



2019 Project WIN / MS4 Public Behavior Change Assessment Survey Summary

***** DRAFT *****

November 21, 2019



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Survey Objectives

- The purpose of the survey was to understand the following prior to developing a Project WIN public outreach communications strategy:
 - Public attitudes toward clean waterways as an environmental issue.
 - Awareness and knowledge of key water pollution issues.
 - Public willingness to change behaviors to improve and protect the community's waterways.
 - Updated elements of an effective strategic public outreach communications plan.



SURVEY OVERVIEW



OVERVIEW – Online Survey

- The survey used was the same version as in 2013, 2015 and 2017. Due to survey length, a prize drawing was used to increase the response rate.
- The survey invitations were sent out over 20 days from September 17 to October 8. The survey was kept open through October 18. The required number of invitations increased significantly due to new spam filtering.

	2019 (#)	2019	2017	2015	2013
Invitations sent (#)	110,000	NA	50,800	25,000	20,000
Emails bounced back	4,669	4.2%	13.7%	3.2%	6.5%
Respondents opted out	619	0.6%	0.8%	0.8%	0.4%
Respondents failed screener	194	0.2%	0.3%	0.9%	1.0%
Partially completed survey	651	0.6%	0.8%	1.3%	3.1%
Completed the survey	979	0.9%	1.4%	4.2%	5.4%
Entered the prize drawing	802	81.9%	87.8%	94.5%	94.5%
Survey margin of error (+/-)		3.1%	3.7%	3.1%	3.1%

Survey Methodology

- Respondents were required to be Jefferson County residents and not employed in any of the following industries: Advertising or Marketing, Market Research, TV or Radio Station, Public Utility.
- No quotas were placed on age, gender or zip code. However, the collected sample was an excellent demographic and geographic cross-section of Jefferson County residents.
- The e-mail list used for survey solicitations was provided by Louisville Water in 2019.
- The survey was 10-15 minutes in length.
- The data was weighted using age, gender, rent/own residence and ZIP code area to match the current demographics of the MSD customer base. This is the same procedure used for the 2013, 2015 and 2017 surveys.





ZIP Code Segmentation

- ZIP codes were mapped as close as possible to the sewer and watersheds (see Appendix B).
- The segmentation resulted in 6 areas:
 - Downtown & West City [40202, 40203, 40208, 40210, 40211, 40212, 40215]
 - East City [40204, 40205, 40206, 40207, 40217, 40218, 40220]
 - Southwest [40216, 40258]
 - South County [40209, 40213, 40214, 40219, 40225, 40228, 40229, 40272, 40047, 40109, 40118, 40177]
 - East County [40018, 40023, 40243, 40245, 40291, 40299]
 - Northeast County [40025, 40059, 40222, 40223, 40241, 40242]



Demographics by ZIP Code

	Total	Downtown / West City	SouthWest	East City	South Co.	North East Co.	East Co.
Age (Mean)	46.5	40.4	46.0	47.8	43.9	50.9	49.7
% Male/Female	47/53	42/58	32/68	57/43	35/65	50/50	57/43
% HH with Kids <18	39.4	35.1	58.7	32.2	45.7	40.1	36.2
% College graduate +	64.9	55.6	51.9	74.0	53.3	83.3	66.6
Income (Mean)	\$71,905	\$46,561	\$65,159	\$77,425	\$66,892	\$88,499	\$82,486
% Own Residence	63.1	39.1	57.9	62.8	55.6	82.4	79.7
% Dog Ownership	45.2	35.8	32.9	41.0	57.6	51.2	44.2
% Use Fertilizer	27.6	9.6	17.2	22.7	23.3	54.6	39.0



KEY FINDINGS

KEY FINDINGS

Notable significant shifts since 2017

Favorable shifts in awareness or attitude

- Residents who say it is extremely important to have clean waterways has steadily increased: 48% in 2013, 57% in 2015, 55% in 2017 and 62% in 2019.
- Residents who say they aren't informed about the causes of rainwater runoff pollution decreased (52% vs 57% in 2017).
- Since 2013, there is considerably more awareness around wipes as a cause of sewer system overflow: 85% in 2013, 83% in 2015, 93% in 2017 and 93% in 2019. Further, 88% said this is an action they are willing to take.
- Those who disagree they are personally responsible for causing water pollution decreased (11% vs 21% in 2017).
- Residents who agree that there is reliable water pollution evidence increased (11% vs 7% in 2017).
- Residents increased their preference for Social Media to receive community news (25% vs 16% in 2017).





