



Working together, restoring the river

RESULTS OF THE 2017 WATER QUALITY CHANGES IN THE ROUGE RIVER SURVEY

WATER QUALITY CHANGES IN THE ROUGE RIVER 2017 SURVEY
www.allianceofrougecommunities.com
contact us at: info@allianceofrougecommunities.com
or 734-272-0291

* Do you live in a watershed?

Yes
 No
 Don't know

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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

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

Very familiar Somewhat familiar Not very familiar

Prev Next

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August 2018

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RESULTS OF THE 2017 WATER QUALITY CHANGES IN THE ROUGE RIVER SURVEY

INTRODUCTION

The 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 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 Alliance of Rouge Communities (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 August 1, 2017 until April 30, 2018 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 to surveys done in 1993 by the Rouge River National Wet Weather Demonstration Project and in 1999 by the University of Michigan.

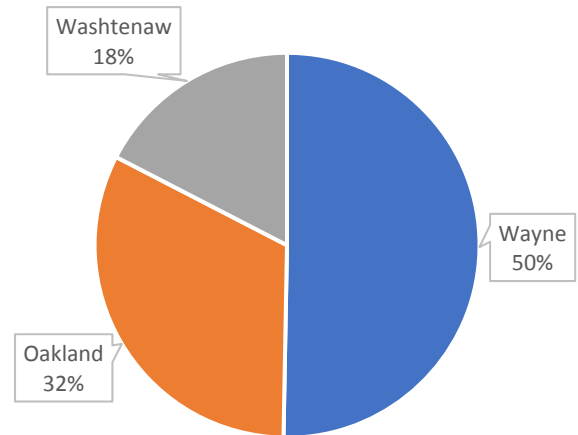
METHODOLOGY

In August 2017, ARC Staff developed an online survey using Survey Monkey which received 514 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 and 1999, 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 7 minutes. The ARC promoted the survey on the ARC website and Facebook page and on almost 2,000 workshop mailings. The ARC also conducted two stewardship workshops in 2017 which focused on public awareness of the Rouge River and water quality issues and encouraged participants to take the ARC's survey. The ARC also provided a phone number for people to call if they did not have internet access. To encourage the public to participate in the survey, donated a \$100 Visa gift card (donated by Environmental Consulting & Technology, Inc. – no public funding) which the ARC awarded to one survey participant through a random drawing at the end of April 2018. The gift card was awarded to a resident of the City of Westland in May of 2018.

The comparisons presented in this report are based on the 514 responses with 50% of responses from Wayne County, 32% from Oakland County, 17% from Washtenaw County (see Figure 1) and 1% outside the Rouge River Watershed with almost 50% of them living at their current residence for 10 years or more. Appendix A presents the survey questions and the responses, by percentage of total responses to each.

Figure 1: Survey Participation by County

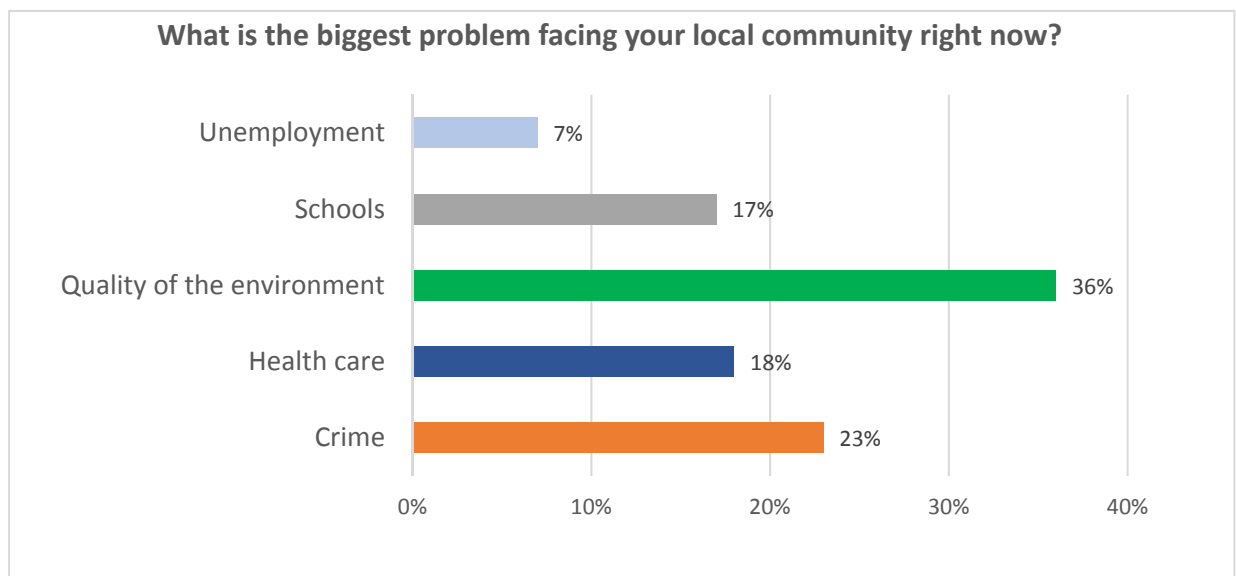


FINDINGS

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 quality of the environment was the biggest problem expressed most often, followed by crime and health care. Figure 2 presents the overall results. Quality of the environment was the issue of concern for both Wayne and Oakland County and for Washtenaw County schools was the biggest issue of concern with quality of the environment second.

Figure 2: Overall Issues of Concern



The River: Knowledge and Use

Knowledge

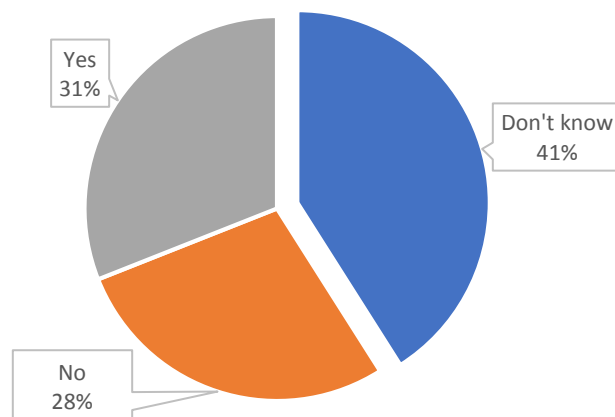
Several questions were asked on the public's general knowledge of watershed concepts.

Overall, when asked *do you live in a watershed?* 41% of respondents did not know, 31% said yes and 28% said no as shown in Figure 3. 50% of the respondents in Washtenaw County and 45% in Wayne

County did not know if they lived in a watershed. 49% of respondents in Oakland County said yes to living in a watershed, 22% said no and 29% said they didn't know.

When asked **where does the rain water running off your property drain to?** 45% of the overall respondents said they didn't know where the rain water drained to, 38% said it drained to a river, stream or lake and 18% said a wastewater treatment plant. In Washtenaw County 46% and 53% of Wayne County respondents did not know where their rain water drained to. In Oakland County 58% said that their rain water drained to a river, stream or lake, 12% said it drained to a wastewater treatment plant and 31% didn't know where the rain water drained.

Figure 3: Do You Live in a Watershed?



The survey asked **how familiar are you with the Rouge River Watershed and its network of rivers and streams running throughout southeast Michigan.** Respondents were divided equally with 44% stating they were somewhat familiar and 44% reporting that they were not very familiar with the Rouge River watershed and its tributaries. 12% said they were 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 (85%) reported **using or visiting a park or other place with a river or stream running through it.** Walking/running/jogging and picnicking are the number one and two uses respectively, with bird or wildlife watching a close third. Other activities that were not answer options but were written in where dog parks and community activities.

Flooding, Water Quality and Pollution Sources

Flooding

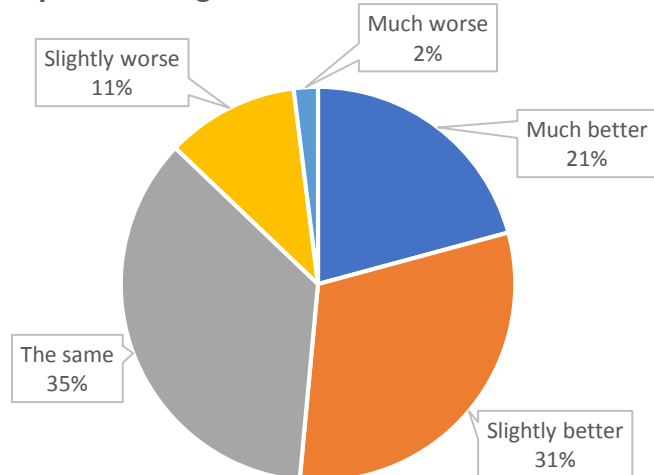
When asked **to rate the significance of the damage related to high flows including flooding of property or stream bank erosion in the Rouge River in the area where they live** most respondents were split equally between it being somewhat significant (28%) and not very significant (27%). The remainder of the respondents felt it was very significant (9%), not a problem (16%) and 21% did not know if the damage was significant where they live.

The majority of respondents (57%) felt the flooding of the Rouge River and the related problems are the same as five years ago.

Water Quality

The majority (52%) of respondents believe that **over the past fifteen (15) years the water quality of the Rouge River is** either **much better** (21%) or **slightly better** (31%) as seen in Figure 4. 35% of the respondents felt the water quality is **the same** and 11% of the respondents felt the water quality in the Rouge River was **slightly worse** and 2% felt it was **much worse**.

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



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. Reduced beauty of lakes or streams
2. Contaminated fish
3. Polluted swimming areas

These top three were followed by:

4. Reduced quality/availability of water recreation activities
5. Loss of desirable fish species
6. Lower property values

Respondents were asked **how they rate the water quality of the Rouge River** overall and for various activities. 60% of respondents felt that the overall water quality of the Rouge River was fair with 22% rating it as good and 17% rating it as poor. Table 1 shows the results for the other activities.

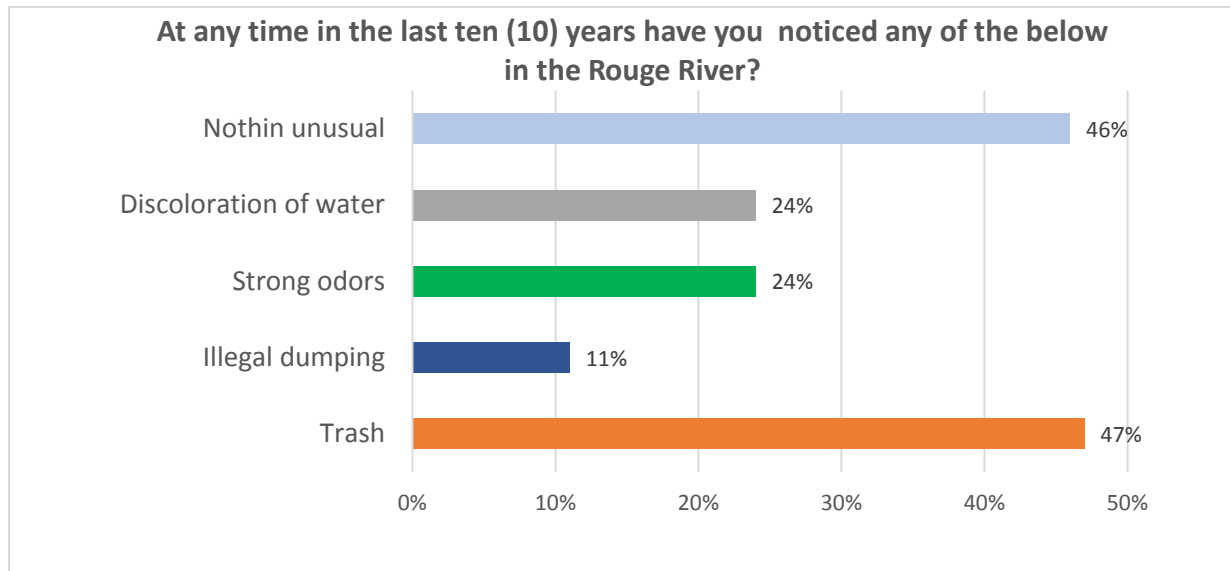
Table 1: How Would You Rate the Water Quality of the Rouge River?

WATER QUALITY FOR	GOOD	FAIR	POOR
Overall	22%	60%	17%
Canoeing/kayaking/boating	30%	50%	20%
Eating locally caught fish	4%	32%	64%
Swimming	4%	35%	61%
Picnicking and family activities	36%	51%	12%
Fish habitat	9%	56%	35%
Scenic beauty	33%	55%	12%

Pollution Sources

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

The **problems caused by stormwater runoff (rain events & snow/ice melt) in the Rouge River** were rated by the respondents as somewhat significant (46% of respondents), followed by not very significant (19% of respondents). In addition, 14% considered stormwater runoff very significant and 16% 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**. Most respondents reported that they take used motor oil, antifreeze, batteries or other household hazardous materials to recycling facilities and that they pick up pet waste and dispose of it properly. More than half said they have reduced the use of detergents or other chemicals for home car washings and have changed the type, amounts or application of lawn and garden fertilizers, pesticides or other chemicals. The majority of respondents reported that they have not installed a rain garden or rain barrel.

