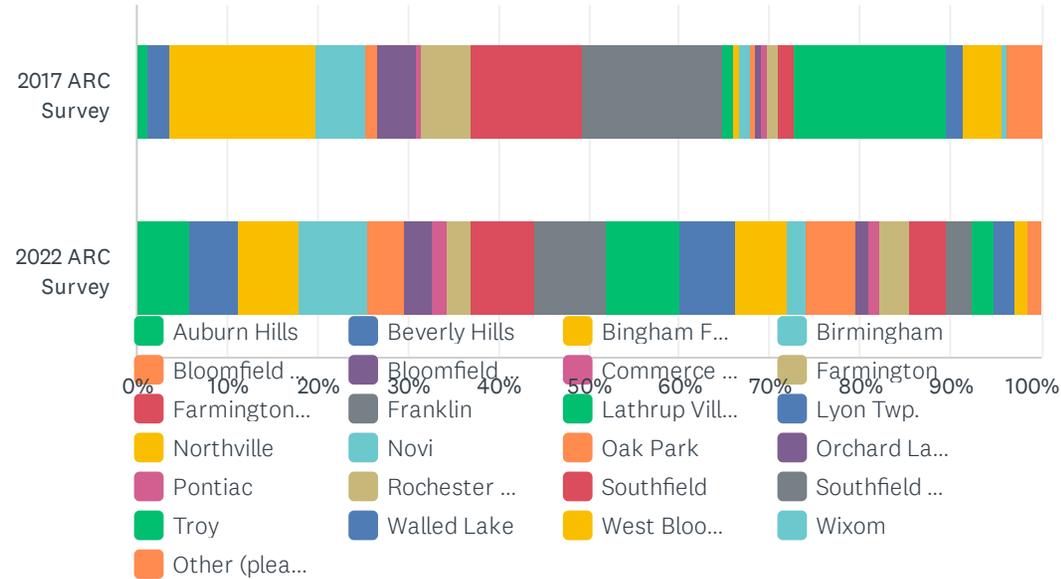
Answered: 2,176 Skipped: 1,450



	CANTON TWP.	DETROIT	DEARBORN	DEARBORN HEIGHTS	GARDEN CITY	HIGHLAND PARK	INKSTER	LIVONIA	MELVINDALE	NORTHVILLE TWP.	PLYMOUTH
2017 ARC Survey	14.83% 39	2.66% 7	1.14% 3	1.14% 3	1.52% 4	0.38% 1	0.00% 0	7.98% 21	0.00% 0	1.14% 3	0.76% 2
2022 ARC Survey	2.04% 39	24.46% 468	14.01% 268	1.99% 38	19.76% 378	0.63% 12	2.67% 51	4.03% 77	3.35% 64	2.14% 41	1.62% 31
Total Respondents	78	475	271	41	382	13	51	98	64	44	33

Q3 In Oakland County, which city, township or village do you live in?

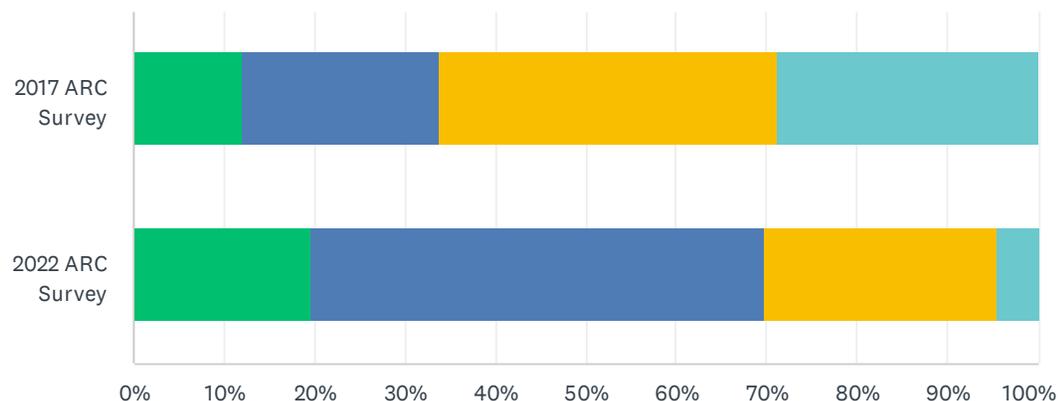
Answered: 895 Skipped: 2,731



	AUBURN HILLS	BEVERLY HILLS	BINGHAM FARMS	BIRMINGHAM	BLOOMFIELD HILLS	BLOOMFIELD TWP.	COMMERCE TWP.	FARMINGTON	FARMINGTON HILLS	FRANKLIN
2017 ARC Survey	1.23% 2	2.47% 4	16.05% 26	5.56% 9	1.23% 2	4.32% 7	0.62% 1	5.56% 9	12.35% 20	15.43% 25
2022 ARC Survey	5.87% 43	5.32% 39	6.82% 50	7.64% 56	3.96% 29	3.14% 23	1.64% 12	2.73% 20	6.82% 50	8.05% 59
Total Respondents	45	43	76	65	31	30	13	29	70	84

Q4 In Washtenaw County, which city, township or village do you live in?

Answered: 410 Skipped: 3,216

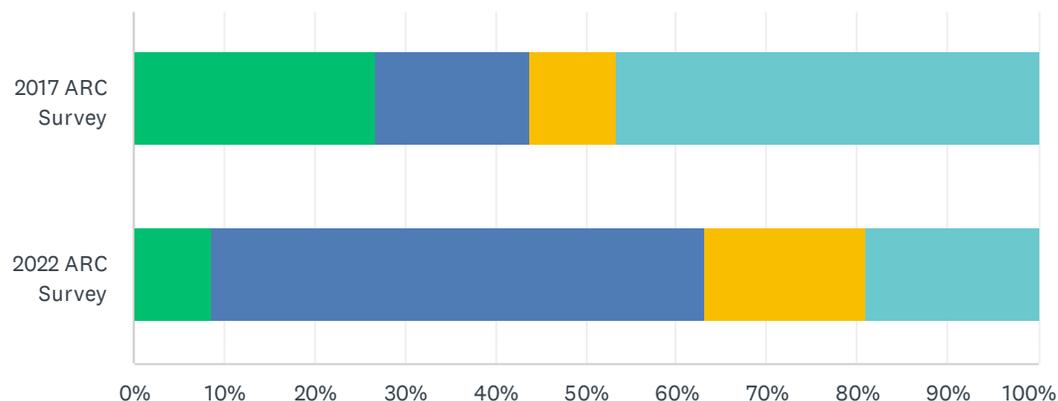


■ Salem Twp.
 ■ Superior T...
 ■ Ypsilanti T...
 ■ Other (plea...

	SALEM TWP.	SUPERIOR TWP.	YPSILANTI TWP.	OTHER (PLEASE SPECIFY)	TOTAL
2017 ARC Survey	12.05% 10	21.69% 18	37.35% 31	28.92% 24	20.24% 83
2022 ARC Survey	19.57% 64	50.15% 164	25.69% 84	4.59% 15	79.76% 327
Total Respondents	74	182	115	39	410

Q5 How long have you lived at your current residence?

Answered: 3,456 Skipped: 170

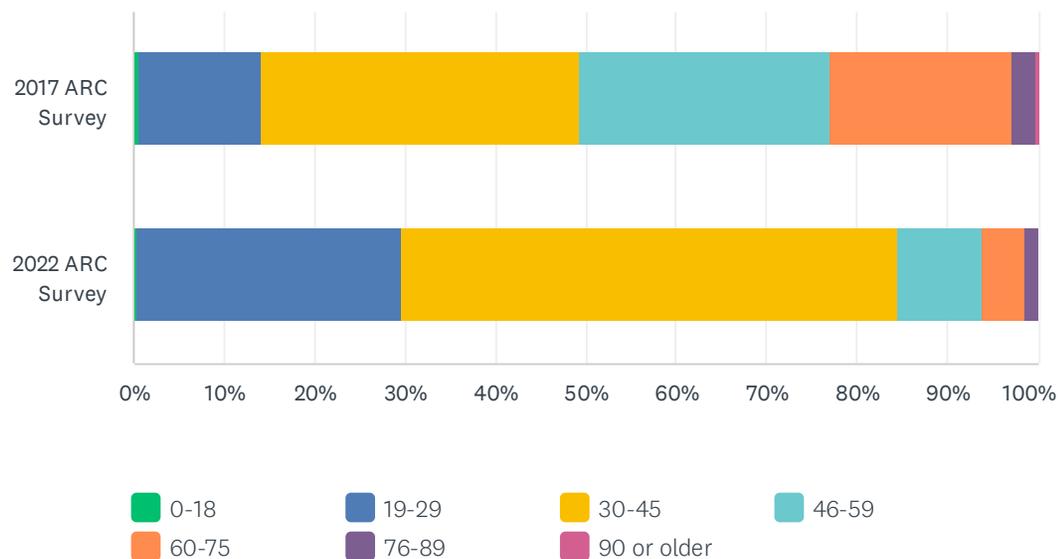


■ 1-3 years
 ■ 4-6 years
 ■ 7-10 years
 ■ 10 or more ...

	1-3 YEARS	4-6 YEARS	7-10 YEARS	10 OR MORE YEARS	TOTAL
2017 ARC Survey	26.85% 134	16.83% 84	9.62% 48	47.09% 235	14.50% 501
2022 ARC Survey	8.49% 251	54.68% 1,617	17.86% 528	18.97% 561	85.56% 2,957
Total Respondents	385	1,701	576	796	3,456

Q6 How old are you?

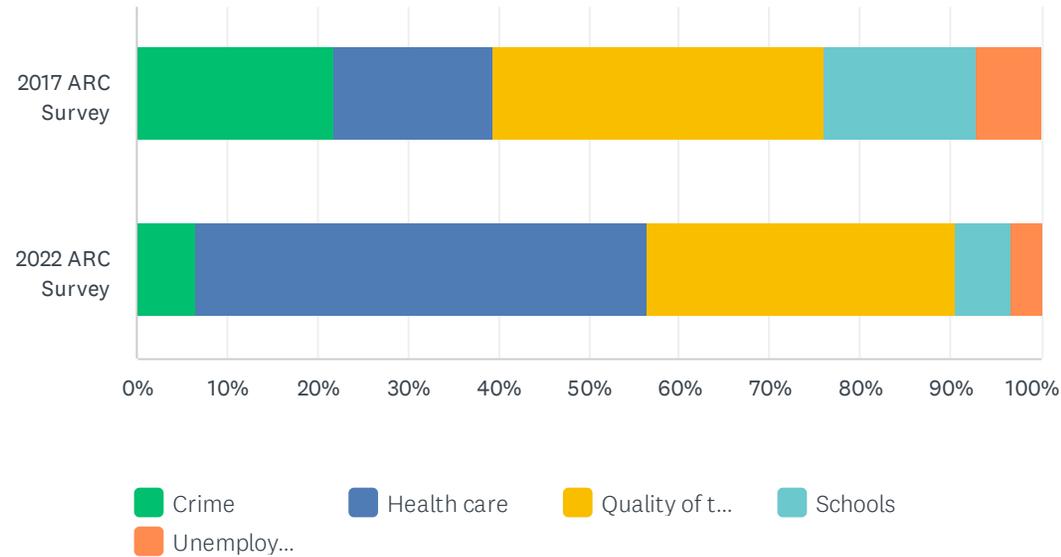
Answered: 3,443 Skipped: 183



	0-18	19-29	30-45	46-59	60-75	76-89	90 OR OLDER	TOTAL
2017 ARC Survey	0.60% 3	13.51% 67	35.08% 174	27.82% 138	20.16% 100	2.62% 13	0.20% 1	14.41% 496
2022 ARC Survey	0.48% 14	29.25% 862	54.77% 1,614	9.33% 275	4.82% 142	1.32% 39	0.03% 1	85.59% 2,947
Total Respondents	17	929	1,788	413	242	52	2	3,443

Q7 What is the biggest problem facing your local community right now?