KEY FINDINGS

Notable significant shifts since 2017 (continued)

Unfavorable shifts in awareness or attitude

- East City residents rated water quality as lower (56% Fair/Poor vs 41% in 2017).
- Among those who consider the water quality as Fair/Poor, there was a shift toward pollution or trash as the cause, away from sewer system overflow and rainwater runoff.
 - Pollution or trash – 63% vs 51% in 2017
 - Sewer system overflow / rainwater runoff – 10% vs 18% in 2017
- More residents think it is safe to use waterways after it rains (24% vs 16% in 2017).
- Those who agree that stormwater is treated before being released into our waterways increased (42% vs 33% in 2017).



KEY FINDINGS

Public attitudes toward clean waterways

- Louisville residents continue to consider protecting our waterways from pollution one of the community's most important environmental issues. Climate change (+3.2%) is the second most important issue.
 - Young adults <30 (100%) and East City residents (98%) consider protecting our waterways the most important environmental issue.
 - Increasing the tree canopy has increased steadily 13.4% since 2013.
- While it remains important to residents that they have have clean rivers, creeks and ponds, about half (55%) rate the overall quality of these waterways as Good or better. Like previous studies, many residents (44%) perceive the waterways as polluted.
 - Women (48%) and East City residents (56%) more strongly perceive the waterways as polluted.



KEY FINDINGS

Public attitudes toward clean waterways (continued)

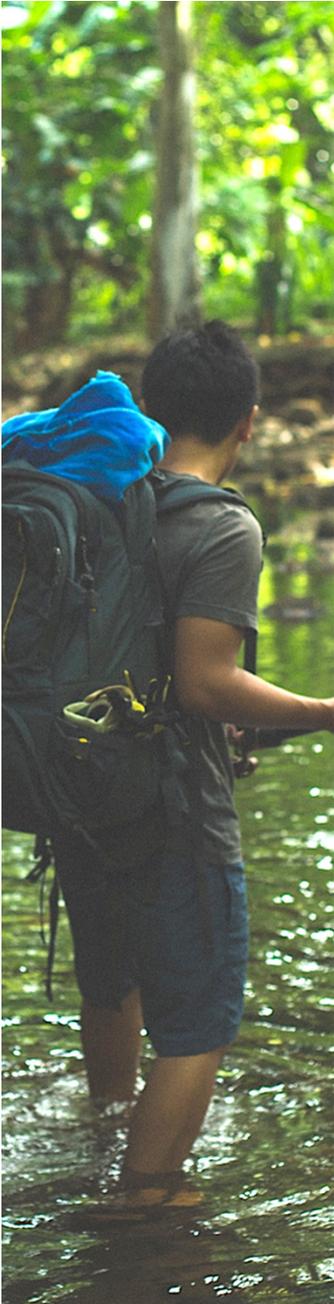
- Residents remain frightened by the pollution of the river, creeks and ponds (62% in 2017 and 2019).
- Most residents (83%) believe human activities have a significant impact on the quality of Louisville's waterways (3.9% decrease from 2017).
 - East City residents (87%) agree the most that humans have an impact on the quality of waterways. Southwest residents (39%) agree the least.



KEY FINDINGS

Knowledge of the issues

- Like the 2015 and 2017 surveys, residents generally are not very informed about the causes or impact of rainwater runoff pollution and sewer system overflow.
 - 27% don't know how rain affects water quality (-2% vs 2017)
 - 39% aren't sure if it is safe to use area waterways after it rains (-6% vs 2017)
 - 24% think it is safe to use waterways after it rains (+7% vs 2017)
 - 52% don't feel informed about the causes of rainwater runoff pollution (-4% vs 2017)
 - 59% don't feel informed about the causes of sewer system overflow (+1% vs 2017)
 - Men are more informed than women on both issues
 - Rainwater runoff pollution (informed/very informed): Men 15%, Women 11%
 - Sewer system overflow (informed/very informed): Men 18%, Women 10%



KEY FINDINGS

Knowledge of the issues (continued)

- As in 2015 and 2017, residents still do not fully understand the role of the sewer system in the rain management process.
 - Two-thirds aren't sure or agree that storm water is treated before being released back to our waterways.
 - 64% aren't sure or disagree that rainwater runoff is a leading cause of water pollution.
 - 72% aren't sure or disagree that sewer system overflow occurs frequently.
 - 60% say the evidence they have seen about water pollution is reliable. About one-third is not sure.