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. Rouge River, ours to protect
3. Drains to river (painted message on storm drains)

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. Household hazardous waste disposal
3. Benefits of green infrastructure/low-impact development (like rain gardens/rain barrels or using native plants)
4. Connection of the storm sewer system to local waterbodies
5. Impacts of businesses and industries on stormwater runoff

The majority of Wayne County responders ranked household hazardous waste disposal the most important thing to educate the public on while both Oakland and Washtenaw County responders ranked how to apply and dispose of pesticides/herbicides/fertilizers the most important thing to educate the public on.

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

1. Internet
2. Brochure/fact sheet
3. Newspapers/magazines/newsletters

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**. 49% of respondents said they would be willing to spend \$1-\$4 a month, 25% were willing to pay \$5-\$10 a month, 11% said \$10-\$20 a month and 15% said they did not want to pay.

COMPARISONS WITH FINDINGS FROM OTHER SURVEYS

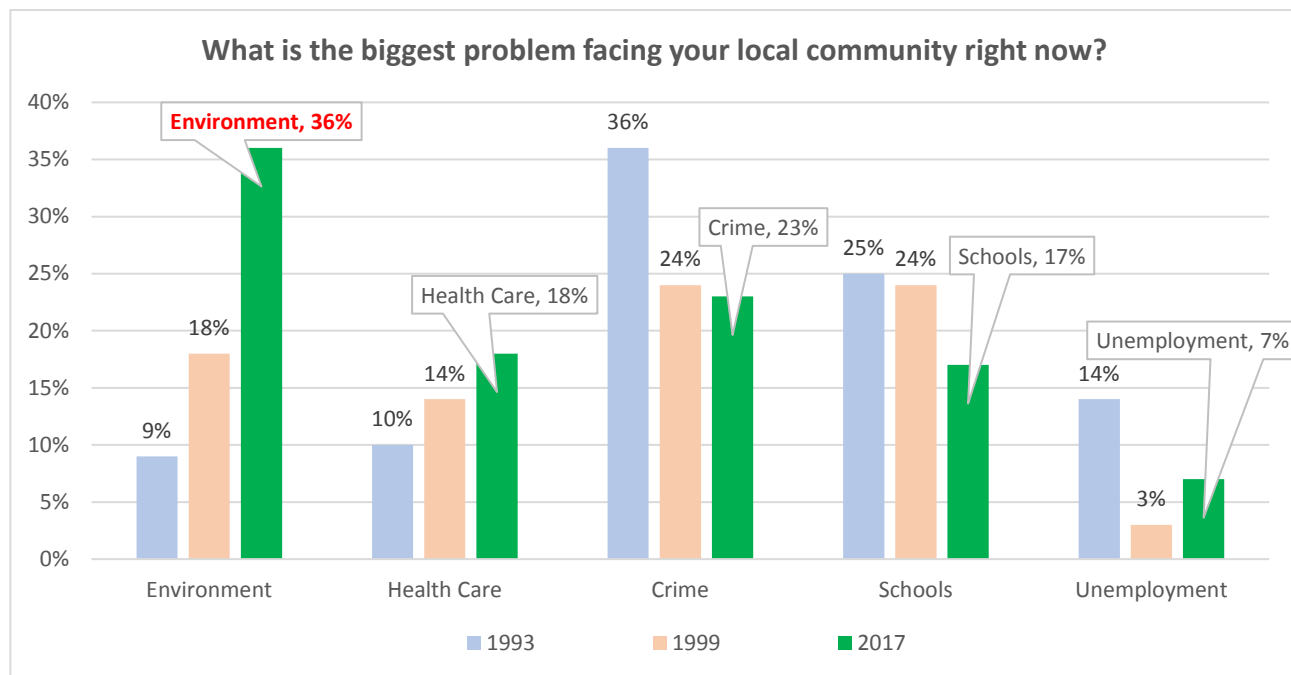
Issues of Concern

The ARC survey was 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.

Since the 1993 and 1999 surveys, the issues of concern have dramatically changed. In 1993 and 1999 the issue most concerning the public was crime while 36% of those surveyed in 2017 responded that the environment was the biggest problem facing their community as shown in Figure 6. This response is

double that of the response in 1999 and triple that of 1993 which shows that Michigan residents are becoming more aware of the impacts we are having on the environment.

Figure 6: Issues of Concern



The River: Knowledge and Use

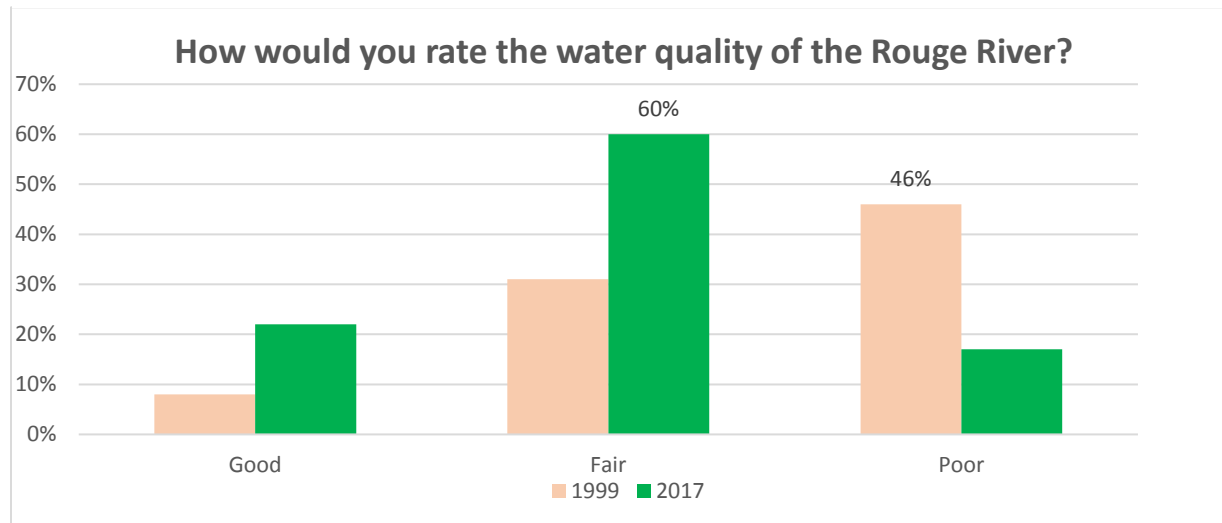
Knowledge of the Rouge River watershed and its network of rivers and streams did not change much from 1993 to 1999 but use of nearby parks with rivers or streams running through them had risen. This suggested that despite park use being up, not all residents associated the streams and rivers running through them with the Rouge River Watershed. Like the 1999 survey, the 2017 survey showed that 12% of the respondents reported that they are very familiar with the Rouge River Watershed. In addition, the results of the 2017 survey show a similar pattern with 85%, an increase from 69% in 1999, of respondents saying they had visited a park with rivers or streams running through them. Similar to 1993 and 1999, 2017 results showed walking/running/jogging and picnicking ranked as the top two. Note that 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.

In 1999 18% of respondents felt the damage related to high flows was somewhat or very significant. In the 2017 survey 37% of respondents felt the damage related to high flows was somewhat or very significant. 16% of respondents in 1999 felt that over the past five years the flooding of the Rouge River and the related problems are slightly or much better. The 2017 survey showed that 32% 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.

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



Similar to the 1999 survey, the majority of 2017 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). Even though the majority (36%) felt the water quality has stayed the same, 21% felt it was much better which may support the overall water quality rating improvement from poor (1999) to fair (2017) shown in Figure 6.

Table 2 shows the survey results for the top three major pollution sources from the 1993, 1999 and 2017 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 move up as a concern.

Table 2: How Would You Rate the Water Quality of the Rouge River?

1993	1999	2017
1. Business and industry	1. Business and industry 2. Combined sewer overflows 3. Stormwater	1. Stormwater 2. Illegal dumping 3. Bird droppings

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

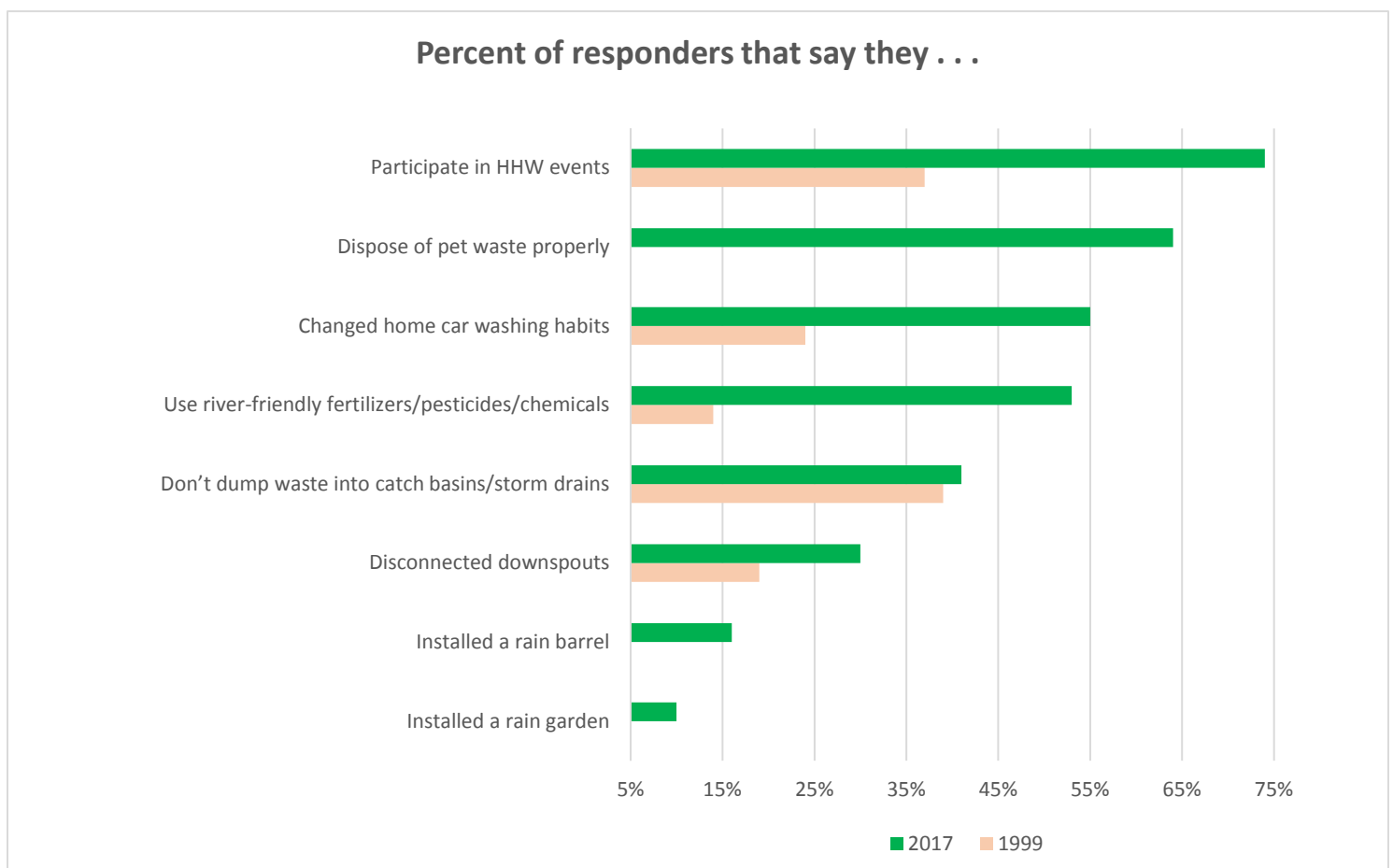
Public Involvement

When comparing the 1999 and 2017 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)”.

In 1999 the top three ways survey respondents were likely to seek information about water quality were television, radio and newspapers/magazines/newsletters respectfully. In the 2017 survey respondents stated that the top three ways were internet, brochure/fact sheet and newspapers/magazines/newsletters respectively. Note that in the 1999 survey internet was not an option.

Figure 8 shows an increase from 1999 to 2017 in the activities that responders reported doing at home that improve water quality and benefit the environment.

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



CONCLUSIONS

The overall results of the 2017 survey suggest that the ARC's focus should be on educating 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 2017 public opinion survey and comparisons with the 1993 and 1999 surveys lead to several additional conclusions detailed below.