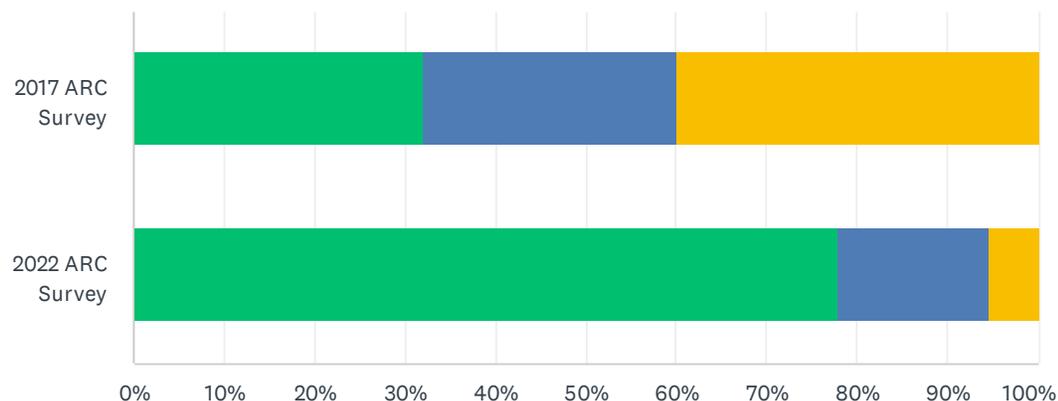
Answered: 3,417 Skipped: 209



	CRIME	HEALTH CARE	QUALITY OF THE ENVIRONMENT	SCHOOLS	UNEMPLOYMENT	TOTAL
2017 ARC Survey	21.93% 107	17.62% 86	36.48% 178	16.80% 82	7.17% 35	14.28% 488
2022 ARC Survey	6.56% 192	49.95% 1,463	34.04% 997	6.28% 184	3.18% 93	85.72% 2,929
Total Respondents	299	1,549	1,175	266	128	3,417

Q8 Do you live in a watershed?

Answered: 3,405 Skipped: 221

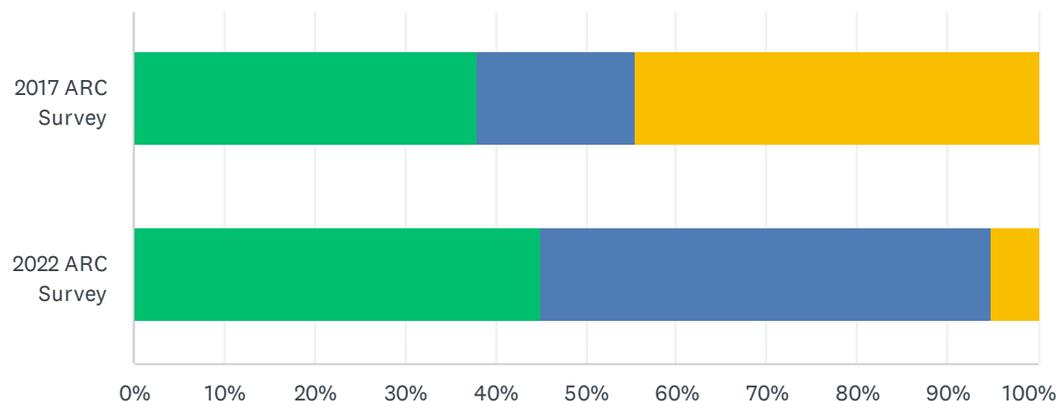


■ Yes
 ■ No
 ■ Don't know

	YES	NO	DON'T KNOW	TOTAL
2017 ARC Survey	32.17% 157	27.87% 136	39.96% 195	14.33% 488
2022 ARC Survey	77.89% 2,272	16.83% 491	5.28% 154	85.67% 2,917
Total Respondents	2,429	627	349	3,405

Q9 Where does the rain water running off your property drain to?

Answered: 3,391 Skipped: 235

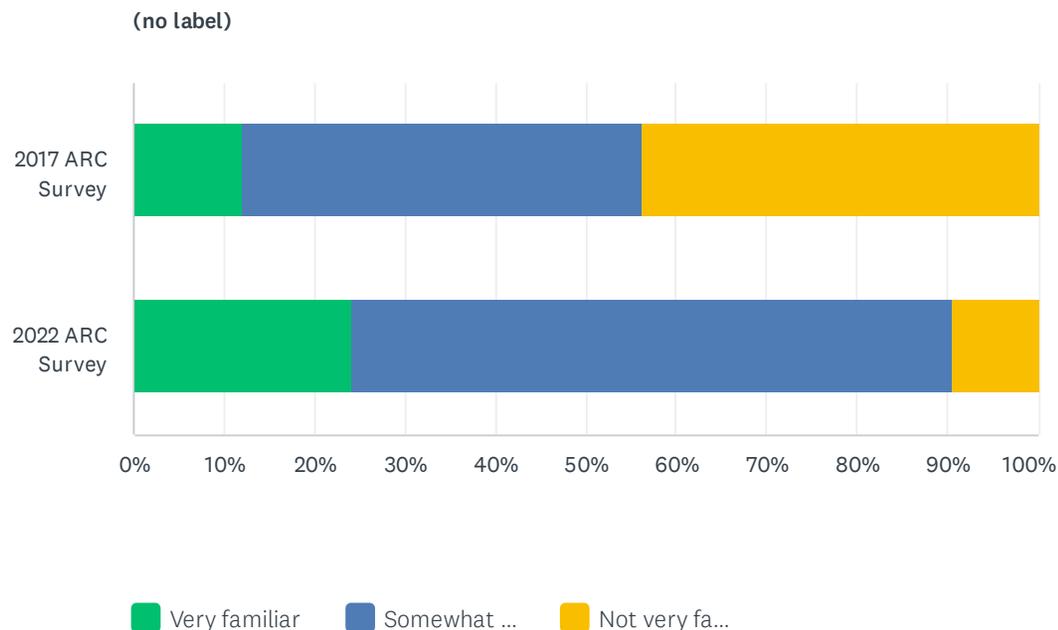


■ A river, stre...
 ■ A wastewat...
 ■ Don't know

	A RIVER, STREAM OR LAKE	A WASTEWATER TREATMENT PLANT	DON'T KNOW	TOTAL
2017 ARC Survey	38.10% 184	17.39% 84	44.51% 215	14.24% 483
2022 ARC Survey	45.08% 1,311	49.72% 1,446	5.19% 151	85.76% 2,908
Total Respondents	1,495	1,530	366	3,391

Q10 How familiar are you with the Rouge River Watershed and its network of rivers and streams running throughout southeast Michigan?

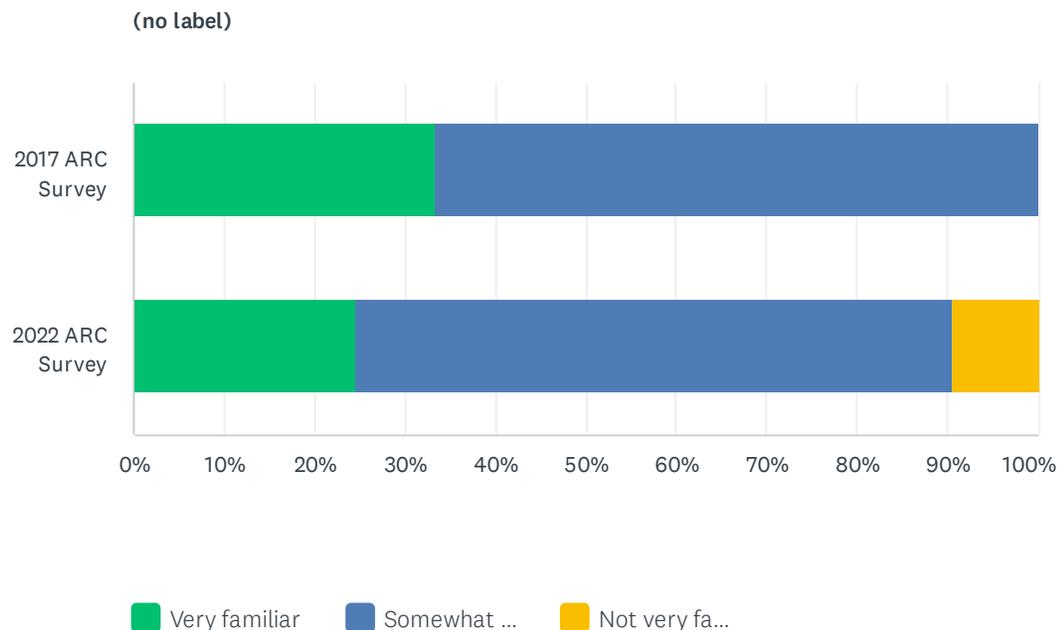
Answered: 3,377 Skipped: 249



(no label)					
	VERY FAMILIAR	SOMEWHAT FAMILIAR	NOT VERY FAMILIAR	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	12.11% 58	44.05% 211	43.84% 210	14.18% 479	1.00
2022 ARC Survey	24.22% 702	66.32% 1,922	9.45% 274	85.82% 2,898	1.00

Q11 How familiar are you with the Rouge River Watershed and its network of rivers and streams running throughout southeast Michigan?

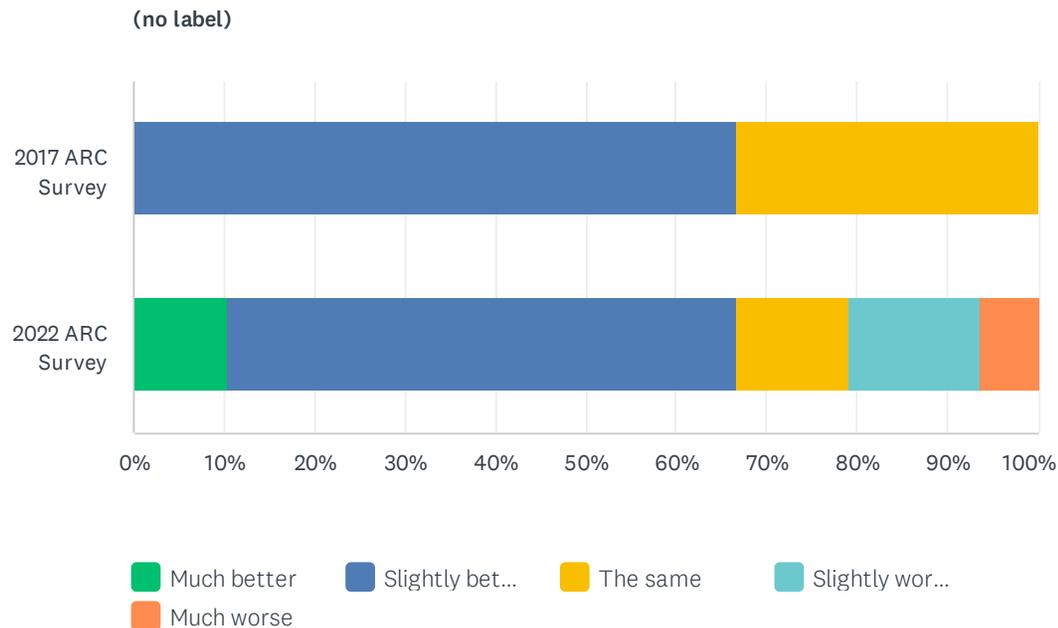
Answered: 56 Skipped: 3,570



(no label)					
	VERY FAMILIAR	SOMEWHAT FAMILIAR	NOT VERY FAMILIAR	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	33.33%	66.67%	0.00%	5.36%	1.00
	1	2	0	3	
2022 ARC Survey	24.53%	66.04%	9.43%	94.64%	1.00
	13	35	5	53	

Q12 In your opinion, over the past fifteen (15) years the water quality of the Rouge River is. . .