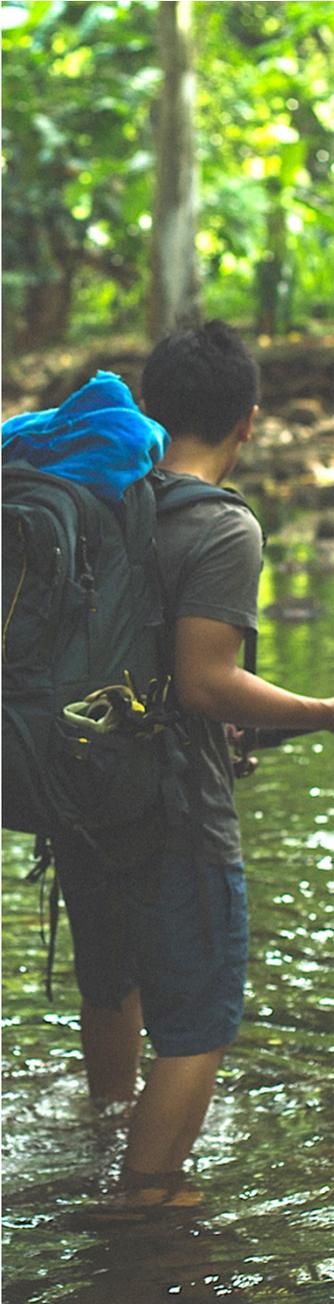
KEY FINDINGS

Knowledge of the issues (continued)

- Agreement around treating stormwater before returning to waterways has increased since 2017 (+8.7%) while agreement around other key issues has declined.
 - There are no strong patterns indicating which demographic segments agree with or better understand key issues. Women, young adults and Downtown residents agree a little more (Top 2 = Agree/Strongly Agree).

Agreement with Key Issues

Issue	Top 2 vs 2017	Gender Top 2	Age Top 2	Geography Top 2
Storm water is treated before returning to waterways	+8.7%	M: 39.6% F: 43.6%	Highest: <30, 46.6% Lowest: 60+, 34.8%	Highest: South City, 52.4% Lowest: East City, 25.2%
Rainwater runoff is a leading cause of pollution	-1.3%	M: 43.1% F: 29.7%	Highest: <30, 46.2% Lowest: 50-59, 29.0%	Highest: Downtown, 45.0% Lowest: Southwest, 26.6%
Sewer system overflow occurs frequently	-2.2%	M: 24.2% F: 31.8%	Highest: 30-39, 34.1% Lowest: 50-59, 23.2%	Highest: Downtown, 47.9% Lowest: East County, 19.6%



KEY FINDINGS

Knowledge of the issues (continued)

Key insights:

- *Louisville residents continue to see the value of protecting waterways to keep them clean, especially young adults.*
- *Most residents, however, are under-informed about the causal relationship between rainwater runoff pollution and sewer system overflow, and clean waterways.*
- *Further, there remains an opportunity to educate all residents on the role the sewer system plays in rain management.*
- *While public outreach efforts have made incremental progress, MSD may want to consider a more robust awareness and educational strategy to help residents understand how to protect the waterways they value.*
- *A pivoted strategy should include leveraging affinity groups (e.g. Scouts) and young adults (especially in East City) to ‘amplify’ messaging and educational efforts.*



KEY FINDINGS

Willingness to take action

- Almost half of residents (49%) say they **currently take actions** to reduce water pollution, a 5% increase over 2017.
- A large majority (81%) believe there are things they **could be doing** to reduce water pollution, a 4% increase over 2017.
- Among those who currently take action to reduce water pollution:
 - More residents actively don't litter (+14%) and pick up trash (+3%)
 - More residents use green products (+7%)
 - Fewer don't use lawn chemicals (21% vs 30% in 2017)
 - 66% who don't use chemicals live in Northeast and East county, and 53% are 55 years or older
 - Since 2013, there is a decline in residents who are careful about what they pour down the drain (11% in 2019 vs 28% in 2013)