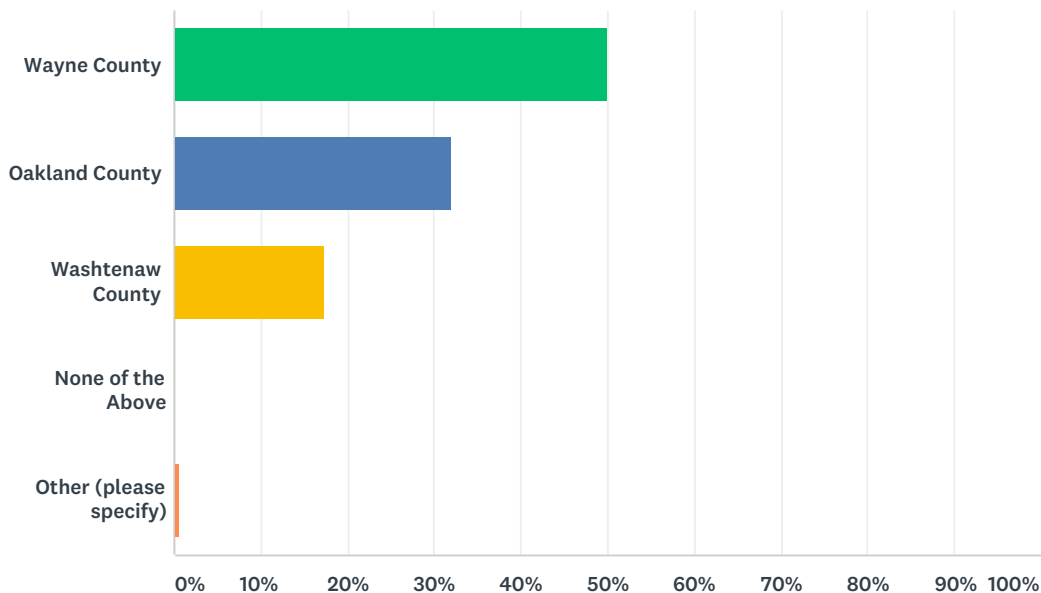
- The number of people that believe that the river water quality is good or very good has increased.
- The number of people that are taking active measures to improve water quality has increased dramatically. More people are focusing on what they can do at home to protect water quality including installing rain gardens and rain barrels which were not items surveyed in the 1999 survey.
- Even though the environment was the biggest problem facing their local community, the majority of respondents either said they did not live in a watershed or said they didn't know.
- Similar to the 1993 and 1999 surveys while the use of public parklands adjacent to the Rouge River is high, the 2017 survey results indicate that a substantial number of park users do not associate the park's rivers/streams as being part of a watershed.
- 2017 respondents ranked stormwater as the #1 major source of water quality pollution and in 1999 it was ranked #3, but the word "stormwater" was not used in the question. 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". 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. In addition, when respondents were asked "Where does the rain water running off your property drain to?" (the word stormwater not used again) the majority of respondents didn't know. Educating the public on what the different words mean should be an important focus moving forward.
- The survey supports that citizens understand more now 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 1999 and 2017 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 2017 survey are consistent with the ARC's current public education campaigns.
- Continued internet and social media efforts are important as 77% of the people surveyed said they use the internet when seeking information about water quality. To support this, all advertising of the 2017 survey included a phone number for people to call if they preferred to take the survey over the phone. The ARC did not receive any phone calls.

APPENDIX A

2017 DETAILED SURVEY QUESTIONS AND RESULTS WATER QUALITY CHANGES IN THE ROUGE RIVER

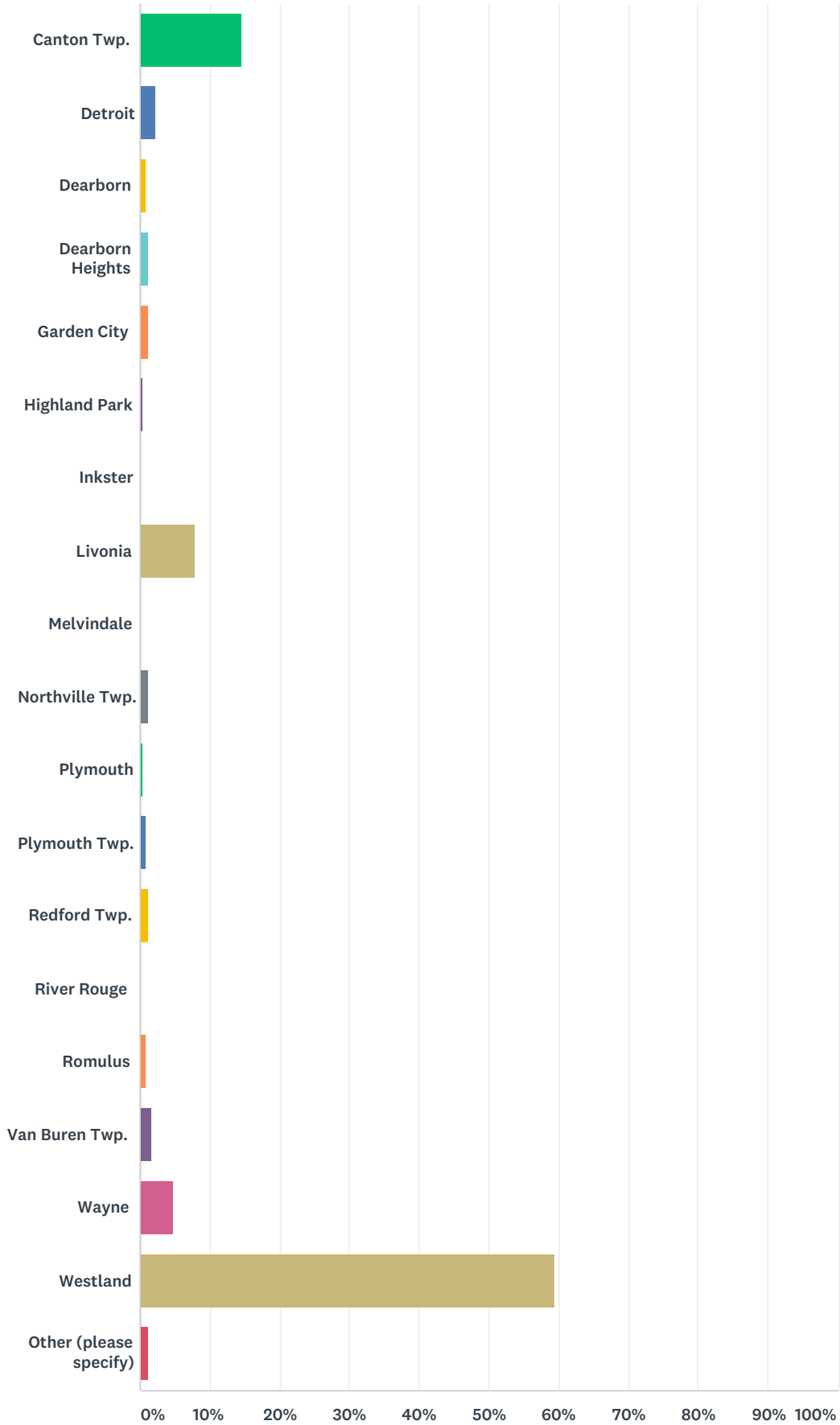
Q1 Where do you live?

Answered: 514 Skipped: 0



ANSWER CHOICES	RESPONSES	
Wayne County	50.00%	257
Oakland County	32.10%	165
Washtenaw County	17.32%	89
None of the Above	0.00%	0
Other (please specify)	0.58%	3
TOTAL		514

#	OTHER (PLEASE SPECIFY)	DATE
1	Livingston	8/6/2017 9:46 AM
2	Macomb County	8/4/2017 10:50 AM
3	Jackson	8/3/2017 11:51 AM



ANSWER CHOICES

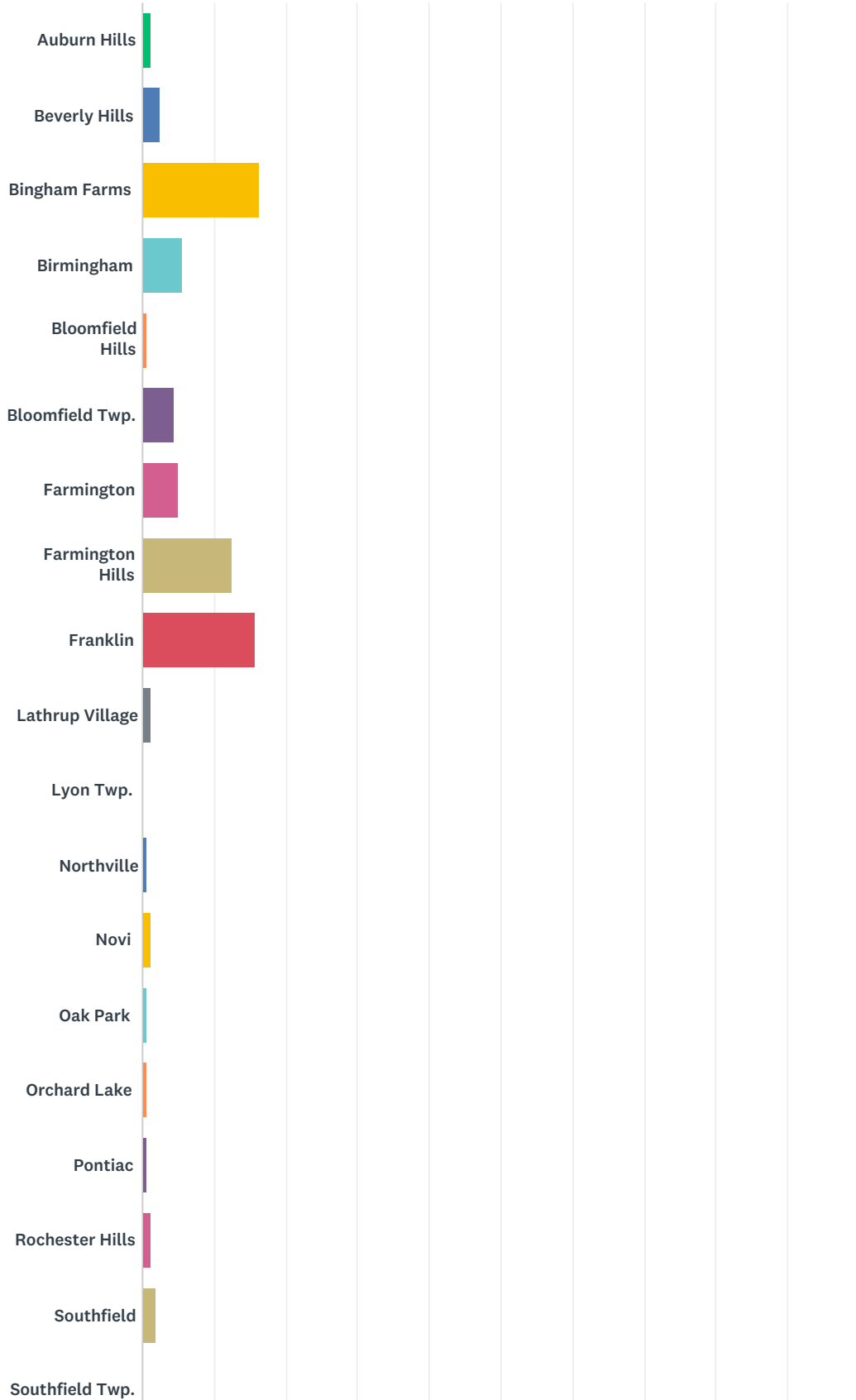
RESPONSES

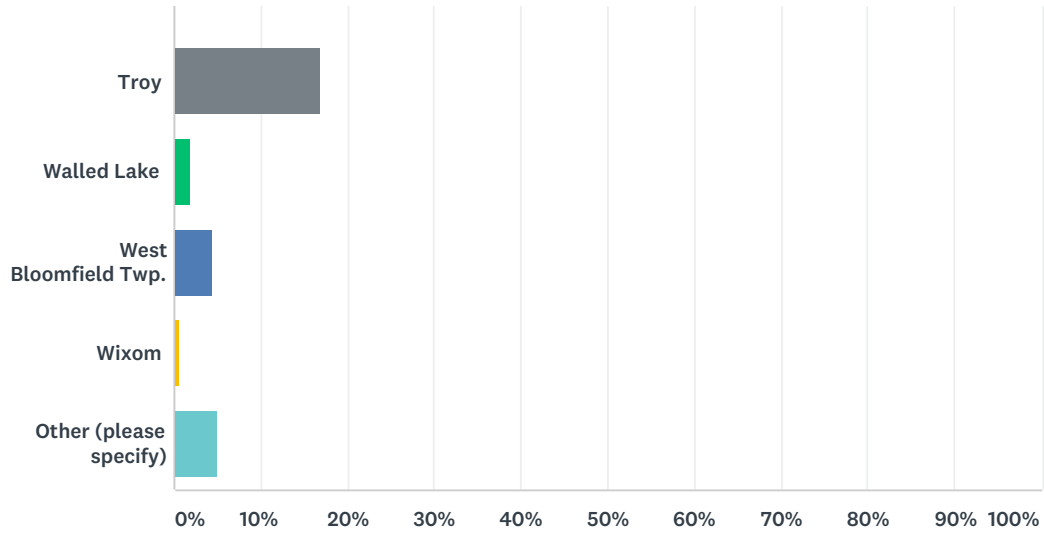
Canton Twp.	14.74%	37
Detroit	2.39%	6
Dearborn	0.80%	2
Dearborn Heights	1.20%	3
Garden City	1.20%	3
Highland Park	0.40%	1
Inkster	0.00%	0
Livonia	7.97%	20
Melvindale	0.00%	0
Northville Twp.	1.20%	3
Plymouth	0.40%	1
Plymouth Twp.	0.80%	2
Redford Twp.	1.20%	3
River Rouge	0.00%	0
Romulus	0.80%	2
Van Buren Twp.	1.59%	4
Wayne	4.78%	12
Westland	59.36%	149
Other (please specify)	1.20%	3
TOTAL		251