Answered: 51 Skipped: 3,575

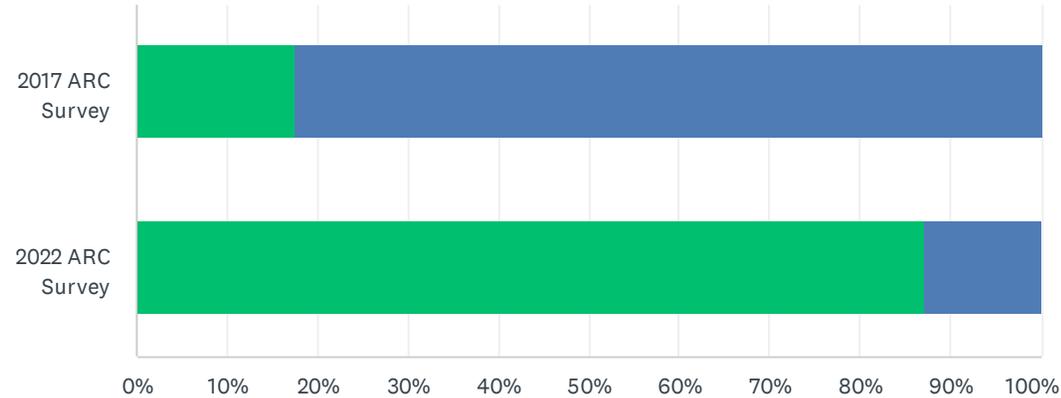


(no label)

	MUCH BETTER	SLIGHTLY BETTER	THE SAME	SLIGHTLY WORSE	MUCH WORSE	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	0.00% 0	66.67% 2	33.33% 1	0.00% 0	0.00% 0	5.88% 3	2.33
2022 ARC Survey	10.42% 5	56.25% 27	12.50% 6	14.58% 7	6.25% 3	94.12% 48	2.50

Q13 Is your home located along the Rouge River or creek?

Answered: 3,372 Skipped: 254

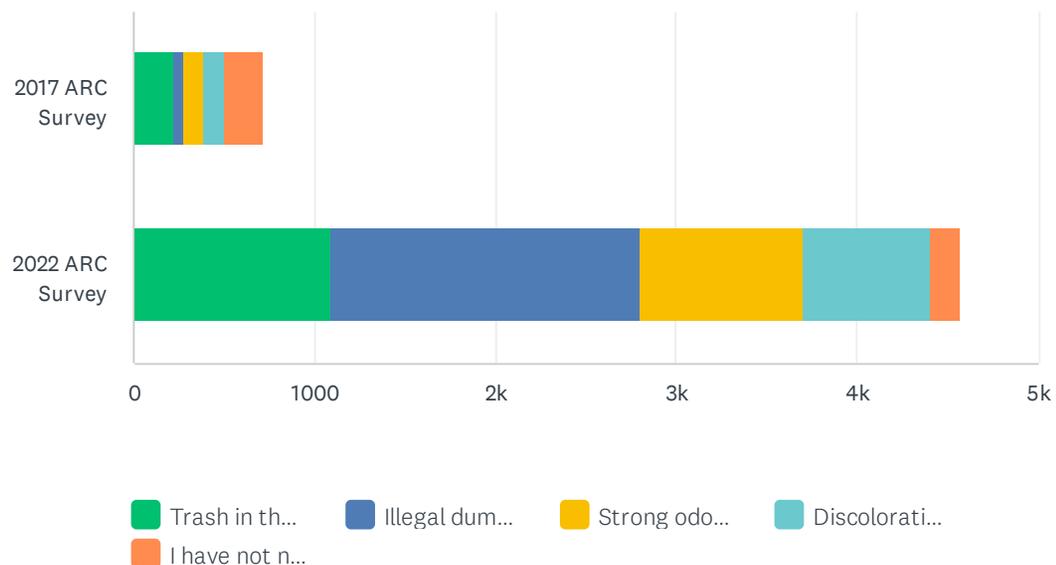


■ Yes ■ No

	YES	NO	TOTAL
2017 ARC Survey	17.61% 84	82.39% 393	14.15% 477
2022 ARC Survey	87.18% 2,524	12.82% 371	85.85% 2,895
Total Respondents	2,608	764	3,372

Q14 At any time in the last ten (10) years have you noticed any of the below in the Rouge River?

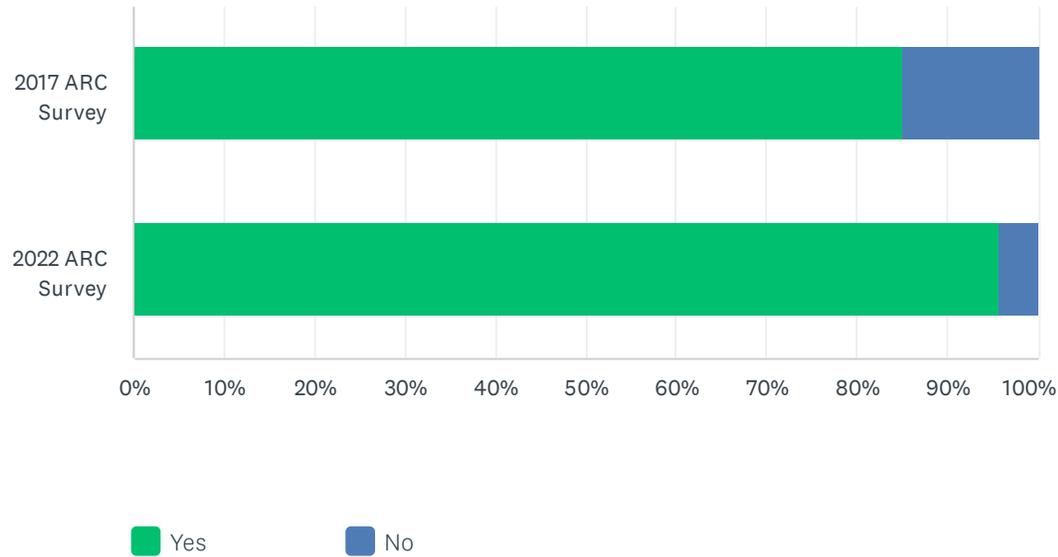
Answered: 3,350 Skipped: 276



	TRASH IN THE RIVER	ILLEGAL DUMPING IN THE RIVER	STRONG ODORS BY THE RIVER	DISCOLORATION OF THE WATER	I HAVE NOT NOTICED ANYTHING UNUSUAL	TOTAL	
2017 ARC Survey	47.55% 223	11.30% 53	23.88% 112	23.67% 111	45.42% 213	21.25% 712	
2022 ARC Survey	37.87% 1,091	59.53% 1,715	31.14% 897	24.57% 708	5.69% 164	136.57% 4,575	
Total Respondents	1,314	1,768	1,009	819	377	3,350	
	PLEASE DESCRIBE IN MORE DETAIL IF NECESSARY OR IF YOU HAVE SEEN SOMETHING THAT IS NOT LISTED ABOVE (INCLUDE CROSS STREETS IF POSSIBLE)					TOTAL	
2017 ARC Survey						38	38
2022 ARC Survey						42	42

Q15 In the past five (5) years, have you or members of your family used or visited a park or other place with a river or stream running through it?

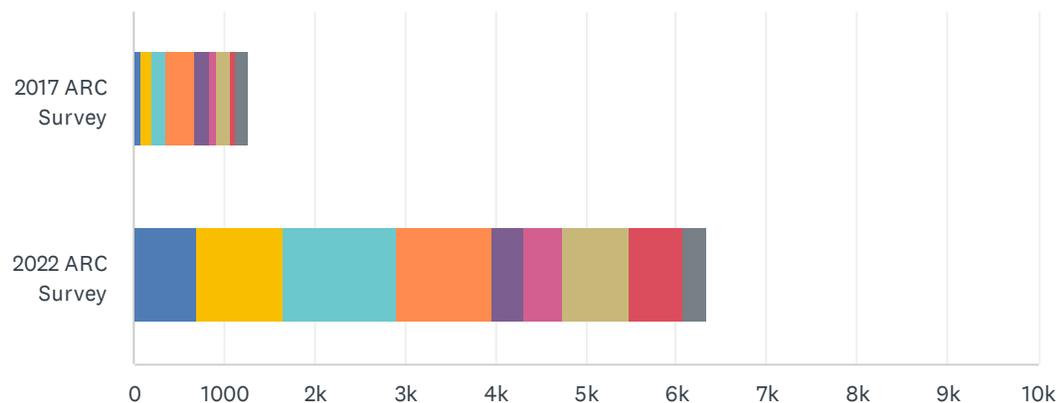
Answered: 3,342 Skipped: 284



	YES	NO	TOTAL
2017 ARC Survey	85.01% 397	14.99% 70	13.97% 467
2022 ARC Survey	95.76% 2,753	4.24% 122	86.03% 2,875
Total Respondents	3,150	192	3,342

Q16 What activities have you or members of your family used the river or parks for during the past five years? (Check all that apply)

Answered: 3,129 Skipped: 497

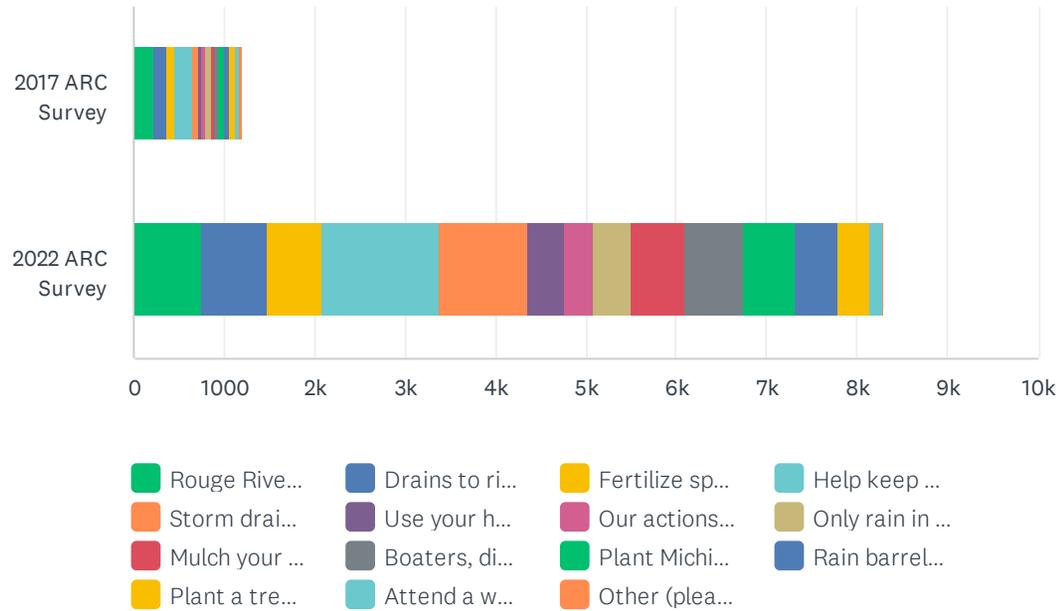


- None of the...
- Fishing in t...
- Canoeing, b...
- Biking
- Walking, ru...
- Picnicking
- Play a spor...
- Bird or wildl...
- Swimming ...
- Using playg...
- Other