KEY FINDINGS

Willingness to take action (continued)

- The top 5 actions residents **would be willing to take** to reduce pollution in our waterways include:
 - Putting FOGs in the trash rather than the drain (89%, +2.6% since 2017)
 - Putting wipes in the trash rather than the toilet (88%, +0.9% since 2017)
 - Taking hazardous wastes to a collection center (88%, +3.8% since 2017)
 - Picking up trash in the gutter where they live (87%, +3.2% since 2017)
 - Using environmentally friendly lawn products (82%, +4.0% since 2017)



KEY FINDINGS

Willingness to take action (continued)

- Residents think the following actions increase rainwater runoff pollution the most:
 - Improperly disposing of hazardous waste (97%, -2.2% vs 2017)
 - Leaking fluids from vehicles (94%, +25.0% vs 2017)
 - Putting trash in the gutter (94%, +0.9% vs 2017)
 - Using non-environmentally friendly chemicals (89%, -3.9% vs 2017)
- Since 2017, more residents consider washing their car in the driveway a contributor to rainwater runoff pollution (56% vs 50% in 2017).



KEY FINDINGS

Willingness to take action (continued)

- Similar to 2017, 93% of residents think flushing wipes is a primary cause of sewer system overflow. Other actions they think contribute to system overflow include:
 - Pouring FOGs down the drain (86%)
 - Putting lawn clippings and leaves in the gutter (83%)
 - Flushing hair down the toilet (68%)
- Women (88%), South County residents (91%), East County residents (90%) and adults 40-49 (91%) are most likely to associate pouring FOGs down the drain with system overflow. Southwest residents (74%) are less likely to make that association.



KEY FINDINGS

Willingness to take action (continued)

- Unchanged since 2015 and 2017, most residents (94%, Top 2) agree that “everyone can do their part” to reduce the effects of water pollution.
 - Women (58%) more than men (49%) strongly agreed we can all do our part
 - Northeast County (63%) and East City residents (58%) more than other geographies also strongly agree everyone can do their part
- Since 2017, there has been a 1.6% increase in those who feel personally accountable for reducing waterway pollution (63% vs 62% in 2017). Those who would do their part regardless of the actions of others also increased (71% vs 69% in 2017).
 - College Grads (78%), Downtown residents (77%) and women (75%) are most likely to do their part independent of others
 - A large majority (84%) continue to hold government, business and industry responsible for reducing rainwater runoff and sewer system overflow
 - Similar to 2017, 63% agree the utility company should provide incentives for people to reduce water pollution.



KEY FINDINGS

Key insights:

- *Public outreach efforts have built awareness and modified behaviors. This is evidenced by the increase in residents who believe their actions can help reduce water pollution, and those who say they are already taking action.*
- *While residents consistently say they don't litter to reduce water pollution, the citing of other positive behaviors varies each survey year. MSD has an opportunity to focus (or continue focusing) its outreach efforts on a vital few behaviors that are easy to implement, and that have the most impact such as: FOGs, not flushing wipes and using a collection center for hazardous waste.*
- *As with creating awareness, a more focused campaign amplified through demographic segments will help build advocacy. Collection center partnerships should also be established and promoted.*



KEY FINDINGS

Communications/How to Engage

- Fewer residents have heard something in the last year about the impact of rainwater runoff pollution or sewer system overflow and ways they can prevent it (17% vs 23% in 2017). 83% have no awareness or unsure.
 - Those who have heard something recall information about: not pouring FOGs down the drain, not littering, not washing clothes while raining, and general tips to prevent water pollution. They heard these messages through TV, newspaper, radio, and signs near waterways.
 - In 2019, residents recalled different information than they did in 2017: cleaning up sewers and street drains, avoiding creeks and waterways after a rain and using lawn chemicals.

KEY FINDINGS

Communications/How to Engage (continued)

- Residents want to be educated with facts to get them to pay attention to water pollution issues. Compared to 2017, they are less interested in financial rewards (53% vs 59% in 2017).
- Specifically, they would like to receive these types of information to pay attention to water quality issues: general education, an environmental report, statistical data, and financial rewards.
 - Residents under 30 (80%) would like an environmental report. Downtown/West City (87%) and those age 40-49 (83%) would prefer general education.
 - Statistical information appealed to those under 30 (77%).