#	OTHER (PLEASE SPECIFY)	DATE
1	Belleville	12/16/2017 10:17 AM
2	Belleville	8/4/2017 4:54 PM
3	Taylor	8/1/2017 2:15 PM

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

Answered: 159 Skipped: 355





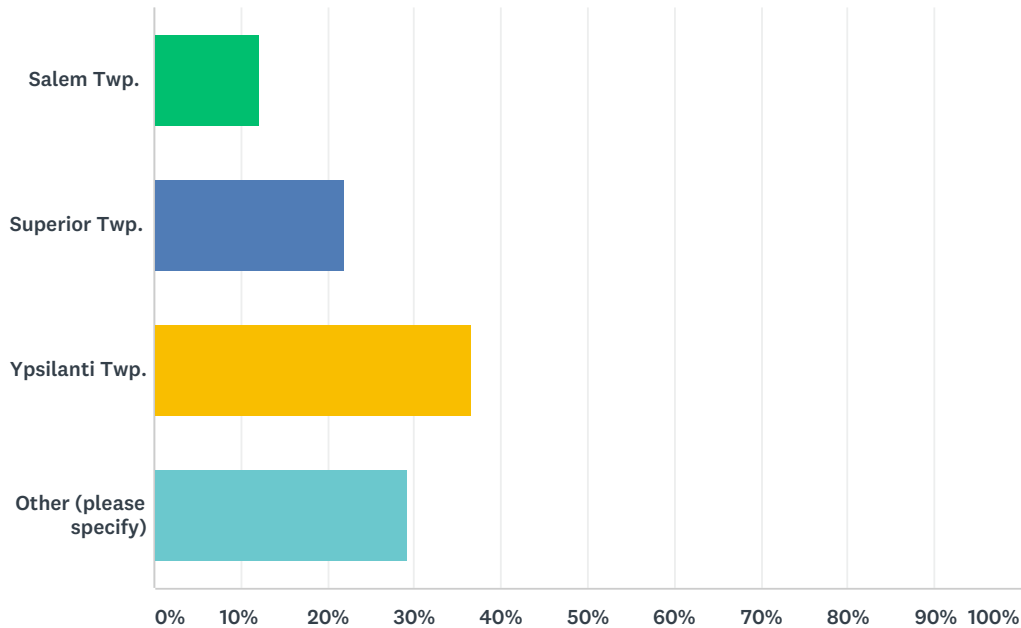
ANSWER CHOICES	RESPONSES	
Auburn Hills	1.26%	2
Beverly Hills	2.52%	4
Bingham Farms	16.35%	26
Birmingham	5.66%	9
Bloomfield Hills	0.63%	1
Bloomfield Twp.	4.40%	7
Farmington	5.03%	8
Farmington Hills	12.58%	20
Franklin	15.72%	25
Lathrup Village	1.26%	2
Lyon Twp.	0.00%	0
Northville	0.63%	1
Novi	1.26%	2
Oak Park	0.63%	1
Orchard Lake	0.63%	1
Pontiac	0.63%	1
Rochester Hills	1.26%	2
Southfield	1.89%	3
Southfield Twp.	0.00%	0
Troy	16.98%	27
Walled Lake	1.89%	3
West Bloomfield Twp.	4.40%	7
Wixom	0.63%	1

Other (please specify)	5.03%	8
TOTAL		159

#	OTHER (PLEASE SPECIFY)	DATE
1	Royal oak	1/5/2018 3:40 PM
2	Berkley	12/5/2017 3:53 PM
3	Xwhite lake	10/17/2017 1:28 AM
4	royal oak	9/25/2017 6:25 PM
5	Commerce	8/29/2017 3:07 PM
6	Bingham Farms	8/17/2017 7:21 PM
7	Royal oak	8/2/2017 11:15 AM
8	Commerce Township	8/1/2017 5:37 PM

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

Answered: 82 Skipped: 432



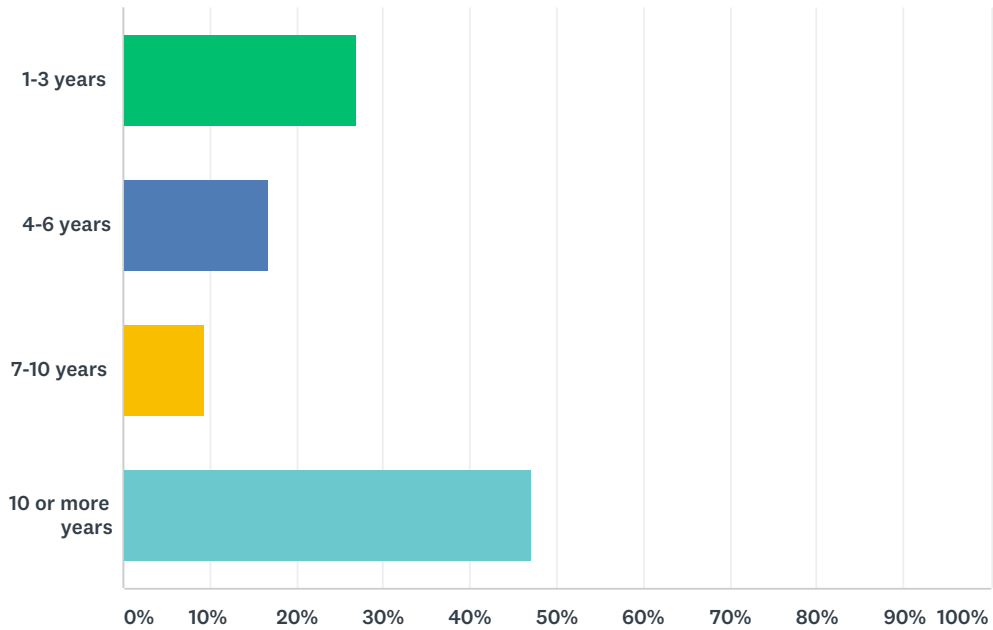
ANSWER CHOICES	RESPONSES
Salem Twp.	12.20% 10
Superior Twp.	21.95% 18
Ypsilanti Twp.	36.59% 30
Other (please specify)	29.27% 24
TOTAL	82

#	OTHER (PLEASE SPECIFY)	DATE
1	1'>">	10/1/2017 6:31 AM
2	Ypsilanti City	8/31/2017 5:23 PM
3	Ypsilanti	8/21/2017 12:47 PM
4	Ypsilanti City	8/11/2017 1:59 PM
5	Ypsilanti City	8/2/2017 10:35 PM
6	City of Ypsilanti	8/2/2017 8:46 PM
7	Ypsilanti	8/2/2017 6:12 PM
8	Ypsilanti city	8/2/2017 12:34 PM
9	Ypsilanti	8/2/2017 12:01 PM
10	Ypsilanti	8/2/2017 9:38 AM
11	City of Ypsilanti	8/1/2017 10:31 PM
12	Ann Arbor Township	8/1/2017 9:43 PM
13	Canton	8/1/2017 9:15 PM

14	City of Ypsilanti	8/1/2017 7:56 PM
15	City of Ypsilanti	8/1/2017 6:56 PM
16	City of Ypsilanti	8/1/2017 5:48 PM
17	Northville	8/1/2017 5:34 PM
18	South Lyon	8/1/2017 4:49 PM
19	Ypsilanti City	8/1/2017 4:35 PM
20	Northville	8/1/2017 4:31 PM
21	Ypsilanti City	8/1/2017 3:10 PM
22	city of Ypsi	8/1/2017 2:20 PM
23	City of Ypsilanti	8/1/2017 2:14 PM
24	Ypsilanti City	8/1/2017 2:00 PM

Q5 How long have you lived at your current residence?

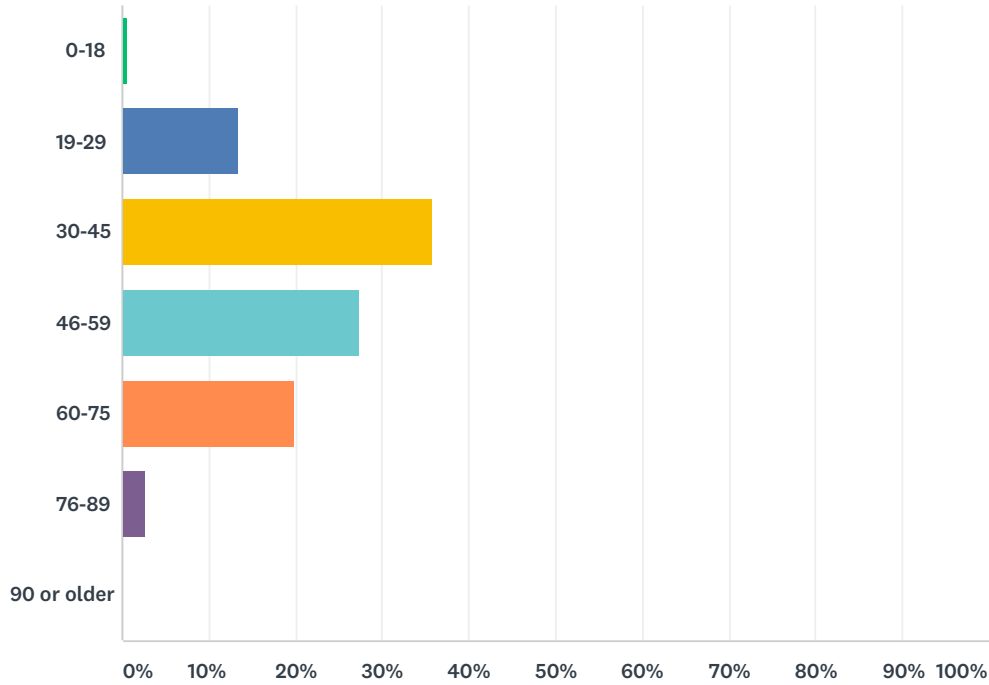
Answered: 484 Skipped: 30



ANSWER CHOICES	RESPONSES
1-3 years	27.07% 131
4-6 years	16.74% 81
7-10 years	9.50% 46
10 or more years	47.11% 228
TOTAL	484

Q6 How old are you?

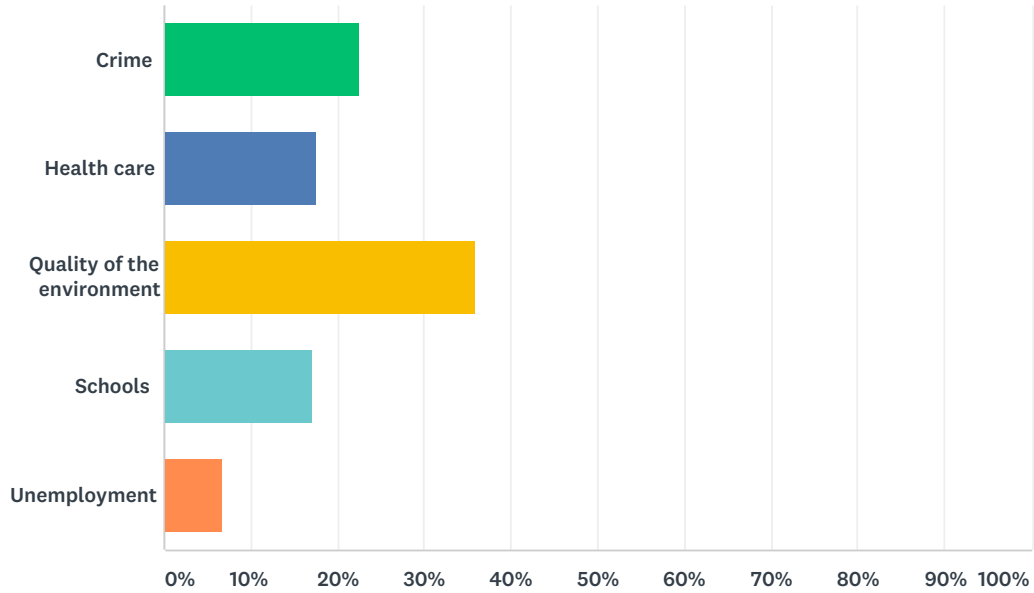
Answered: 481 Skipped: 33



ANSWER CHOICES	RESPONSES
0-18	0.62% 3
19-29	13.31% 64
30-45	35.76% 172
46-59	27.44% 132
60-75	19.96% 96
76-89	2.70% 13
90 or older	0.21% 1
TOTAL	481

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

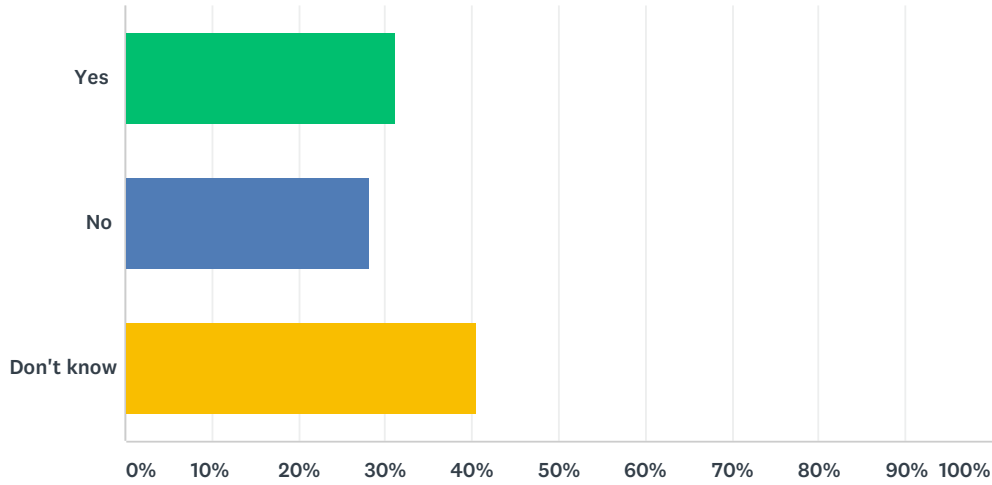
Answered: 473 Skipped: 41



ANSWER CHOICES	RESPONSES	
Crime	22.62%	107
Health care	17.55%	83
Quality of the environment	35.94%	170
Schools	17.12%	81
Unemployment	6.77%	32
TOTAL		473

Q8 Do you live in a watershed?