	NONE OF THE ABOVE	FISHING IN THE RIVER	CANOEING, BOATING OR TUBING IN THE RIVER	BIKING	WALKING, RUNNING OR JOGGING	PICNICKING	PLAY A SPORT (SOCCER, SLEDDING, BASEBALL)	BIRD OR WILDLIFE WATCHING	SWIMMING OR WADING IN THE RIVER	USING PLAYGROUND EQUIPMENT	OTHER	TOTAL
2017 ARC Survey	0.00% 0	18.53% 73	32.99% 130	38.07% 150	82.99% 327	42.64% 168	20.81% 82	34.77% 137	17.01% 67	36.04% 142	0.00% 0	4
2022 ARC Survey	0.00% 0	25.23% 690	35.43% 969	45.85% 1,254	38.46% 1,052	12.72% 348	15.90% 435	27.02% 739	21.17% 579	9.84% 269	0.00% 0	20
Total Respondents	0	763	1,099	1,404	1,379	516	517	876	646	411	0	
	OTHER (PLEASE SPECIFY)										TOTAL	
2017 ARC Survey											11	11
2022 ARC Survey											12	12

Q17 Which of the following phrases encouraging stewardship of the Rouge River have you seen or heard? (Check all that apply)

Answered: 3,306 Skipped: 320

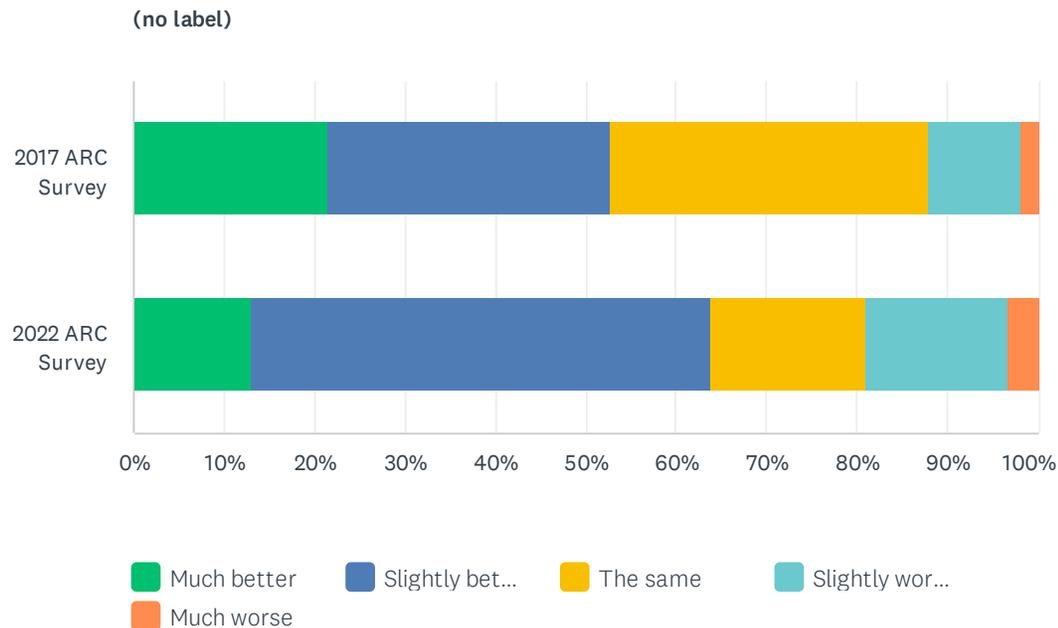


WATER QUALITY CHANGES IN THE ROUGE RIVER 2022 SURVEY www.allianceofrougecommunities.com contact us at:
info@allianceofrougecommunities.com or 734-272-0291

	ROUGE RIVER, OURS TO PROTECT	DRAINS TO RIVER (PAINTED MESSAGE ON STORM DRAIN)	FERTILIZE SPARINGLY AND CARINGLY	HELP KEEP OUR RIVERS CLEAN	STORM DRAINS AREN'T GARBAGE CANS	USE YOUR HEAD, YOU LIVE IN A WATERSHED	OUR ACTIONS AFFECT THE ROUGE RIVER	ONLY RAIN IN THE DRAIN! KEEP OUR RIVERS CLEAN	MULCH YOUR LEAVES TO HELP KEEP OUR RIVERS CLEAN	BOATERS, DISPOSE OF WASTE PROPERLY; KEEP OUR RIVERS CLEAN	PLANT MICHIGAN NATIVES TO HELP KEEP OUR RIVER CLEAN	RAI BAF HEL KEU OUF RIV/ CLE
2017 ARC Survey	48.78% 220	31.26% 141	17.52% 79	49.45% 223	12.86% 58	6.43% 29	11.31% 51	13.97% 63	8.43% 38	10.64% 48	11.53% 52	1
2022 ARC Survey	26.48% 756	25.11% 717	21.47% 613	45.11% 1,288	34.08% 973	14.36% 410	11.42% 326	14.78% 422	20.39% 582	23.47% 670	20.07% 573	1
Total Respondents	976	858	692	1,511	1,031	439	377	485	620	718	625	523

Q18 In your opinion, over the past fifteen (15) years the water quality of the Rouge River is. . .

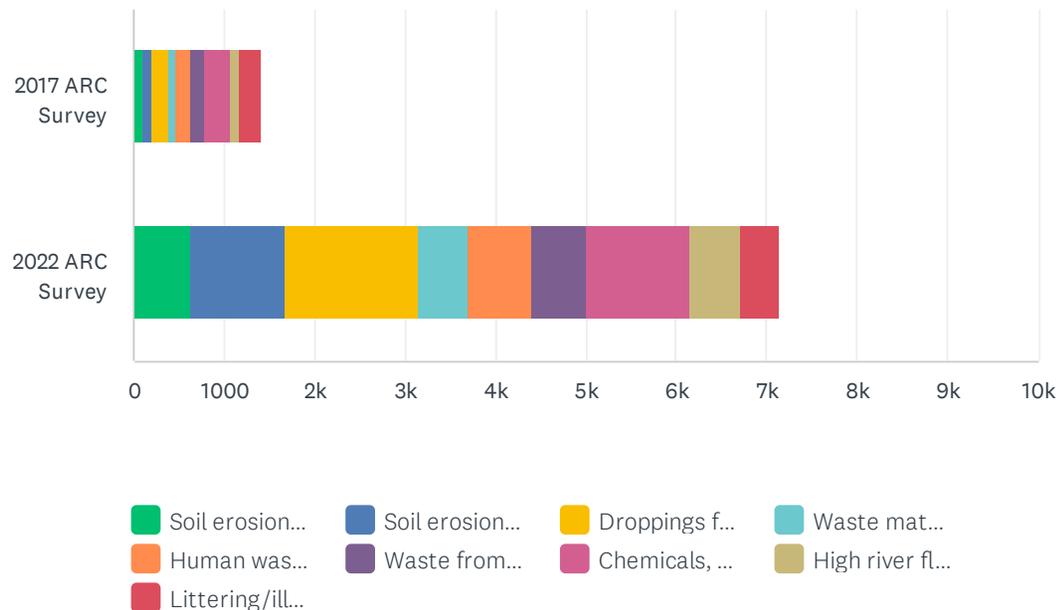
Answered: 3,300 Skipped: 326



(no label)							
	MUCH BETTER	SLIGHTLY BETTER	THE SAME	SLIGHTLY WORSE	MUCH WORSE	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	21.38% 96	31.40% 141	35.19% 158	10.24% 46	1.78% 8	13.61% 449	2.40
2022 ARC Survey	13.05% 372	50.75% 1,447	17.15% 489	15.85% 452	3.19% 91	86.39% 2,851	2.45

Q19 The items listed below are sources of water quality pollution across the country. In your opinion, which ones are a problem in your area? (Check all that apply)

Answered: 3,285 Skipped: 341

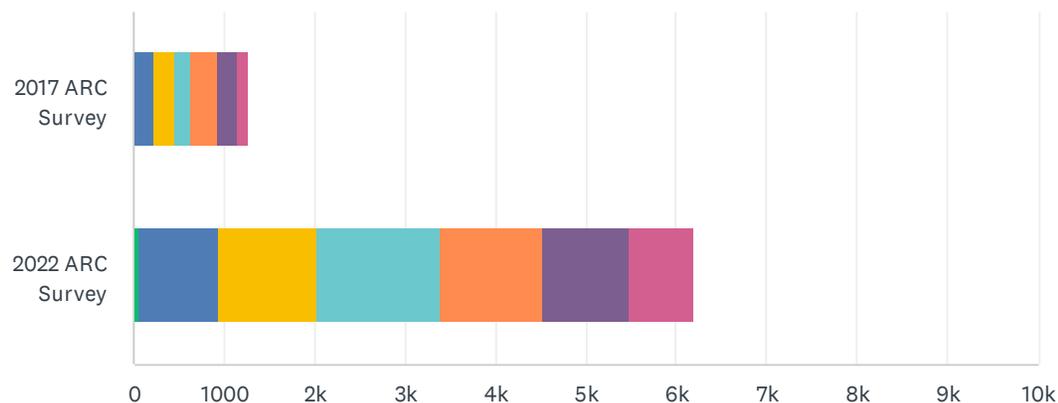


WATER QUALITY CHANGES IN THE ROUGE RIVER 2022 SURVEY www.allianceofrougecommunities.com contact us at:
info@allianceofrougecommunities.com or 734-272-0291

	SOIL EROSION FROM CONSTRUCTION SITES	SOIL EROSION FROM SHORELINE AND/OR STREAMBANKS	DROPPINGS FROM GEESE, DUCKS AND OTHER WATERFOWL	WASTE MATERIAL FROM PETS	HUMAN WASTE (SEWAGE) DISCHARGES THAT OCCUR DURING HEAVY RAIN STORMS FROM COMBINED SEWER OVERFLOWS OR CROSS-CONNECTIONS BETWEEN THE SANITARY AND STORM SEWERS	WASTE FROM BUSINESSES AND INDUSTRIAL FACILITIES	CHEMICALS, OILS, FERTILIZERS, AND OTHER POLLUTING MATERIALS THAT ARE FOUND ON THE SURFACE OF PARKING LOTS, STREETS, FARMS, AND LAWNS WASHED INTO THE RIVER BY RAIN	HIGH RIVER FLOWS DURING RAIN EVENTS	LITTERING/ILLEGAL DUMPING OF TRASH
2017 ARC Survey	24.77% 109	19.55% 86	43.64% 192	20.45% 90	35.91% 158	33.41% 147	63.64% 280	25.45% 112	55.6
2022 ARC Survey	21.97% 625	36.87% 1,049	51.85% 1,475	19.51% 555	24.36% 693	21.72% 618	39.89% 1,135	19.33% 550	15.7
Total Respondents	734	1,135	1,667	645	851	765	1,415	662	692

Q20 In your opinion has poor water quality caused any of the following? (Check all that apply)

Answered: 3,276 Skipped: 350

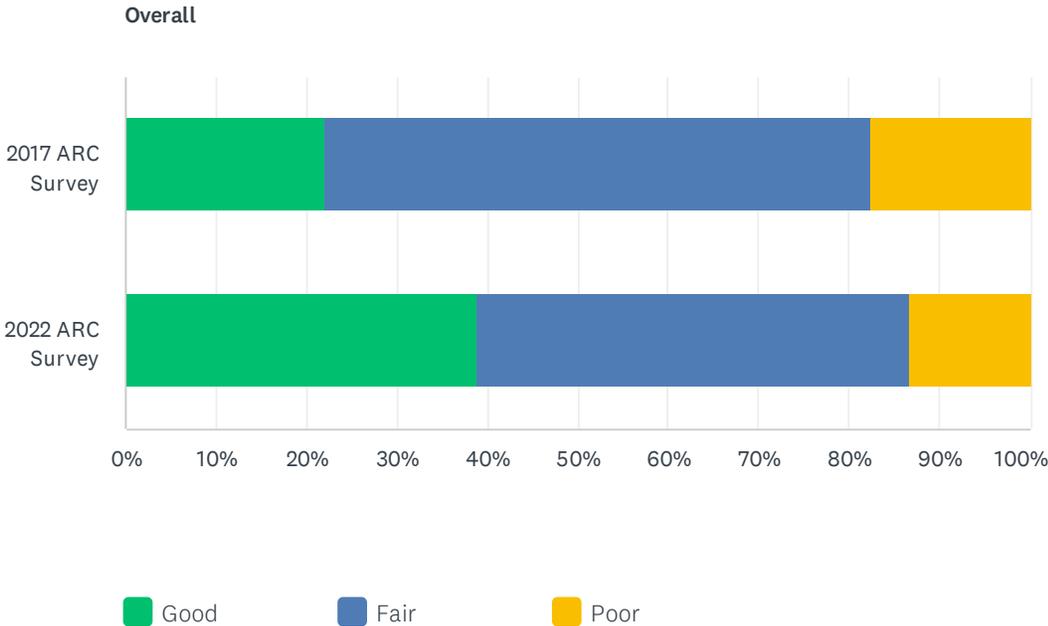


■ None of the...
 ■ Polluted sw...
 ■ Contamina...
 ■ Loss of desi...
■ Reduced be...
 ■ Reduced qu...
 ■ Lower prop...