KEY FINDINGS

Communications/How to Engage (continued)

- Residents are more varied in their media channel preferences, shifting away from broadcast channels to digital channels for specific types of information. Top 2 channels for each information type are:
 - Emergency information: TV (74%) and Radio (59%)
 - Community news: TV (66%) and Social Media (61%)
 - How-to information: Internet (56%) and Email (56%)
 - General notices: Email (65%) and TV (56%)
- For emergency information and community news, residents up to age 39 prefer Email and Social Media. Residents 40 and over prefer TV.
- For how-to information, residents up to age 49 prefer Social Media and the Internet. Residents 50 and over prefer Email and TV.





KEY FINDINGS

Communications/How to Engage (continued)

- Social media, the internet and email are gaining as preferred channels for different types of information.

	Social Media			Internet			Email		
	2017	2019	Change	2017	2019	Change	2017	2019	Change
Emergency information	57%	58%	+1%	48%	54%	+6%	50%	59%	+9%
Community News	57%	61%	+4%	37%	39%	+3%	51%	59%	+8%
How-to information	12%	13%	+1%	15%	11%	-4%	10%	13%	+3%
General notices	52%	47%	-5%	36%	39%	+3%	59%	65%	+6%

KEY FINDINGS

Key insights:

- *Aided recall of key waterway issues remains low which creates an opportunity for MSD to take a leadership role in educating the public and shaping their perceptions and behaviors around water pollution issues.*
- *While older residents are interested in general education, younger residents want more evidence-based messaging such as environmental and statistical reports. This preference further underscores an opportunity to create demographic-specific outreach strategies.*
- *Media channel preferences are more splintered than in previous surveys with Social Media and digital channels surfacing as the preferred way to reach younger residents.*





KEY FINDINGS

Perceptions about MSD

- The positive opinion of MSD increased slightly since 2017. (40.3% vs 39.8% in 2017).
- The knowledge of what MSD does has decreased since 2017. When asked what MSD does in an open-ended question, residents said:

	2017	2019
Install and maintain sewers	34%	25%
Treat wastewater	57%	9%
Provide drainage control	14%	9%
Repair pipes & infrastructure	15%	7%

- 9% of residents doesn't know what MSD does.



KEY FINDINGS

Perceptions about MSD (continued)

- Residents want MSD to continue to educate and provide more information and awareness to protect the health of the community's waterways. In open-ended responses about MSD's role:
 - 2019
 - Education (21%)
 - Provide more information (15%)
 - Play a major role (9%)
 - Provide incentives (8%)
 - 2017
 - Education (42%)
 - Provide more information (20%)
 - Inform public of ways to help (19%)
 - Play a major role (8%)
- *Key insight: Residents continue to want MSD to educate them about protecting the community's waterways.*