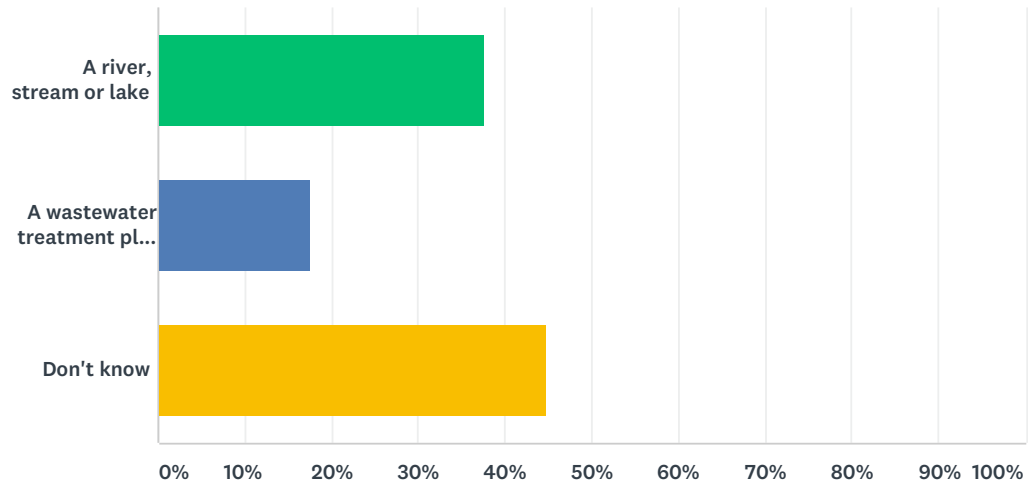
Answered: 473 Skipped: 41



ANSWER CHOICES	RESPONSES	
Yes	31.08%	147
No	28.33%	134
Don't know	40.59%	192
TOTAL		473

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

Answered: 470 Skipped: 44



ANSWER CHOICES	RESPONSES	
A river, stream or lake	37.66%	177
A wastewater treatment plant	17.66%	83
Don't know	44.68%	210
TOTAL		470

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

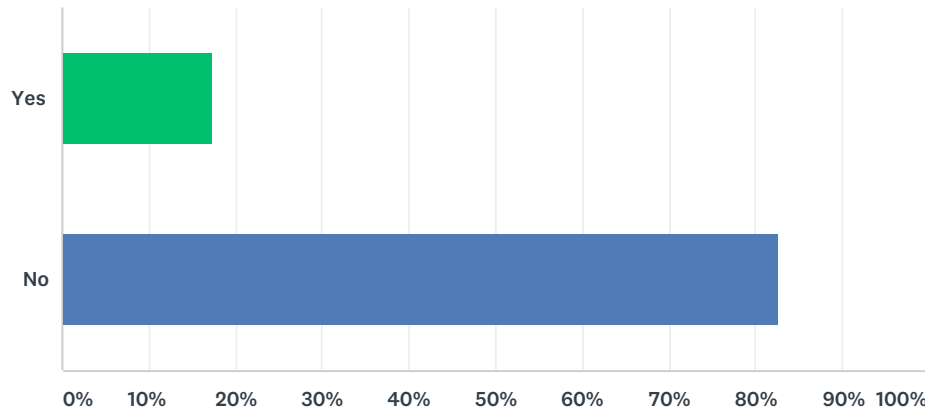
Answered: 467 Skipped: 47



	VERY FAMILIAR	SOMEWHAT FAMILIAR	NOT VERY FAMILIAR	TOTAL	WEIGHTED AVERAGE
(no label)	11.78%	44.11%	44.11%		
	55	206	206	467	1.00

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

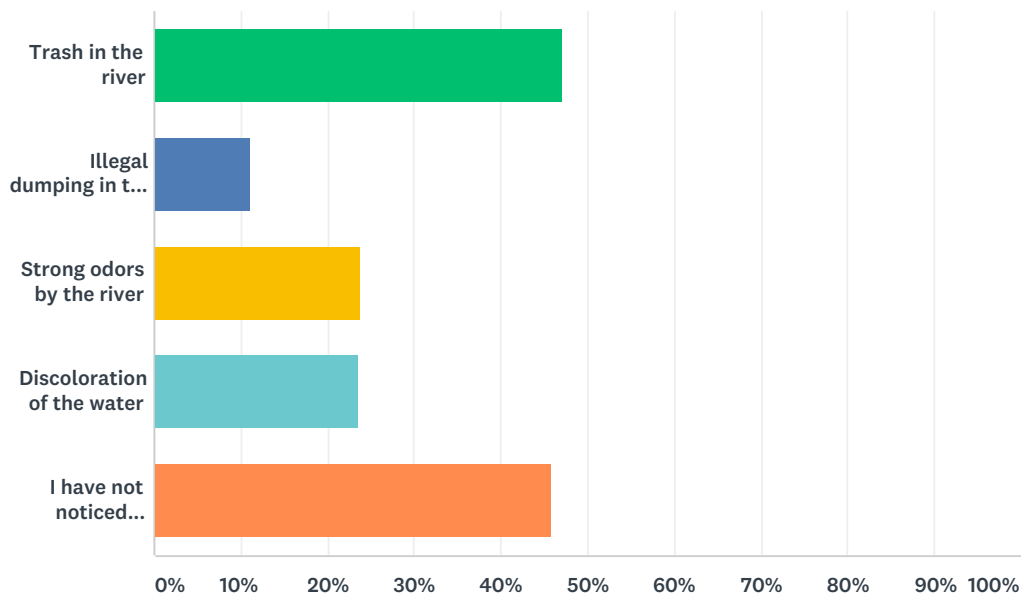
Answered: 465 Skipped: 49



ANSWER CHOICES	RESPONSES	
Yes	17.42%	81
No	82.58%	384
TOTAL		465

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

Answered: 457 Skipped: 57



ANSWER CHOICES	RESPONSES
Trash in the river	47.05% 215
Illegal dumping in the river	11.16% 51
Strong odors by the river	23.85% 109
Discoloration of the water	23.63% 108
I have not noticed anything unusual	45.73% 209
Total Respondents: 457	

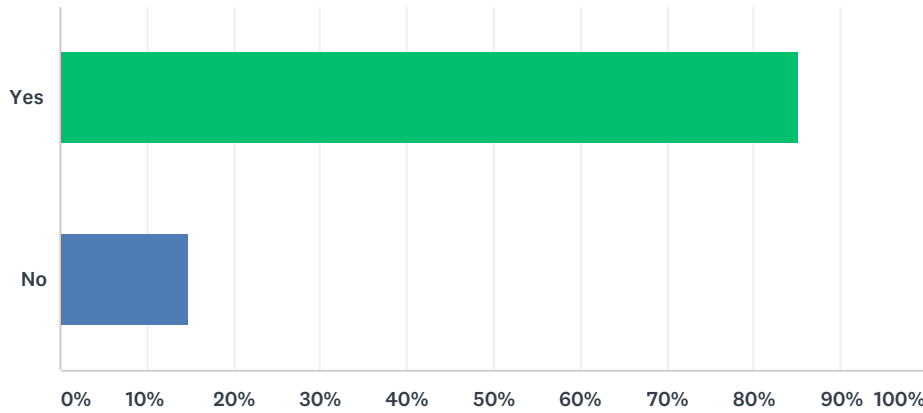
#	PLEASE DESCRIBE IN MORE DETAIL IF NECESSARY OR IF YOU HAVE SEEN SOMETHING THAT IS NOT LISTED ABOVE (INCLUDE CROSS STREETS IF POSSIBLE)	DATE
1	Erosion, sudden level changes, recreation, fishing, paddling.	4/30/2018 10:08 AM
2	Extremely low water levels	3/6/2018 7:26 PM
3	NA	12/5/2017 3:54 PM
4	In the last 10 years the river has gotten cleaner. I live next to Heinz Drive and the park has also gotten cleaner	11/7/2017 2:06 PM
5	oil in Newburgh lake	11/1/2017 3:31 PM
6	Large amounts of sediment in streams that are fed by storm drains, especially after rain events	10/26/2017 2:17 PM
7	Mosquitoes very heavy in some locations	10/16/2017 7:04 PM
8	Trash and debris swept in after storms especially	10/9/2017 9:31 AM
9	Large beaver dams. Henry Ruff Rd near Miss Ave	10/3/2017 3:48 AM
10	Live in westland	9/24/2017 6:44 AM
11	Im not familiar with location	9/23/2017 12:45 AM

WATER QUALITY CHANGES IN THE ROUGE RIVER 2017 SURVEY www.allianceofrougecommunities.com
 contact us at: info@allianceofrougecommunities.com or 734-272-0291

12	Noticed an oily/viscous substance leaking from a drain into the river itself	9/22/2017 3:40 PM
13	Don't live near a river but notice sewer odor when it rains	9/9/2017 9:54 AM
14	At times the water appears slightly milky (13 mile and Telegraph)	9/4/2017 7:48 PM
15	Lots of trash in and around the water at Newburgh Lake and Wilcox Lake. Water smells bad and you can see something slick on top of the water	8/31/2017 3:22 PM
16	People throwing bottles in the water and on the banks	8/16/2017 9:08 PM
17	She from bridge reconstruction narrowing river.	8/16/2017 6:04 AM
18	bubbles like suds	8/15/2017 2:25 PM
19	Floating tree limbs	8/15/2017 2:03 PM
20	Venoy near Michigan Ave shopping carts oily film on water	8/11/2017 4:42 PM
21	While driving through Hines, the closer you get to Wilson Pond, the stronger the odor. It's horrific! Spent some time in Hines near the river South of Wilson & the river was murky with a slight smell.	8/11/2017 11:44 AM
22	I teach in dbn hgts and my class participates in a study each fall & spring	8/10/2017 1:44 PM
23	Have increased volume/speed of water causing erosion of my ravine property	8/4/2017 11:49 AM
24	Tarabusi Creek, Bell River Branch along Grand River, East of Halsted Rd	8/3/2017 1:40 PM
25	buckthorn, phragmites australious, dames rocket, many invasive plants	8/3/2017 12:24 PM
26	We live down river from the Redford CSO plant. Flooding and sewage overflow has been reduced. The choke point of tunnels under telegraph road is a problem for flooding. This is by Tarabusi creek.	8/3/2017 11:28 AM
27	Strong odors were noticed in creek	8/2/2017 2:43 PM
28	I'm not even sure where the Rouge River is located, but I often see trash in local bodies of water.	8/1/2017 10:33 PM
29	I have not been close enough to notice.	8/1/2017 8:42 PM
30	I never see the Rouge River	8/1/2017 7:59 PM
31	Huge log jams, trees falling over all the time. The river floods, leaving foul smelling residue behind.	8/1/2017 6:33 PM
32	I commute northbound via Canton Center and Sheldon Roads,over the Rouge River, and notice rain water flooding the roads, crumbling bridges, sinking/buckling roads, and potholes.	8/1/2017 6:19 PM
33	Bottles, muddy	8/1/2017 3:42 PM
34	Trucks pumping water out of Johnson Creek for commercial purposes	8/1/2017 2:24 PM
35	I have not looked	8/1/2017 1:03 PM
36	My son who lives in Farmington Hills -the creek -which is usually substantial is bone dry now	8/1/2017 12:58 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?