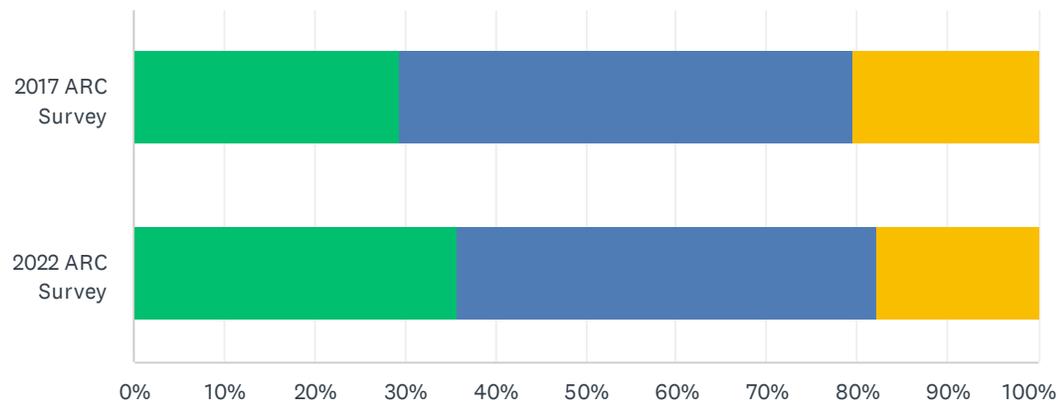
	NONE OF THE ABOVE	POLLUTED SWIMMING AREAS	CONTAMINATED FISH	LOSS OF DESIRABLE FISH SPECIES	REDUCED BEAUTY OF LAKES OR STREAMS	REDUCED QUALITY/AVAILABILITY OF WATER RECREATION ACTIVITIES	LOWER PROPERTY VALUES	TOTAL
2017 ARC Survey	0.00% 0	50.23% 220	50.68% 222	42.92% 188	67.12% 294	48.86% 214	31.05% 136	38.89% 1,274
2022 ARC Survey	1.94% 55	31.32% 889	38.09% 1,081	48.24% 1,369	39.92% 1,133	33.33% 946	25.62% 727	189.26% 6,200
Total Respondents	55	1,109	1,303	1,557	1,427	1,160	863	3,276

Q21 How would you rate the water quality of the Rouge River?

Answered: 3,255 Skipped: 371

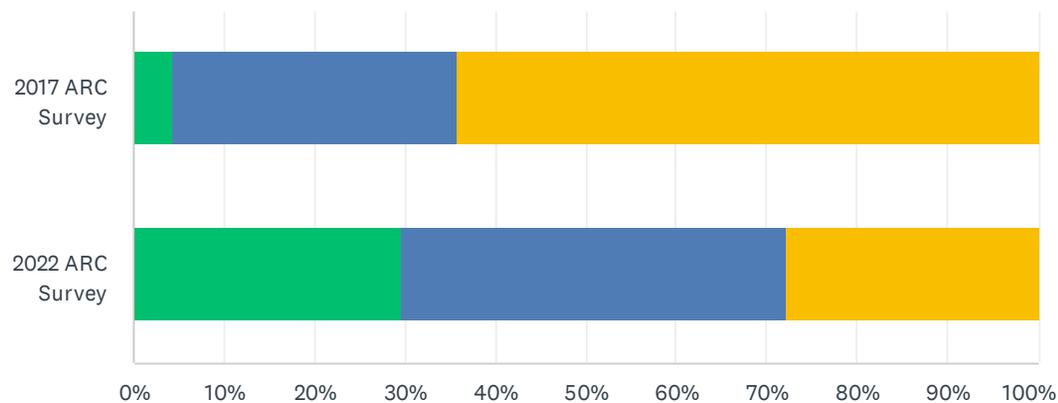


For canoeing/kayaking/boating



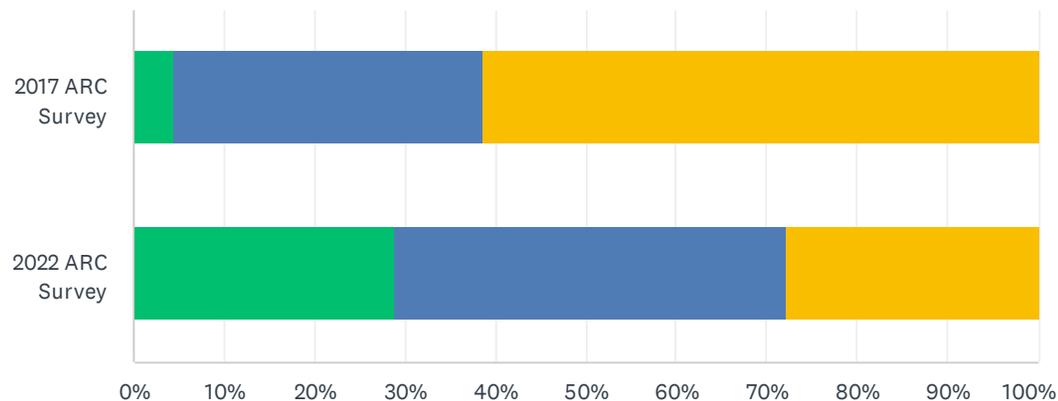
Good Fair Poor

For eating locally caught fish



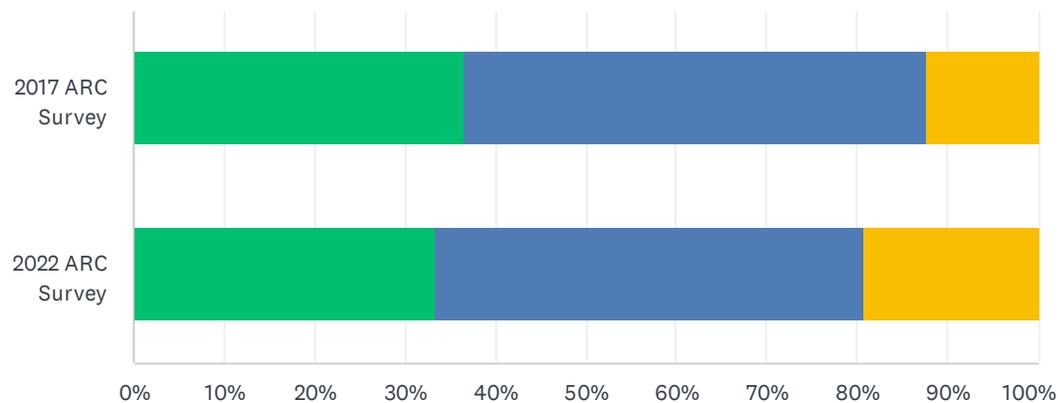
Good Fair Poor

For swimming



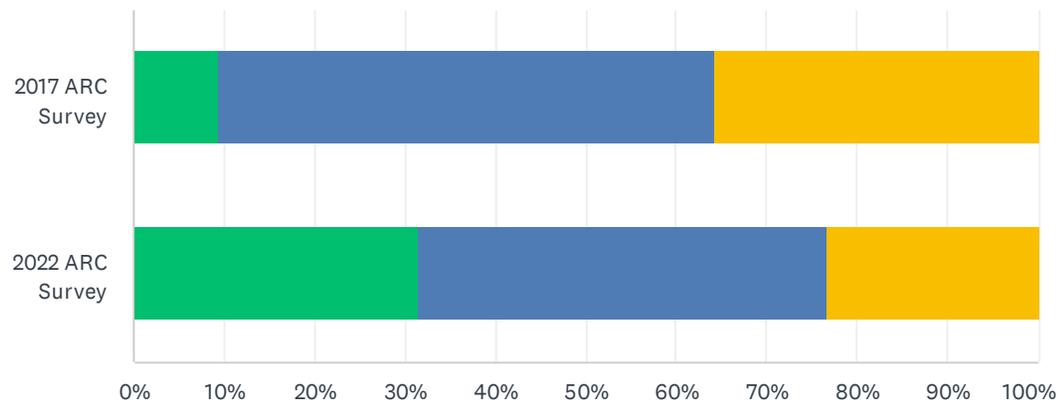
Good Fair Poor

For picnicking and family activities



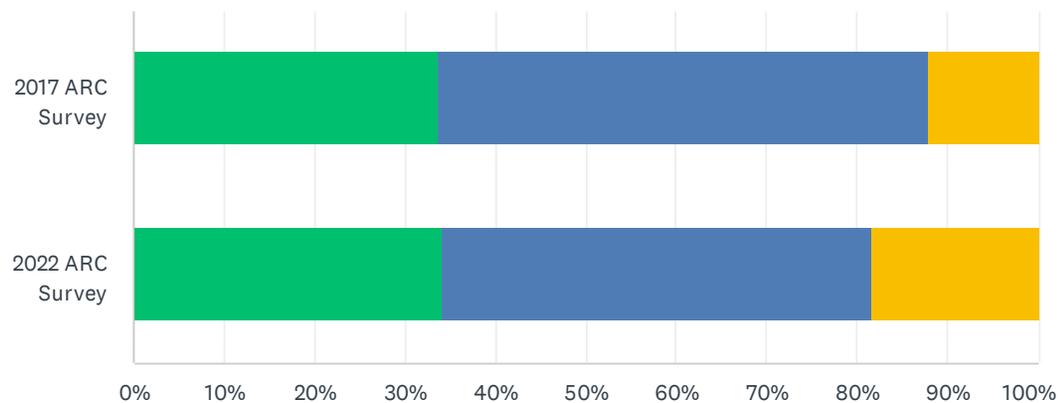
Good Fair Poor

For fish habitat



Good Fair Poor

For scenic beauty



Good Fair Poor

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info@allianceofrougecommunities.com or 734-272-0291