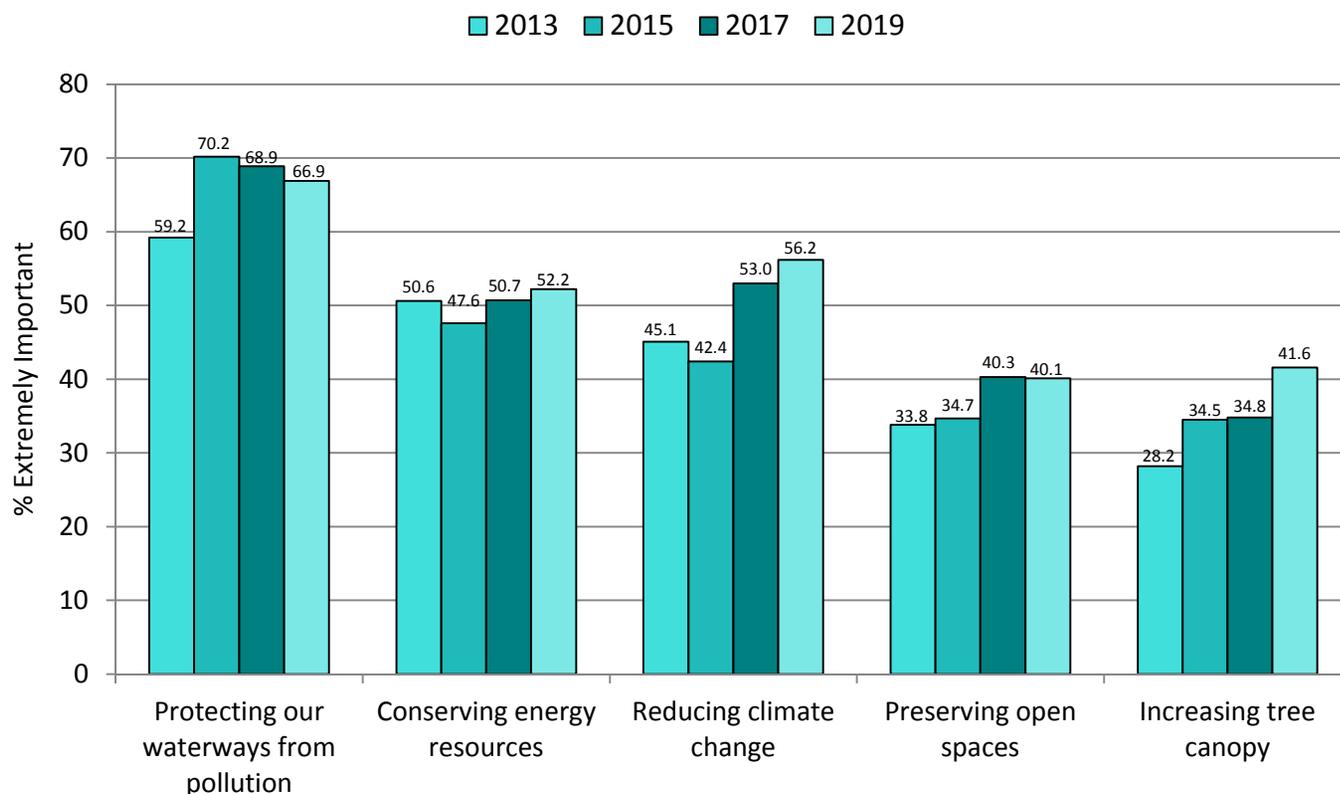


DETAILED FINDINGS

Q3 RESULTS – Importance of Environmental Issues



For each of the following environmental issues, indicate how important you feel the issue is to you.