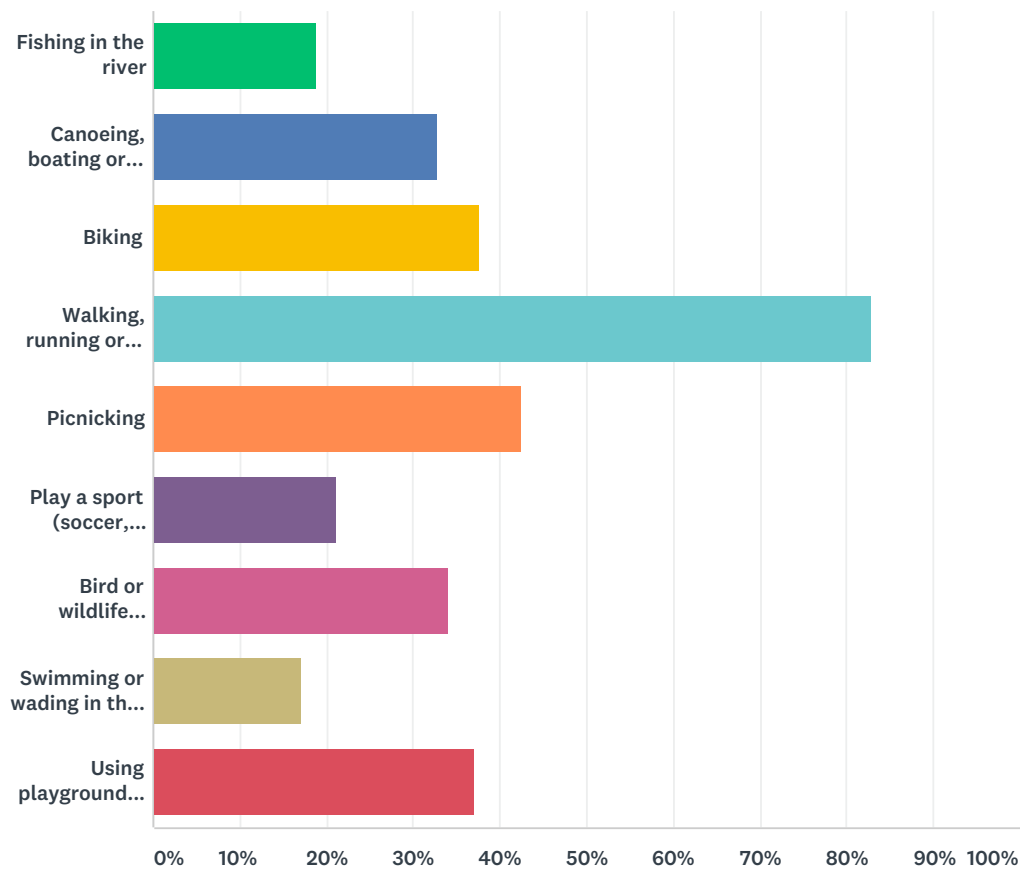
Answered: 455 Skipped: 59



ANSWER CHOICES	RESPONSES	
Yes	85.05%	387
No	14.95%	68
TOTAL		455

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: 384 Skipped: 130



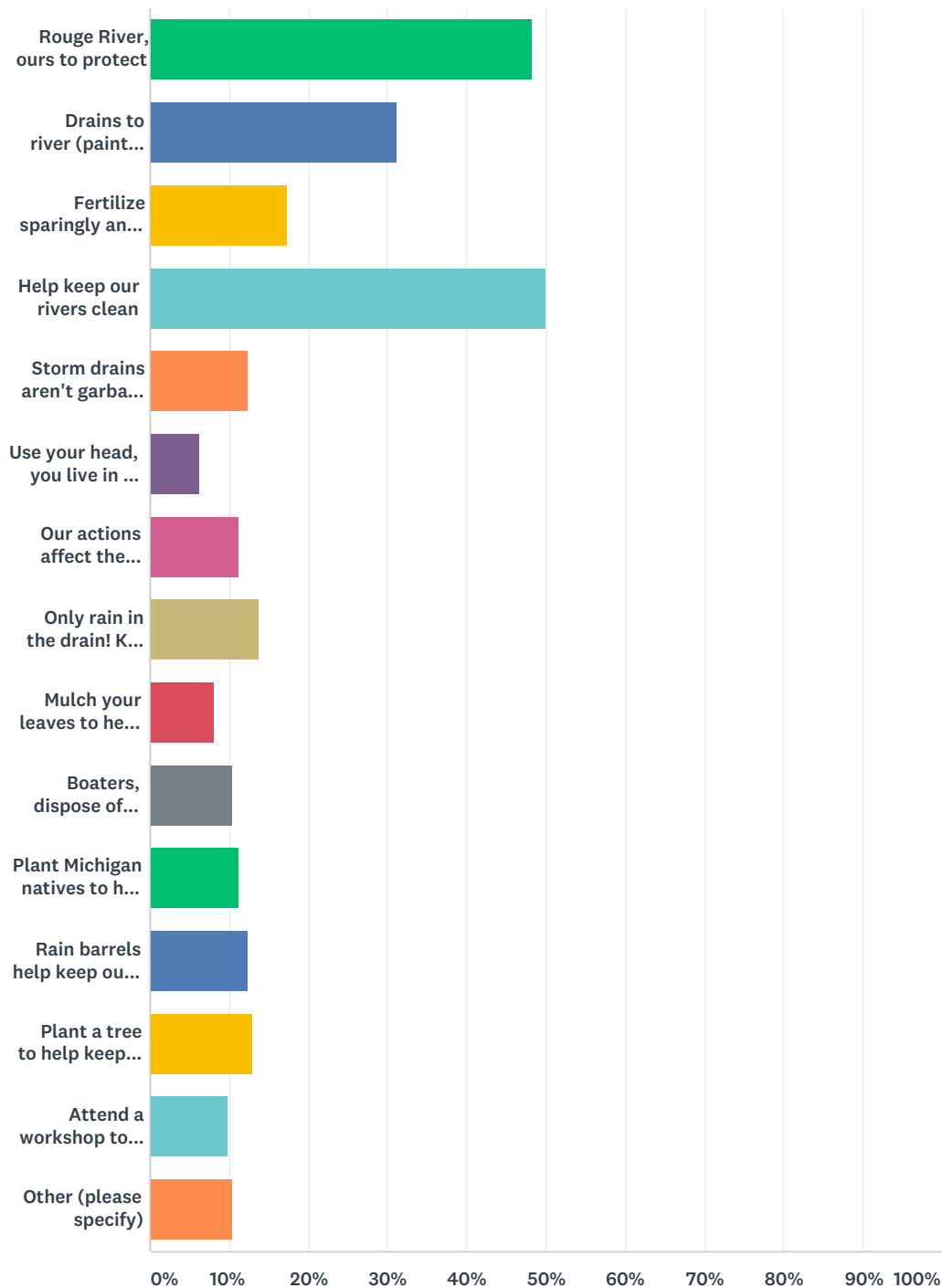
ANSWER CHOICES	RESPONSES
Fishing in the river	18.75% 72
Canoeing, boating or tubing in the river	32.81% 126
Biking	37.76% 145
Walking, running or jogging	82.81% 318
Picnicking	42.45% 163
Play a sport (soccer, sledding, baseball)	21.09% 81
Bird or wildlife watching	34.11% 131
Swimming or wading in the river	17.19% 66
Using playground equipment	36.98% 142
Total Respondents: 384	

#	OTHER (PLEASE SPECIFY)	DATE
1	Dog walking, woody debris management, trash pickup, maple sugaring, outdoor education	4/30/2018 10:25 AM

2	Relaxing	3/29/2018 3:02 PM
3	Botanizing	12/14/2017 10:22 PM
4	Cruisin' Hines	10/16/2017 7:04 PM
5	Community activities, fairs, fireworks	10/3/2017 3:49 AM
6	Dog Parks	9/16/2017 4:03 AM
7	Car cruise Hines Drive	9/9/2017 3:50 PM
8	Taking pictures	9/8/2017 11:32 AM
9	My sons participate in fish surveys hosted by the Rouge River Org.	9/7/2017 8:15 AM
10	Panning/exploring	9/2/2017 3:00 PM
11	Festival	8/1/2017 2:45 PM

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

Answered: 440 Skipped: 74



ANSWER CHOICES	RESPONSES	
Rouge River, ours to protect	48.41%	213
Drains to river (painted message on storm drain)	31.14%	137

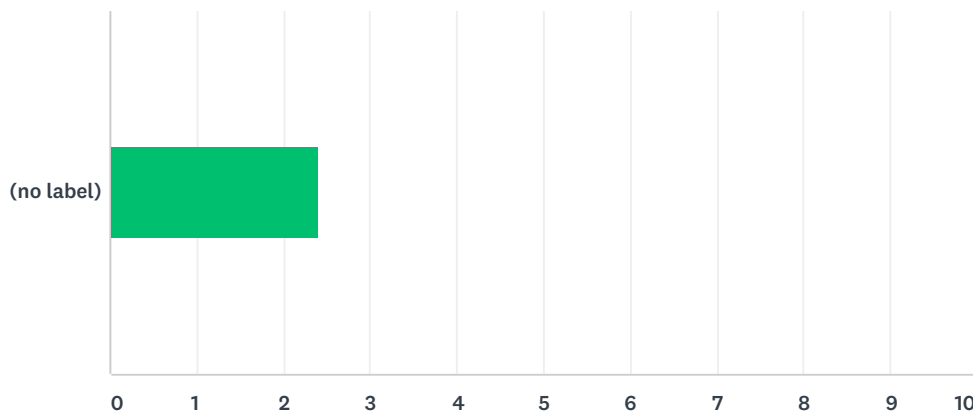
Fertilize sparingly and caringly	17.27%	76
Help keep our rivers clean	50.00%	220
Storm drains aren't garbage cans	12.27%	54
Use your head, you live in a watershed	6.36%	28
Our actions affect the Rouge River	11.36%	50
Only rain in the drain! Keep our rivers clean	13.86%	61
Mulch your leaves to help keep our rivers clean	8.18%	36
Boaters, dispose of waste properly; keep our rivers clean	10.45%	46
Plant Michigan natives to help keep our river clean	11.36%	50
Rain barrels help keep our rivers clean	12.27%	54
Plant a tree to help keep our river clean	12.95%	57
Attend a workshop to help keep our rivers clean	9.77%	43
Other (please specify)	10.45%	46
Total Respondents: 440		

#	OTHER (PLEASE SPECIFY)	DATE
1	none of these	2/22/2018 12:09 PM
2	NONE	1/17/2018 2:49 PM
3	none	11/17/2017 8:24 AM
4	Rouge rescue.	11/3/2017 1:35 PM
5	none	11/1/2017 3:35 PM
6	None	10/19/2017 7:33 PM
7	None	10/18/2017 7:41 AM
8	None	10/17/2017 12:54 PM
9	None	10/13/2017 11:09 PM
10	None of the above	9/21/2017 3:17 PM
11	Raised by 300 acres woodlands, water - Know good practices, w/o need for "tips". Lots of written stuff around, but Village policy does NOT require site design or accountability for poor water/land stewardship. All voluntary. Rich mostly disrespectful in practices.	9/21/2017 2:58 PM
12	None	9/21/2017 11:50 AM
13	In the bag Not the River	9/16/2017 4:16 AM
14	None	9/13/2017 10:55 AM
15	None	8/29/2017 10:21 AM
16	None	8/16/2017 6:08 PM
17	None	8/11/2017 5:25 PM
18	NONE	8/10/2017 10:31 AM
19	none of the above	8/10/2017 6:07 AM
20	Grow Zone	8/8/2017 7:49 AM
21	None	8/6/2017 5:22 PM
22	None of them	8/4/2017 6:52 PM

23	None	8/3/2017 2:18 PM
24	there's some real goods ones above	8/3/2017 12:27 PM
25	I am grateful to workshops sponsored by Friends of the Rouge and the Wet Weather Demonstration Project.	8/3/2017 11:31 AM
26	None of the above	8/2/2017 8:48 PM
27	None	8/2/2017 6:14 PM
28	.	8/2/2017 12:37 PM
29	None	8/2/2017 12:10 PM
30	Un	8/2/2017 8:34 AM
31	None	8/1/2017 8:41 PM
32	None	8/1/2017 8:32 PM
33	none	8/1/2017 8:01 PM
34	none of the above.	8/1/2017 7:45 PM
35	I have not seen or heard any environmental protection phrases regarding the Rouge.	8/1/2017 7:39 PM
36	none	8/1/2017 6:21 PM
37	None	8/1/2017 5:08 PM
38	None	8/1/2017 4:32 PM
39	Don't leave your liver in a river.	8/1/2017 4:04 PM
40	None	8/1/2017 3:35 PM
41	n/a	8/1/2017 2:45 PM
42	n/a	8/1/2017 2:45 PM
43	None	8/1/2017 2:36 PM
44	N/A	8/1/2017 2:04 PM
45	None	8/1/2017 2:03 PM
46	Have not seen or heard anything. Not enough is being done marketing wise	8/1/2017 12:55 PM

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

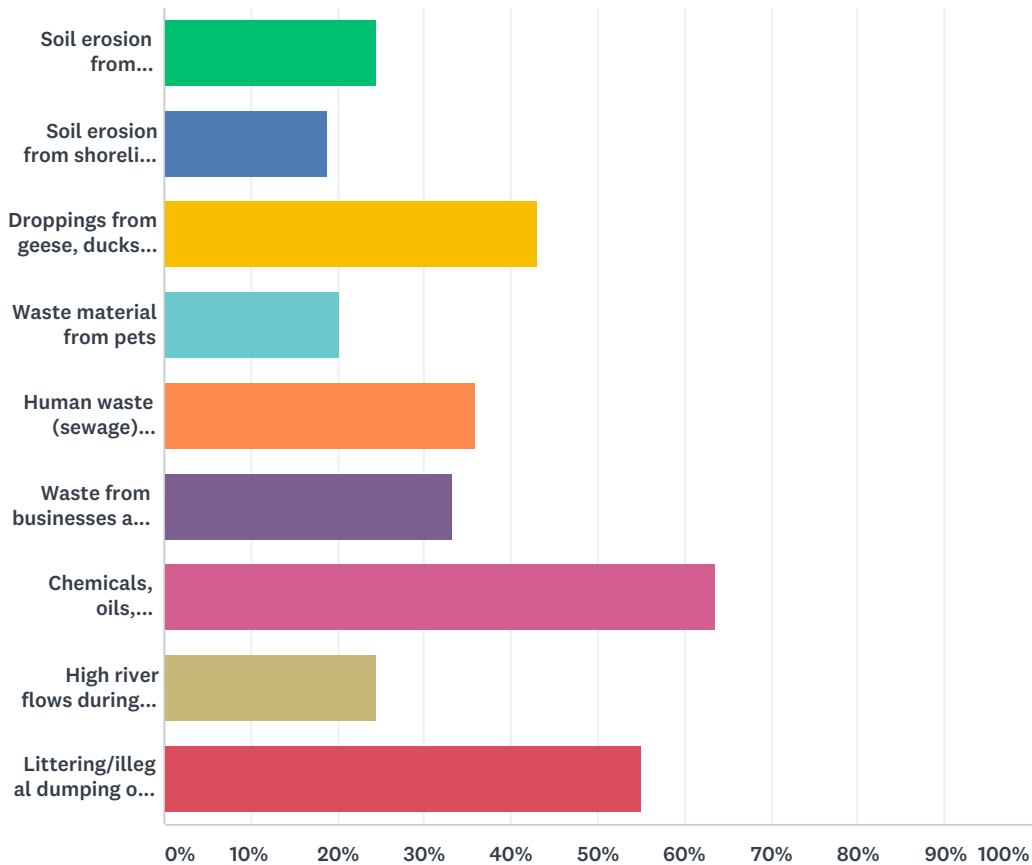
Answered: 438 Skipped: 76



	MUCH BETTER	SLIGHTLY BETTER	THE SAME	SLIGHTLY WORSE	MUCH WORSE	TOTAL	WEIGHTED AVERAGE
(no label)	21.23% 93	31.05% 136	35.62% 156	10.50% 46	1.60% 7	438	2.40