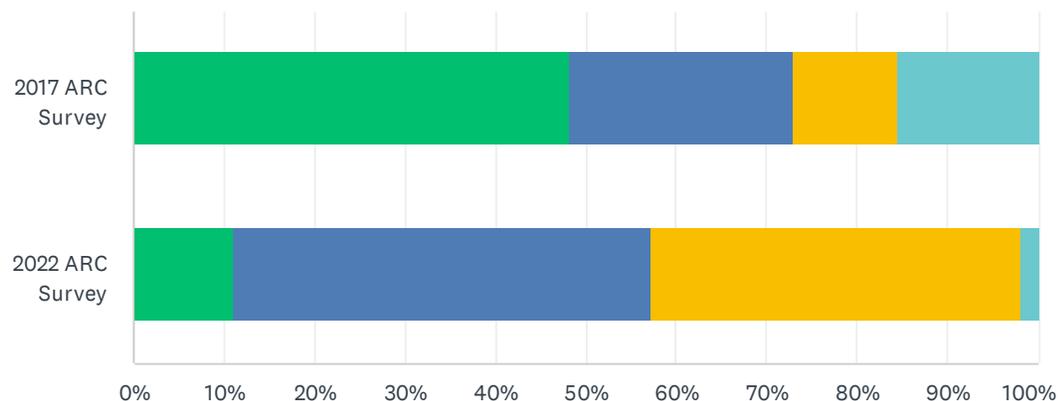
Overall						
	GOOD	FAIR	POOR	TOTAL	WEIGHTED AVERAGE	
2017 ARC Survey	22.14% 93	60.24% 253	17.62% 74	12.90% 420	2.95	
2022 ARC Survey	38.77% 1,086	47.91% 1,342	13.32% 373	86.05% 2,801	2.75	
For canoeing/kayaking/boating						
	GOOD	FAIR	POOR	TOTAL	WEIGHTED AVERAGE	
2017 ARC Survey	29.50% 123	50.12% 209	20.38% 85	12.81% 417	2.91	
2022 ARC Survey	35.86% 1,004	46.43% 1,300	17.71% 496	86.02% 2,800	2.82	
For eating locally caught fish						
	GOOD	FAIR	POOR	TOTAL	WEIGHTED AVERAGE	
2017 ARC Survey	4.30% 18	31.50% 132	64.20% 269	12.87% 419	3.60	
2022 ARC Survey	29.70% 830	42.50% 1,188	27.80% 777	85.87% 2,795	2.98	
For swimming						
	GOOD	FAIR	POOR	TOTAL	WEIGHTED AVERAGE	
2017 ARC Survey	4.53% 19	34.13% 143	61.34% 257	12.87% 419	3.57	
2022 ARC Survey	28.81% 803	43.31% 1,207	27.88% 777	85.62% 2,787	2.99	
For picnicking and family activities						
	GOOD	FAIR	POOR	TOTAL	WEIGHTED AVERAGE	
2017 ARC Survey	36.58% 154	51.07% 215	12.35% 52	12.93% 421	2.76	
2022 ARC Survey	33.37% 934	47.34% 1,325	19.29% 540	85.99% 2,799	2.86	

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For fish habitat					
	GOOD	FAIR	POOR	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	9.35% 39	54.92% 229	35.73% 149	12.81% 417	3.26
2022 ARC Survey	31.59% 884	45.07% 1,261	23.34% 653	85.96% 2,798	2.92
For scenic beauty					
	GOOD	FAIR	POOR	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	33.73% 142	54.16% 228	12.11% 51	12.93% 421	2.78
2022 ARC Survey	34.19% 959	47.49% 1,332	18.32% 514	86.18% 2,805	2.84

Q22 How much would you spend to improve the water quality in the Rouge River? (For example: through local taxes or fees)

Answered: 3,242 Skipped: 384

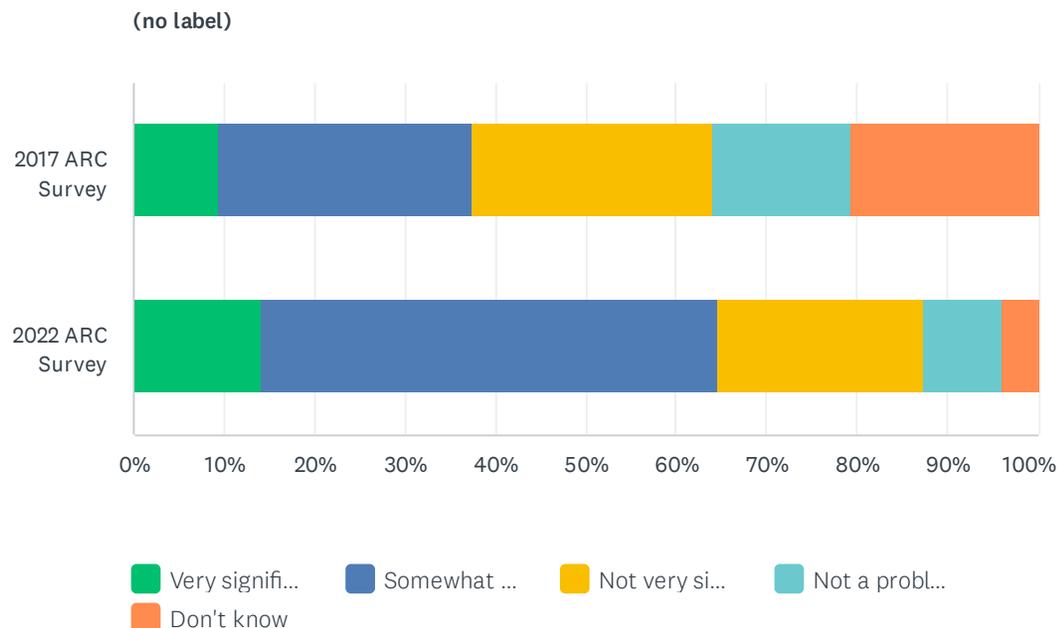


■ \$1-\$4 a mo...
 ■ \$5-\$10 a m...
 ■ \$10-\$20 a ...
 ■ None

	\$1-\$4 A MONTH	\$5-\$10 A MONTH	\$10-\$20 A MONTH	NONE	TOTAL
2017 ARC Survey	48.21% 202	24.82% 104	11.46% 48	15.51% 65	12.92% 419
2022 ARC Survey	11.02% 311	46.19% 1,304	41.02% 1,158	1.77% 50	87.08% 2,823
Total Respondents	513	1,408	1,206	115	3,242

Q23 How significant would you rate the damage related to high flows (flooding of property, stream bank erosion, etc.) in the Rouge River in the area where you live?

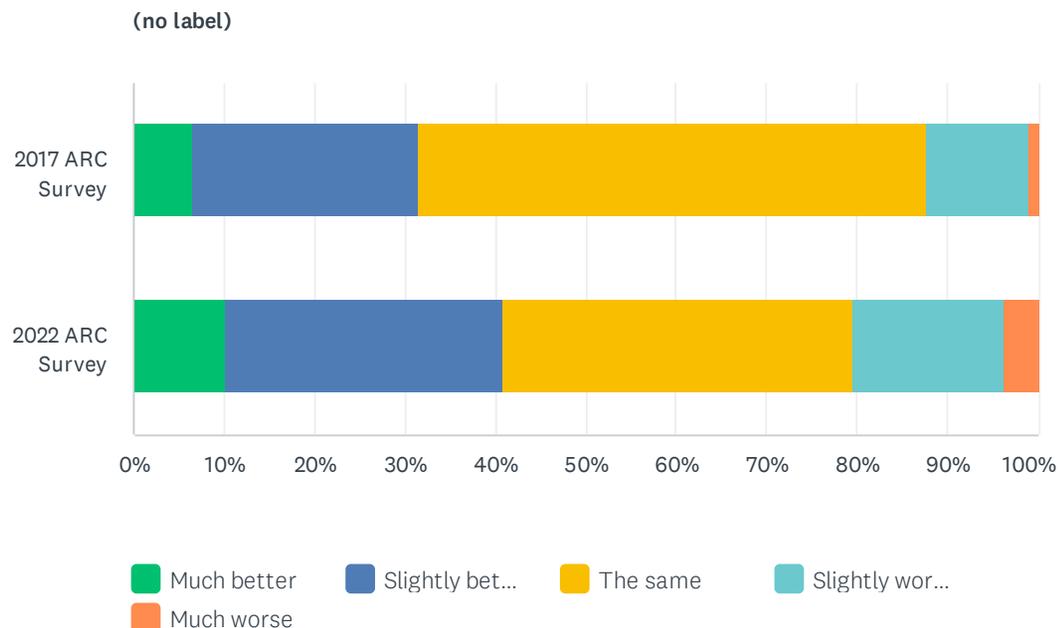
Answered: 3,235 Skipped: 391



(no label)							
	VERY SIGNIFICANT	SOMEWHAT SIGNIFICANT	NOT VERY SIGNIFICANT	NOT A PROBLEM	DON'T KNOW	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	9.35% 39	28.06% 117	26.62% 111	15.35% 64	20.62% 86	12.89% 417	3.10
2022 ARC Survey	14.09% 397	50.50% 1,423	22.64% 638	8.80% 248	3.97% 112	87.11% 2,818	2.38

Q24 In your opinion, over the past five (5) years, the flooding of the Rouge River and the related problems are . . .

Answered: 3,227 Skipped: 399

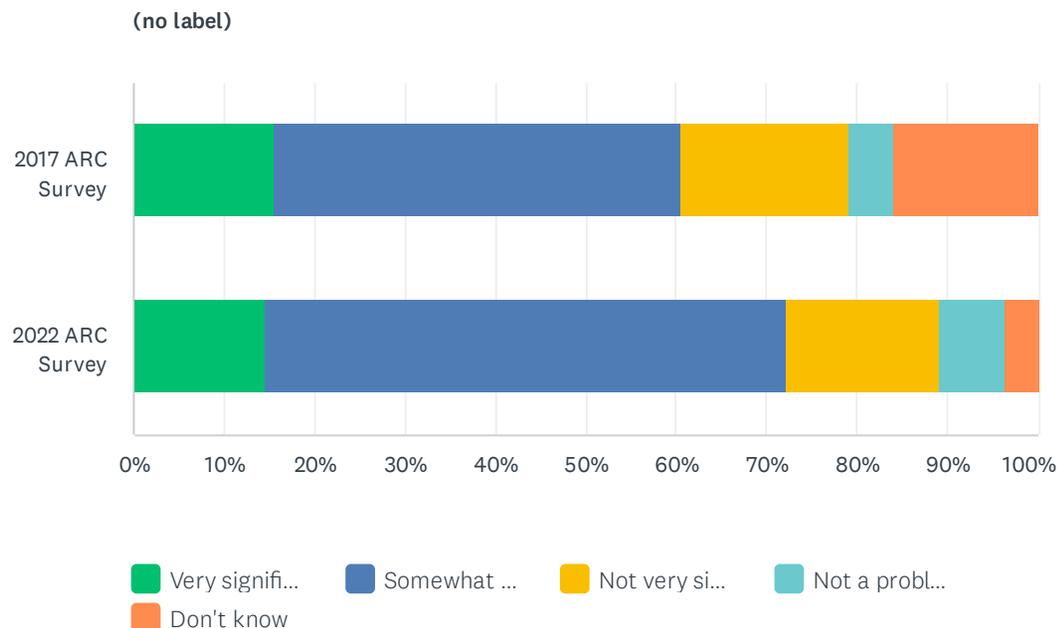


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	MUCH BETTER	SLIGHTLY BETTER	THE SAME	SLIGHTLY WORSE	MUCH WORSE	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	6.49% 27	25.00% 104	56.25% 234	11.30% 47	0.96% 4	12.89% 416	2.75
2022 ARC Survey	10.32% 290	30.59% 860	38.67% 1,087	16.65% 468	3.77% 106	87.11% 2,811	2.73

Q25 How significant would you rate the problems caused by stormwater runoff (rain events & snow/ice melt) in the Rouge River?