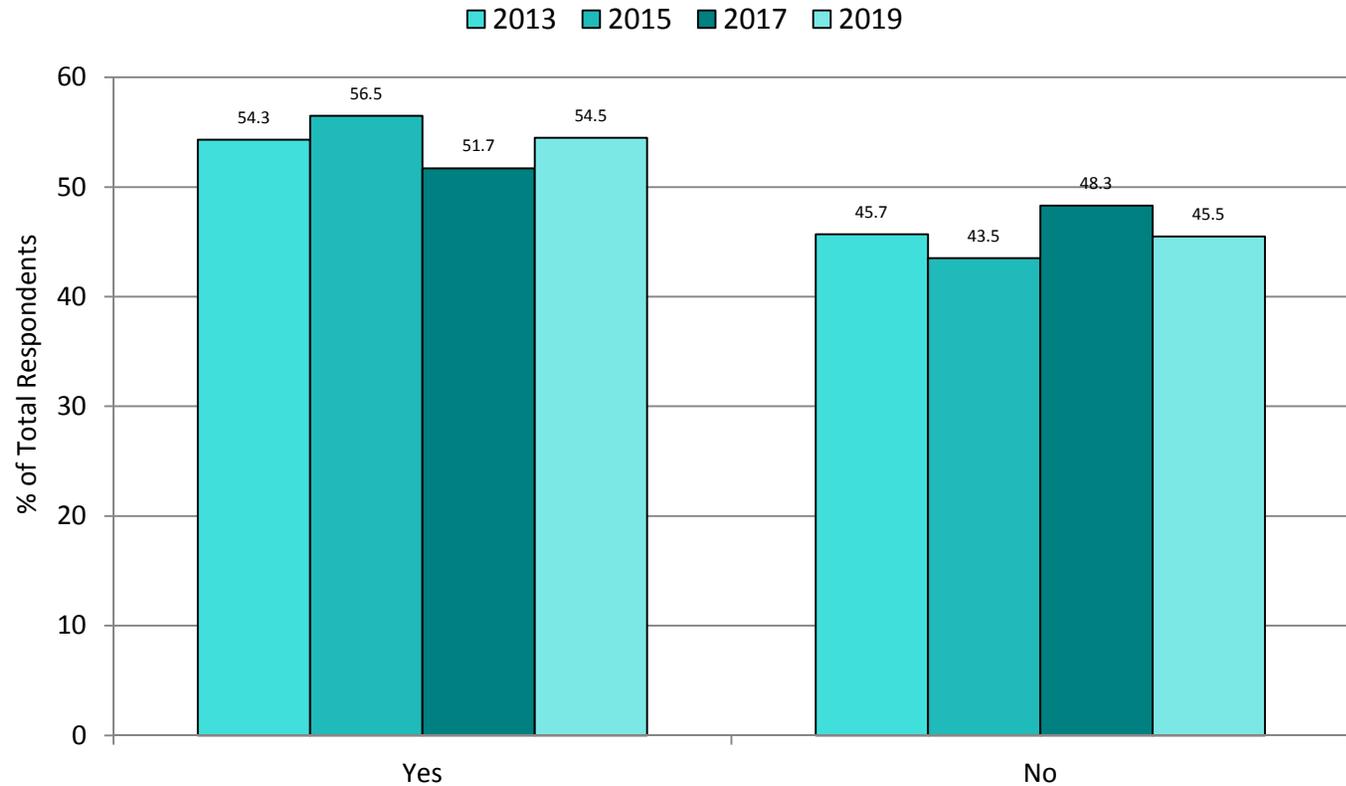


- Climate Change importance continued to increase from 2015 to 2019. This increase was driven primarily by East County (41.0% to 56.1%) and East City (60.9% to 66.9%). Increasing the tree canopy increased as well, driven mainly by those under 30 (15.1% to 47.9%), Males (32.5% to 47.3%) and East City residents (30.3% to 46.8%).

Q4 RESULTS – Waterway Use



Do you use the river, creeks and ponds for recreational purposes in Jefferson County, Kentucky?



- Usage of waterways remains fairly constant. Residents 25-34 (70.1%) continue to be the biggest recreational users, while those who are age 60+ (39.7%) use waterways the least. Also, residents in the Northeast County are using waterways more (25.4% to 54.3%).