**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)**

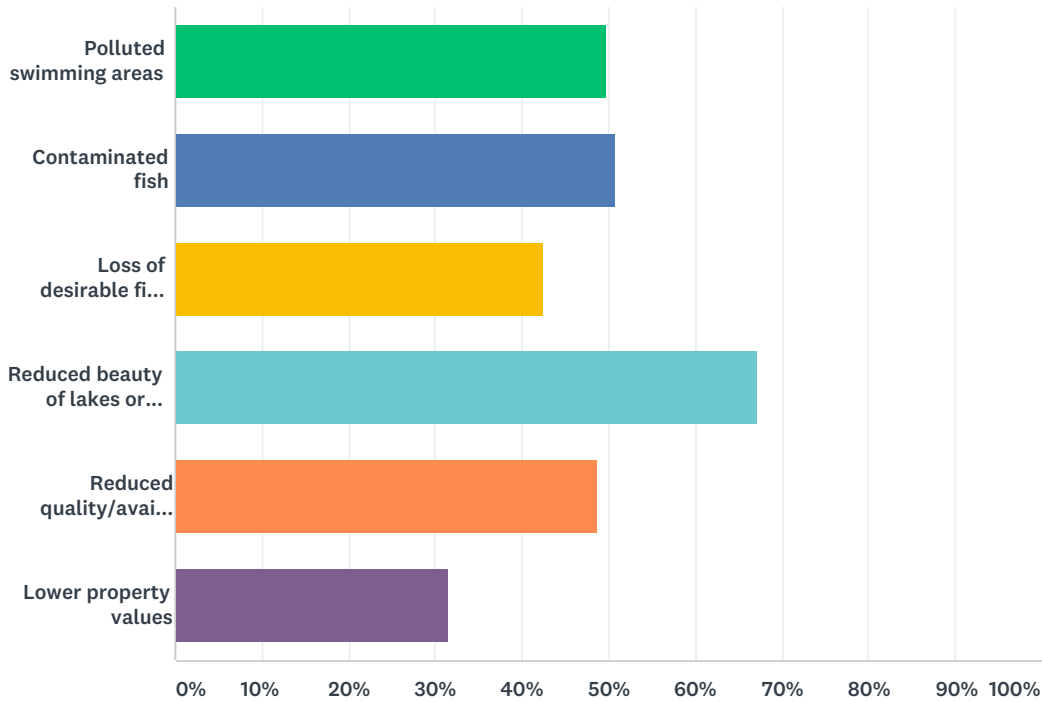
Answered: 429 Skipped: 85



ANSWER CHOICES	RESPONSES
Soil erosion from construction sites	24.48% 105
Soil erosion from shoreline and/or streambanks	18.88% 81
Droppings from geese, ducks and other waterfowl	43.12% 185
Waste material from pets	20.28% 87
Human waste (sewage) discharges that occur during heavy rain storms from Combined Sewer Overflows or cross-connections between the sanitary and storm sewers	35.90% 154
Waste from businesses and industrial facilities	33.33% 143
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	63.64% 273
High river flows during rain events	24.48% 105
Littering/illegal dumping of trash	55.01% 236
Total Respondents: 429	

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

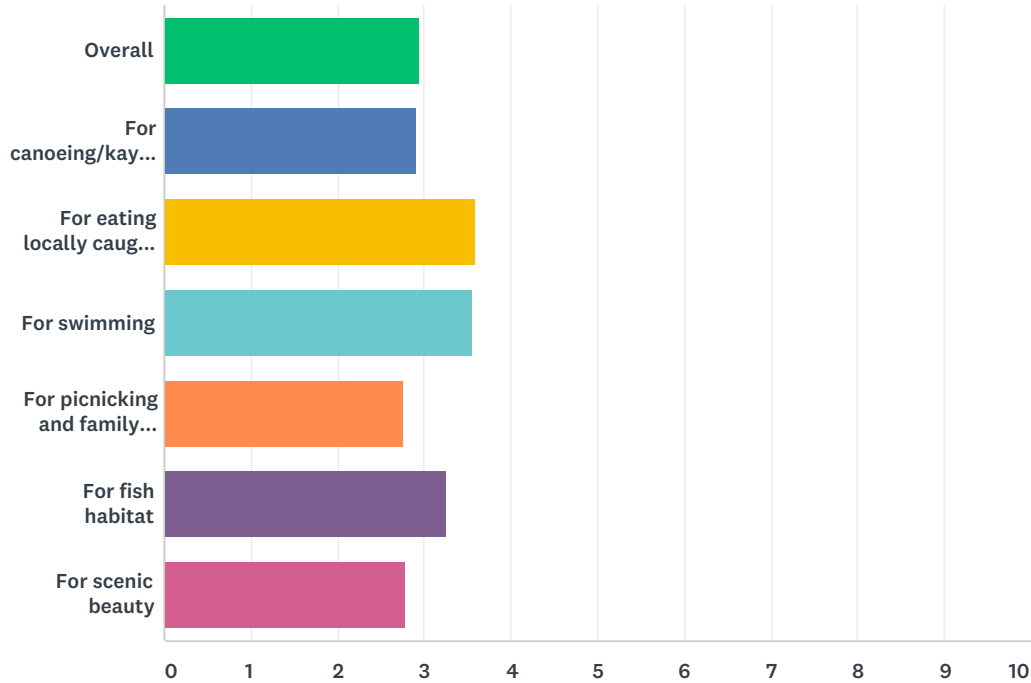
Answered: 427 Skipped: 87



ANSWER CHOICES	RESPONSES	
Polluted swimming areas	49.88%	213
Contaminated fish	50.82%	217
Loss of desirable fish species	42.39%	181
Reduced beauty of lakes or streams	67.21%	287
Reduced quality/availability of water recreation activities	48.71%	208
Lower property values	31.62%	135
Total Respondents: 427		

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

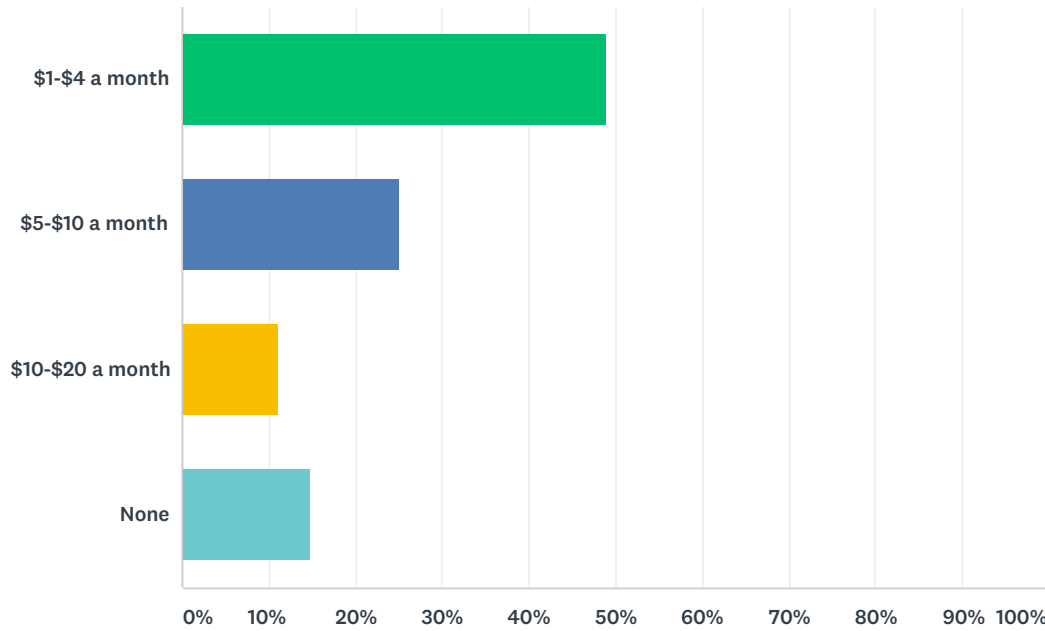
Answered: 416 Skipped: 98



	GOOD	FAIR	POOR	TOTAL	WEIGHTED AVERAGE
Overall	22.44% 92	60.24% 247	17.32% 71	410	2.95
For canoeing/kayaking/boating	29.98% 122	50.12% 204	19.90% 81	407	2.90
For eating locally caught fish	4.17% 17	32.11% 131	63.73% 260	408	3.60
For swimming	4.41% 18	35.05% 143	60.54% 247	408	3.56
For picnicking and family activities	36.10% 148	51.46% 211	12.44% 51	410	2.76
For fish habitat	9.34% 38	55.77% 227	34.89% 142	407	3.26
For scenic beauty	33.41% 137	54.63% 224	11.95% 49	410	2.79

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

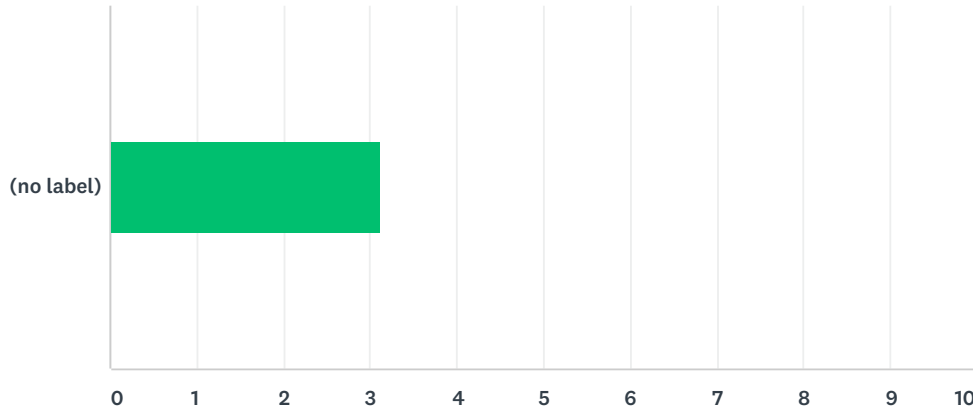
Answered: 409 Skipped: 105



ANSWER CHOICES	RESPONSES	
\$1-\$4 a month	48.90%	200
\$5-\$10 a month	25.18%	103
\$10-\$20 a month	11.00%	45
None	14.91%	61
TOTAL		409

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?