Answered: 3,222 Skipped: 404

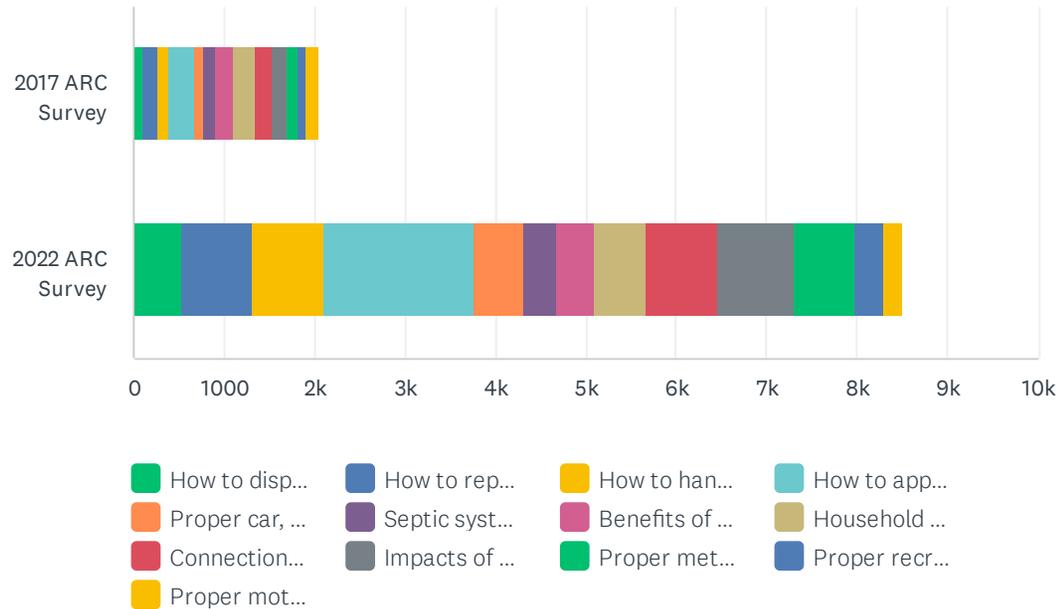


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	VERY SIGNIFICANT	SOMEWHAT SIGNIFICANT	NOT VERY SIGNIFICANT	NOT A PROBLEM	DON'T KNOW	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	15.46% 64	45.17% 187	18.60% 77	4.83% 20	15.94% 66	12.85% 414	2.61
2022 ARC Survey	14.42% 405	57.83% 1,624	16.81% 472	7.23% 203	3.70% 104	87.15% 2,808	2.28

Q26 What do you consider the most important things to educate the public on? (Choose up to 5)

Answered: 3,210 Skipped: 416

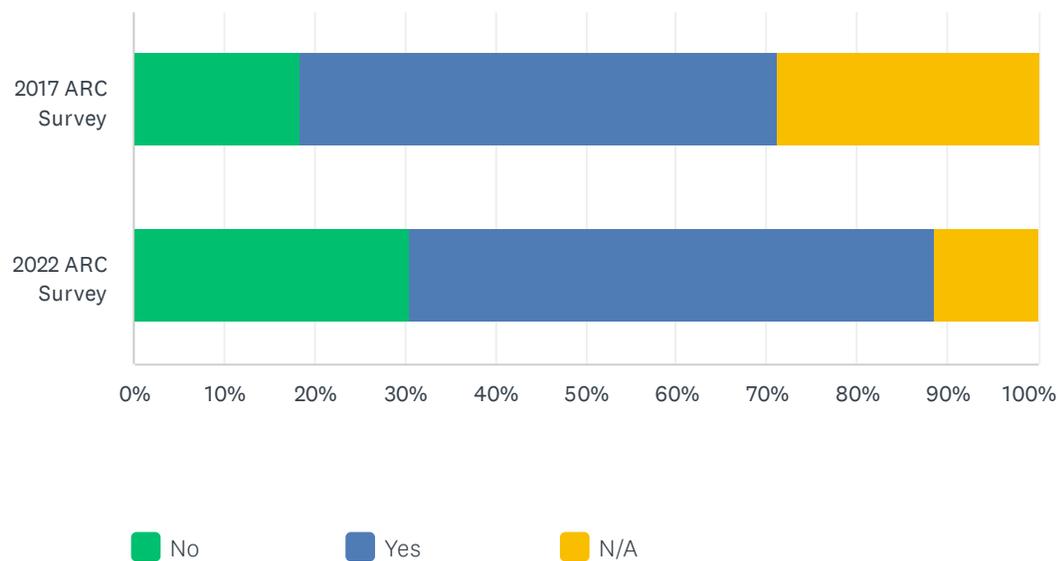


	HOW TO DISPOSE OF GRASS CLIPPINGS AND LEAF LITTER	HOW TO REPORT ILLEGAL DUMPING	HOW TO HANDLE PET WASTE	HOW TO APPLY AND DISPOSE OF PESTICIDES/HERBICIDES/FERTILIZERS	PROPER CAR, PAVEMENT AND POWER WASHING PRACTICES	SEPTIC SYSTEM MAINTENANCE	BENEFITS OF GREEN INFRASTRUCTURE/LOW-IMPACT DEVELOPMENT (LIKE RAIN GARDENS/RAIN BARRELS OR USING NATIVE PLANTS)
2017 ARC Survey	24.39% 100	40.00% 164	31.46% 129	69.27% 284	24.88% 102	28.05% 115	49.27% 202
2022 ARC Survey	18.93% 530	27.71% 776	28.75% 805	58.64% 1,642	20.43% 572	12.64% 354	14.89% 417
Total Respondents	630	940	934	1,926	674	469	619

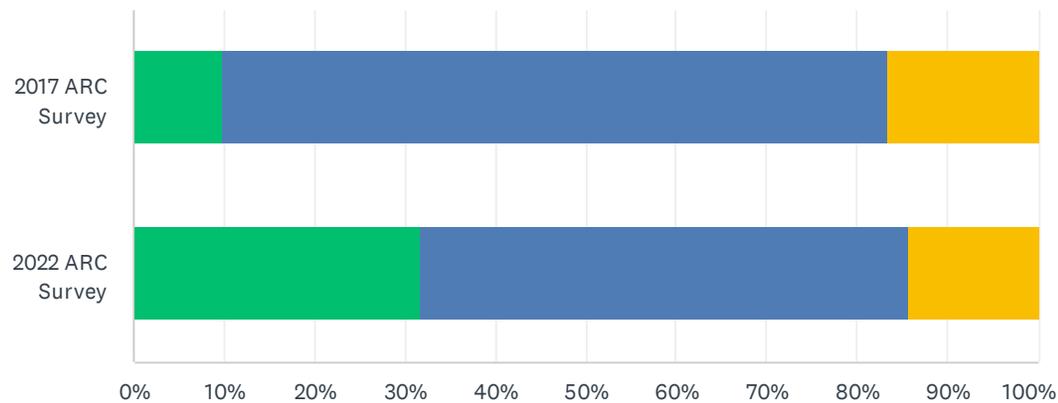
Q27 Have you done any of the following? (Choose all that apply)

Answered: 3,196 Skipped: 430

Changed the type, amounts or application of lawn and garden fertilizers, pesticides o...

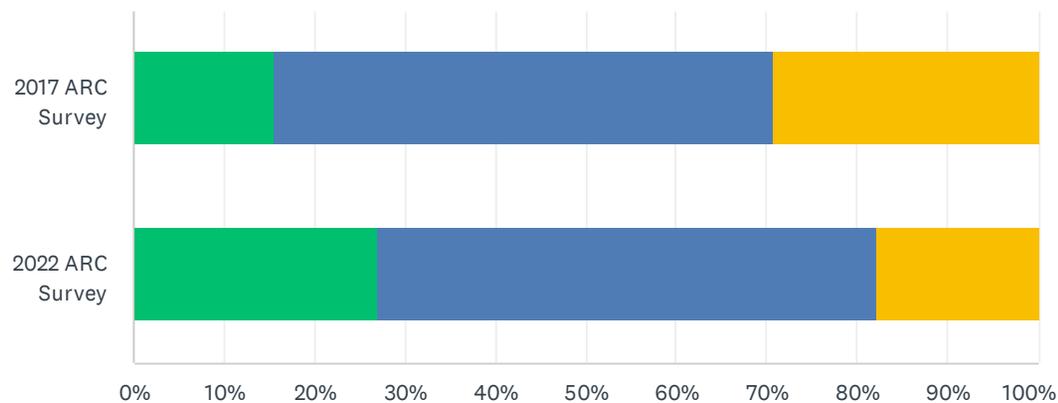


Take used motor oil, antifreeze, batteries or other household hazardous materials to ...



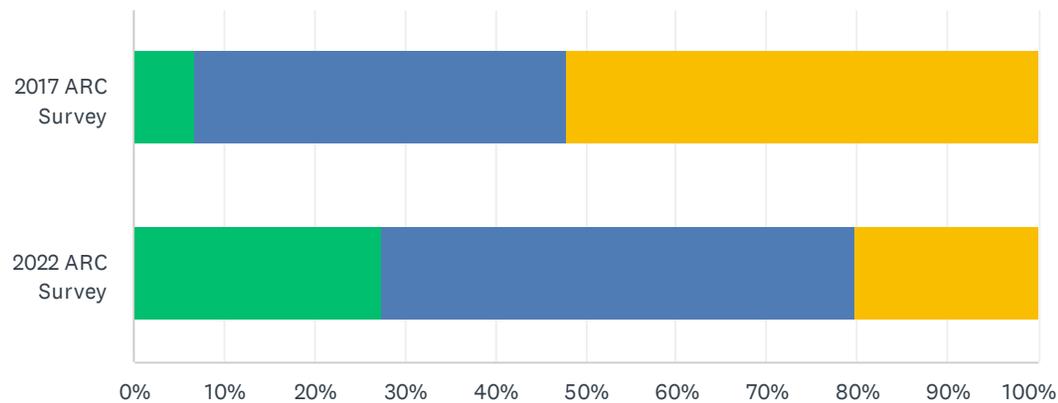
No Yes N/A

Reduced the use of detergents or other chemicals for home car washings



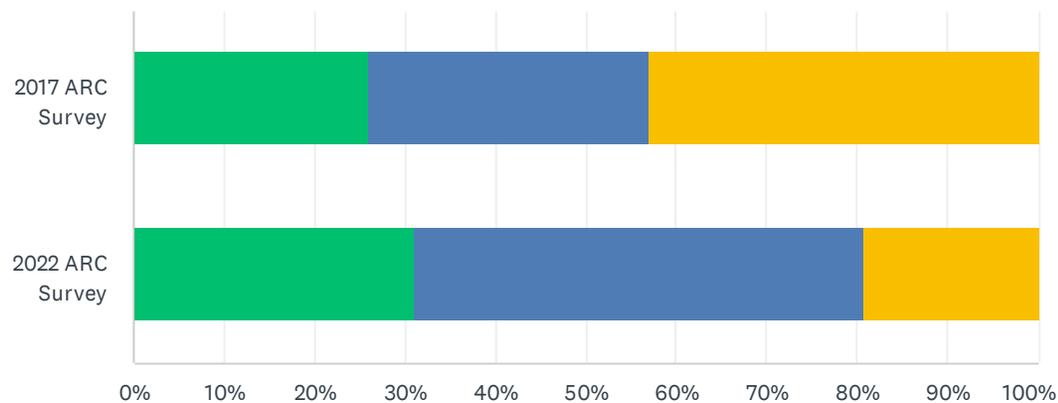
No Yes N/A

Stopped disposing of any waste material into catch basins and storm drains



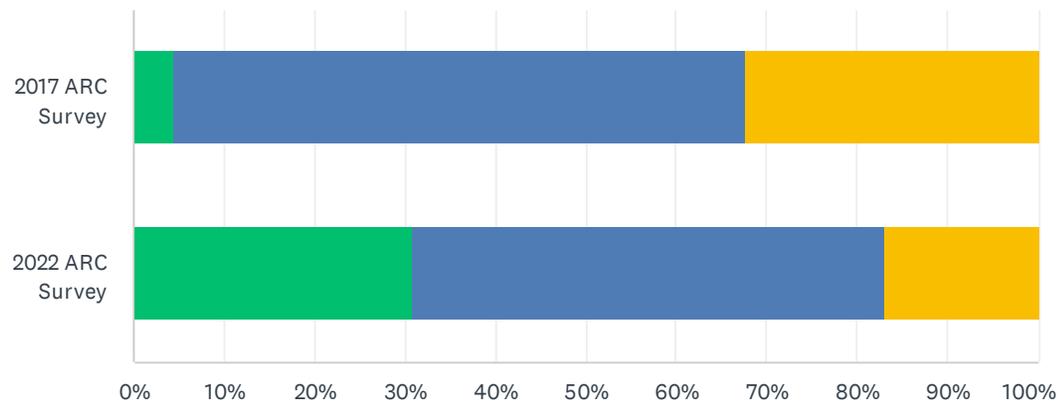
■ No ■ Yes ■ N/A

Disconnected downspouts from storm drains to allow roof runoff to seep into the groun...



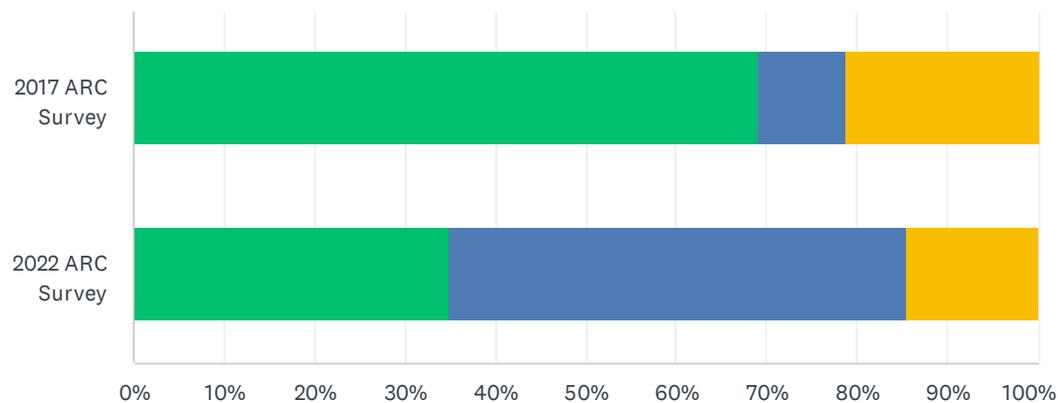
■ No ■ Yes ■ N/A

Pick up pet waste and dispose of properly



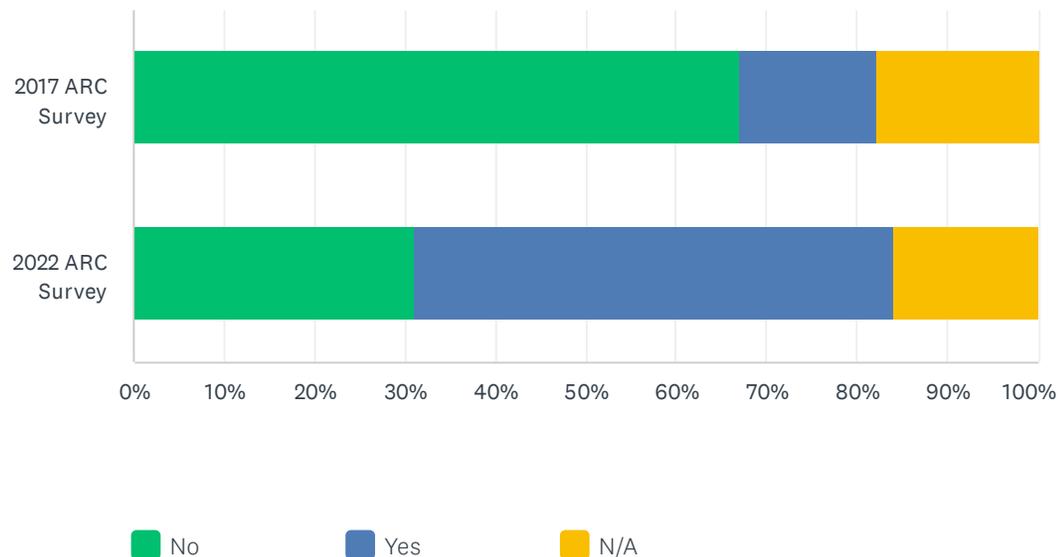
No **Yes** **N/A**

Installed a rain garden



No **Yes** **N/A**

Installed a rain barrel



Changed the type, amounts or application of lawn and garden fertilizers, pesticides or other chemicals					
	NO	YES	N/A	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	18.47% 75	52.71% 214	28.82% 117	12.70% 406	2.48
2022 ARC Survey	30.45% 841	58.11% 1,605	11.44% 316	86.42% 2,762	2.31
Take used motor oil, antifreeze, batteries or other household hazardous materials to recycling facilities					
	NO	YES	N/A	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	9.90% 40	73.51% 297	16.58% 67	12.64% 404	2.76
2022 ARC Survey	31.76% 873	53.95% 1,483	14.30% 393	86.01% 2,749	2.26

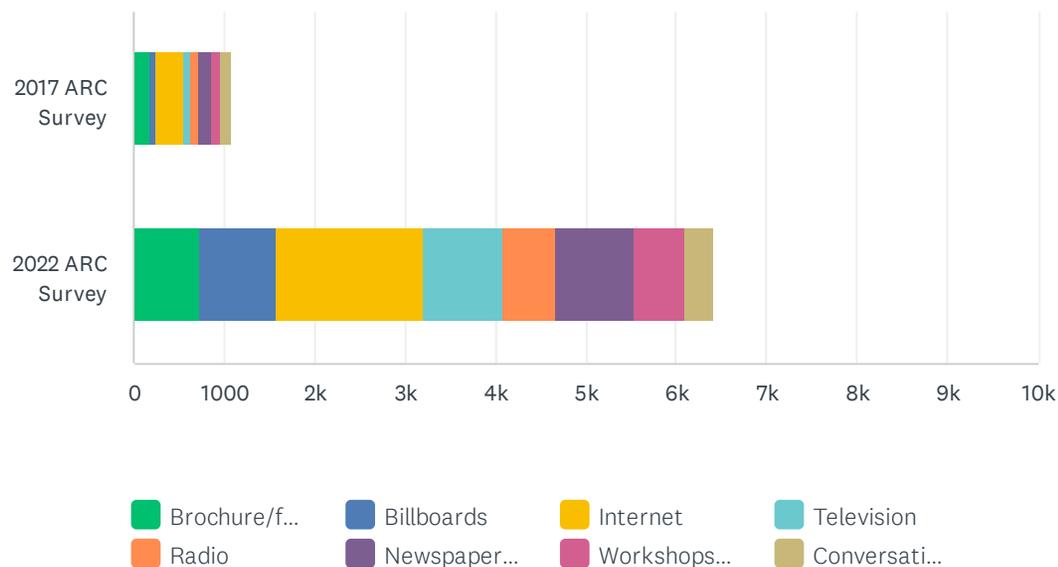
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info@allianceofrougecommunities.com or 734-272-0291

Reduced the use of detergents or other chemicals for home car washings						
	NO	YES	N/A	TOTAL	WEIGHTED AVERAGE	
2017 ARC Survey	15.63% 63	55.09% 222	29.28% 118	12.61% 403		2.56
2022 ARC Survey	27.00% 744	55.19% 1,521	17.82% 491	86.23% 2,756		2.34
Stopped disposing of any waste material into catch basins and storm drains						
	NO	YES	N/A	TOTAL	WEIGHTED AVERAGE	
2017 ARC Survey	6.73% 27	41.15% 165	52.12% 209	12.55% 401		2.72
2022 ARC Survey	27.46% 753	52.33% 1,435	20.20% 554	85.79% 2,742		2.31
Disconnected downspouts from storm drains to allow roof runoff to seep into the ground						
	NO	YES	N/A	TOTAL	WEIGHTED AVERAGE	
2017 ARC Survey	25.88% 103	31.16% 124	42.96% 171	12.45% 398		2.09
2022 ARC Survey	31.03% 855	49.84% 1,373	19.13% 527	86.20% 2,755		2.23
Pick up pet waste and dispose of properly						
	NO	YES	N/A	TOTAL	WEIGHTED AVERAGE	
2017 ARC Survey	4.50% 18	63.25% 253	32.25% 129	12.52% 400		2.87
2022 ARC Survey	30.93% 851	52.09% 1,433	16.98% 467	86.08% 2,751		2.25
Installed a rain garden						
	NO	YES	N/A	TOTAL	WEIGHTED AVERAGE	
2017 ARC Survey	69.19% 274	9.60% 38	21.21% 84	12.39% 396		1.24
2022 ARC Survey	35.05% 962	50.49% 1,386	14.46% 397	85.89% 2,745		2.18

Installed a rain barrel					
	NO	YES	N/A	TOTAL	WEIGHTED AVERAGE
2017 ARC Survey	67.00% 266	15.11% 60	17.88% 71	12.42% 397	1.37
2022 ARC Survey	31.07% 852	53.03% 1,454	15.90% 436	85.79% 2,742	2.26

Q28 Where are you likely to seek information about water quality? (Choose all that apply)

Answered: 3,190 Skipped: 436



	BROCHURE/FACT SHEET	BILLBOARDS	INTERNET	TELEVISION	RADIO	NEWSPAPERS/MAGAZINES/NEWSLETTERS	WORKSHOPS/DEMONSTR
2017 ARC Survey	44.94% 182	14.07% 57	77.04% 312	20.99% 85	19.01% 77	34.07% 138	
2022 ARC Survey	26.32% 733	30.41% 847	58.64% 1,633	31.71% 883	20.22% 563	31.63% 881	
Total Respondents	915	904	1,945	968	640	1,019	654

Q29 To be eligible for the \$100 visa gift card drawing that will be distributed in September, please provide your contact information. Your email will only be used to notify you if you are the winner.
 Thank you.

Answered: 2,706 Skipped: 920

	NAME	COMPANY	ADDRESS	ADDRESS 2	CITY/TOWN	STATE/PROVINCE	ZIP/POSTAL CODE	COUNTRY	EMAIL ADDRESS	PHONE NUMBER	TOTAL
2017 ARC Survey	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0
2022 ARC Survey	97.93% 2,650	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	99.89% 2,703	0.00% 0	197.82% 5,353
Total Respondents	2,650	0	0	0	0	0	0	0	2,703	0	2,706

Q30 Thank you for taking the Alliance of Rouge Communities' water quality survey. Please visit our website at www.allianceofrougecommunities.com or follow us on Facebook at [@allianceofrougecommunities](https://www.facebook.com/allianceofrougecommunities) .

Answered: 362 Skipped: 3,264

	NAME	COMPANY	ADDRESS	ADDRESS 2	CITY/TOWN	STATE/PROVINCE	ZIP/POSTAL CODE	COUNTRY	EMAIL ADDRESS	PHONE NUMBER	TOTAL
2017 ARC Survey	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 362	0.00% 0	100.00% 362
2022 ARC Survey	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0
Total Respondents	0	0	0	0	0	0	0	0	362	0	362