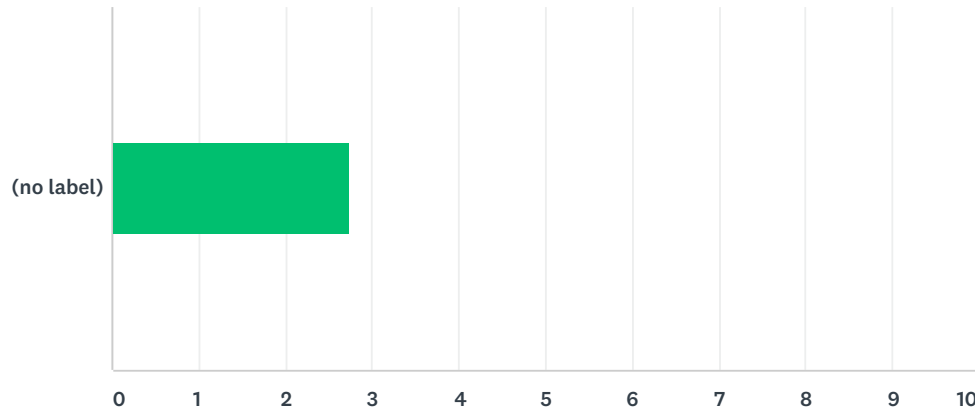
Answered: 407 Skipped: 107



	VERY SIGNIFICANT	SOMEWHAT SIGNIFICANT	NOT VERY SIGNIFICANT	NOT A PROBLEM	DON'T KNOW	TOTAL	WEIGHTED AVERAGE
(no label)	8.85% 36	27.52% 112	27.27% 111	15.72% 64	20.64% 84	407	3.12

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

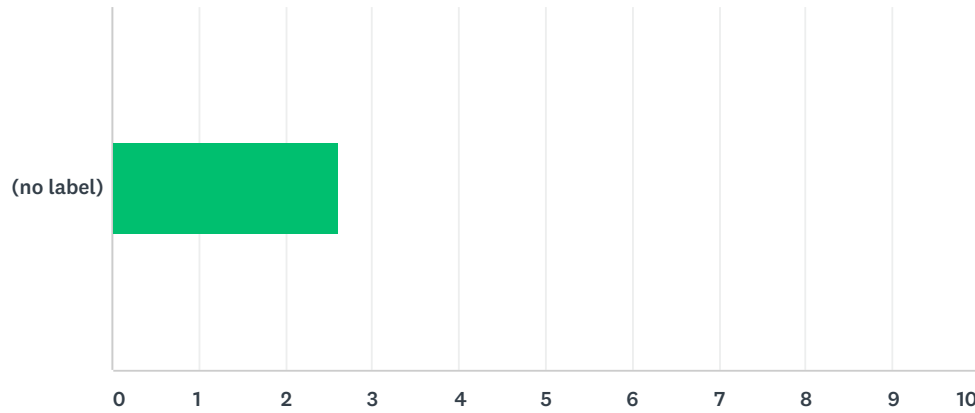
Answered: 406 Skipped: 108



	MUCH BETTER	SLIGHTLY BETTER	THE SAME	SLIGHTLY WORSE	MUCH WORSE	TOTAL	WEIGHTED AVERAGE
(no label)	6.65% 27	25.12% 102	56.90% 231	10.34% 42	0.99% 4	406	2.74

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

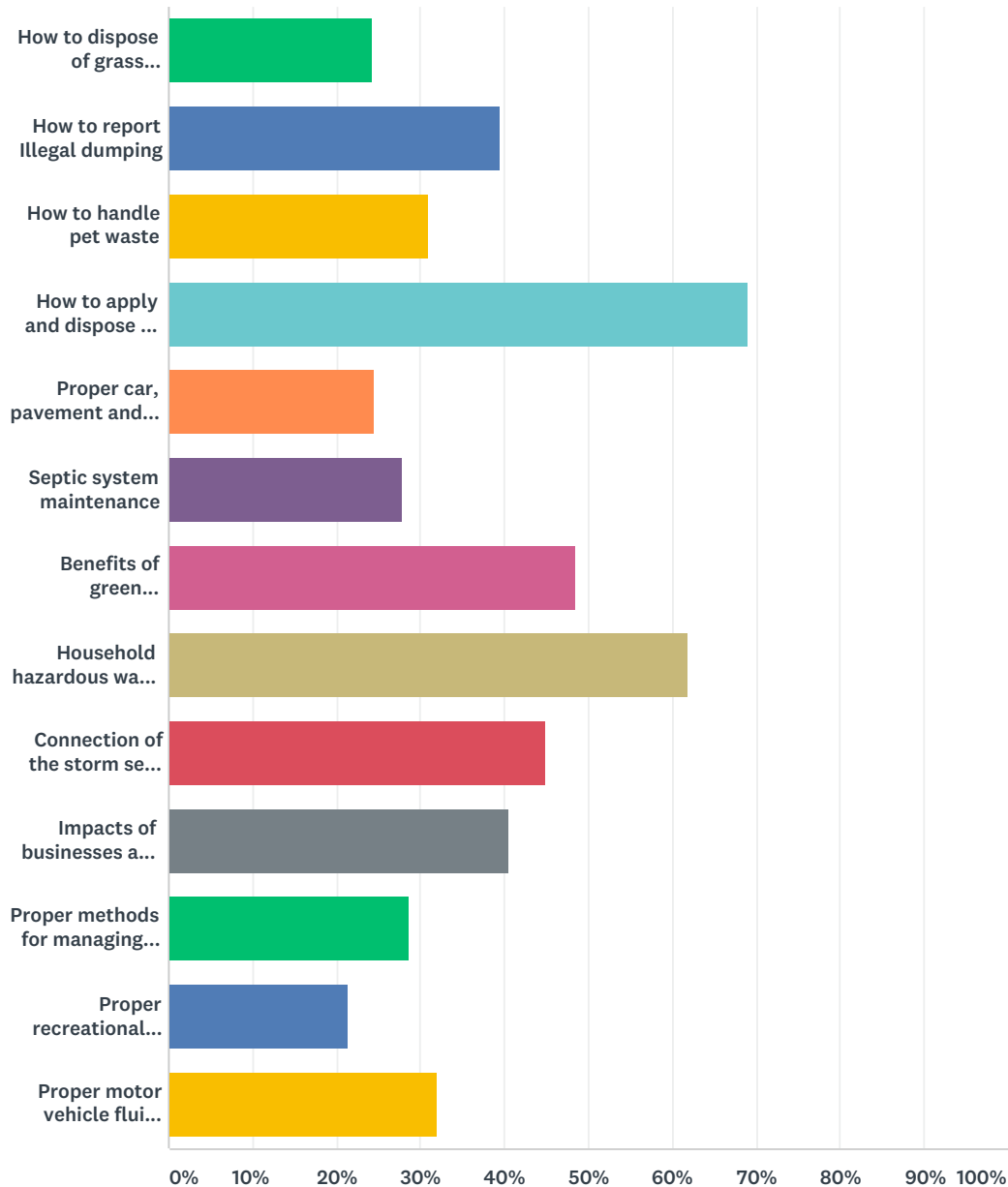
Answered: 404 Skipped: 110



	VERY SIGNIFICANT	SOMEWHAT SIGNIFICANT	NOT VERY SIGNIFICANT	NOT A PROBLEM	DON'T KNOW	TOTAL	WEIGHTED AVERAGE
(no label)	14.85% 60	45.54% 184	19.06% 77	4.95% 20	15.59% 63	404	2.61

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

Answered: 400 Skipped: 114

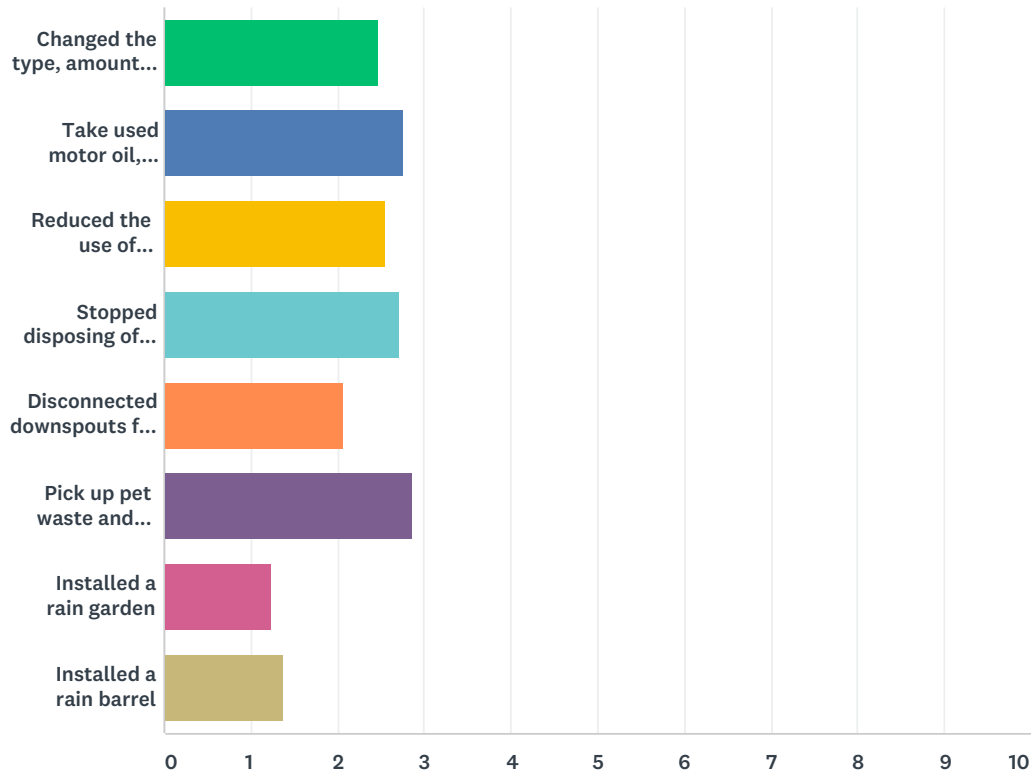


ANSWER CHOICES	RESPONSES
How to dispose of grass clippings and leaf litter	24.25% 97
How to report illegal dumping	39.50% 158
How to handle pet waste	31.00% 124
How to apply and dispose of pesticides/herbicides/fertilizers	69.00% 276
Proper car, pavement and power washing practices	24.50% 98

Septic system maintenance	27.75%	111
Benefits of green infrastructure/low-impact development (like rain gardens/rain barrels or using native plants)	48.50%	194
Household hazardous waste disposal	62.00%	248
Connection of the storm sewer system to local waterbodies	45.00%	180
Impacts of businesses and industries on stormwater runoff	40.50%	162
Proper methods for managing river/lake front properties	28.75%	115
Proper recreational vehicle waste disposal	21.25%	85
Proper motor vehicle fluid disposal	32.00%	128
Total Respondents: 400		

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

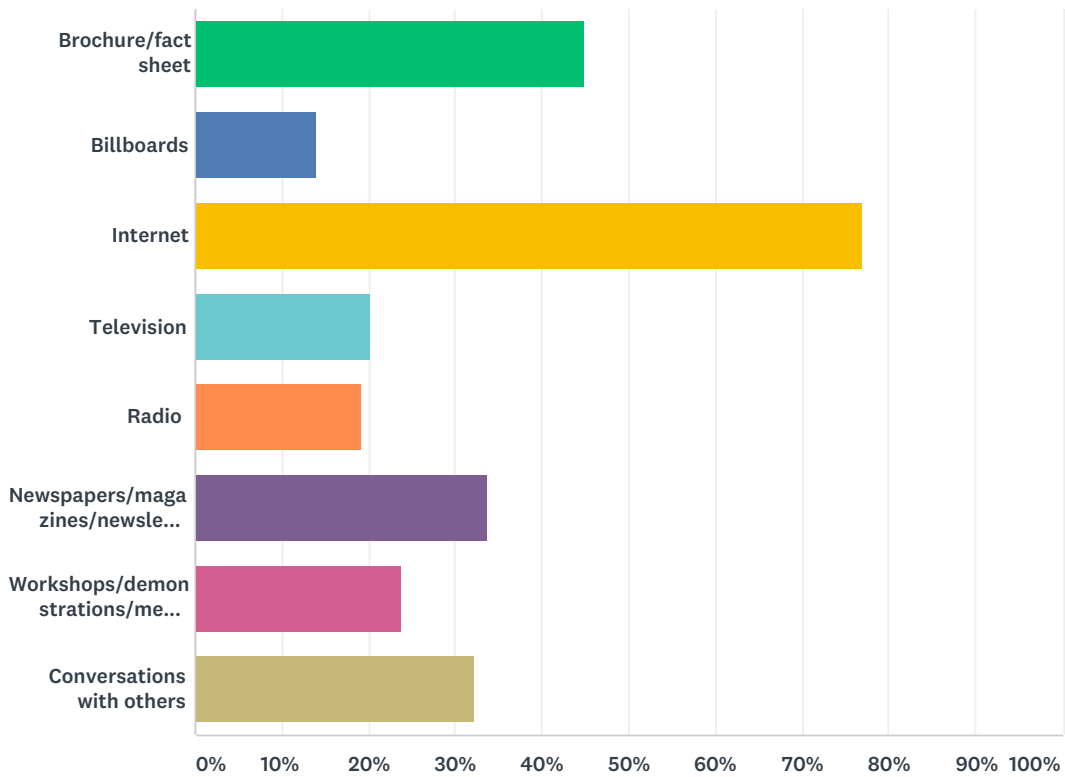
Answered: 396 Skipped: 118



	NO	YES	N/A	TOTAL	WEIGHTED AVERAGE
Changed the type, amounts or application of lawn and garden fertilizers, pesticides or other chemicals	18.94% 75	52.78% 209	28.28% 112	396	2.47
Take used motor oil, antifreeze, batteries or other household hazardous materials to recycling facilities	10.15% 40	73.60% 290	16.24% 64	394	2.76
Reduced the use of detergents or other chemicals for home car washings	16.03% 63	54.71% 215	29.26% 115	393	2.55
Stopped disposing of any waste material into catch basins and storm drains	6.91% 27	41.18% 161	51.92% 203	391	2.71
Disconnected downspouts from storm drains to allow roof runoff to seep into the ground	26.55% 103	30.41% 118	43.04% 167	388	2.07
Pick up pet waste and dispose of properly	4.36% 17	63.85% 249	31.79% 124	390	2.87
Installed a rain garden	69.43% 268	9.59% 37	20.98% 81	386	1.24
Installed a rain barrel	66.93% 259	15.50% 60	17.57% 68	387	1.38

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

Answered: 395 Skipped: 119



ANSWER CHOICES	RESPONSES	
Brochure/fact sheet	45.06%	178
Billboards	13.92%	55
Internet	76.96%	304
Television	20.25%	80
Radio	19.24%	76
Newspapers/magazines/newsletters	33.67%	133
Workshops/demonstrations/meetings	23.80%	94
Conversations with others	32.15%	127
Total Respondents: 395		