Q5 RESULTS – Waterway Use



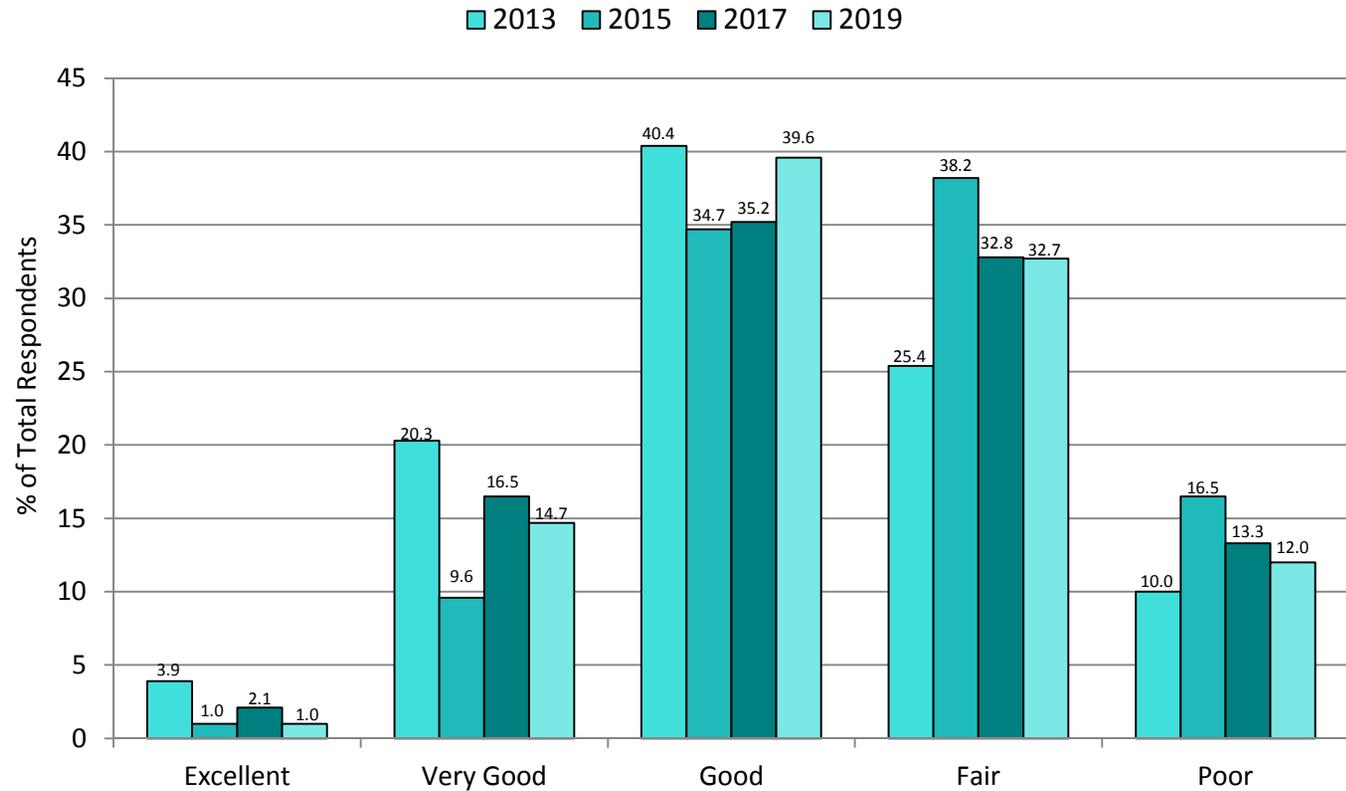
Why don't you use the river, creeks and ponds for recreational purposes? (Total Respondents, open-end)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Don't want to / no interest	21.6	8.2	10.3	14.4
Don't own a boat	15.0	12.4	22.3	10.5
Not an outdoor / water person	14.8	14.9	16.4	13.3
Pollution / contamination / unclean water	12.9	19.9	32.2	25.2
Don't fish	10.5	10.2	13.7	7.1
Go outside of Louisville / Jefferson County for this	8.1	6.1	2.7	5.8
Age / too old	6.8	8.9	6.6	4.6
Busy lifestyle / work too much	6.2	9.8	9.0	11.9
Not sure what's available	5.3	1.5	0.4	1.8
Don't swim	4.1	5.1	6.4	3.4
Disabled	3.6	8.1	6.0	8.2
Do not live by any	3.5	5.4	4.5	4.8

- Use of waterways for recreational purposes due to pollution/contamination remains the prohibiting factor. This is driven by those age 25-34 (45.4%) and residents in Downtown/West City (37.3%).



Q6 RESULTS – Overall Quality/Health of River, Creeks and Ponds

How would you rate the overall water quality or health of the river, creeks, and ponds in Jefferson County, Kentucky?



- Overall water quality/health ratings of Excellent/Very Good/Good remained about the same from 2017 to 2019. East City residents (56.2%) had the highest Fair/Poor ratings, increasing from 41.4% in 2017.

Q7 RESULTS – Overall Quality/Health of River, Creeks and Ponds



Why do you give that rating? (Total Respondents, open-end)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Lots of pollution / trash / debris / dirty	29.4	44.2	45.8	44.3
Visual observation / look of it	17.9	5.0	8.1	14.5
Lakes are ok – river is bad	7.8	0.7	2.7	3.9
Sewage / storm runoff	7.6	9.9	11.0	7.7
From what I read / hear	5.5	6.0	8.8	5.2
Clean	4.2	4.8	11.9	7.9
Well maintained	4.0	1.2	4.0	1.7
Always room for improvement	3.9	10.9	6.0	5.4
Haven't had any issues / problems	2.9	2.1	3.0	2.4
Conditions are improving	2.2	2.6	3.7	2.9
My perception / impression	2.0	2.4	2.8	2.9
All others	4.7	1.7	1.5	5.9
Don't know	13.7	0.8	2.2	4.4

- Those under 25 (70.1%), college grads (51.7%) and households with children under 6 (51.4%) were most likely to mention pollution as a reason for their rating.
- Those age 60+ (31.6%) and Northeast County residents (31.3%) mentioned pollution/trash the least

Q7 RESULTS – Overall Quality/Health of River, Creeks and Ponds



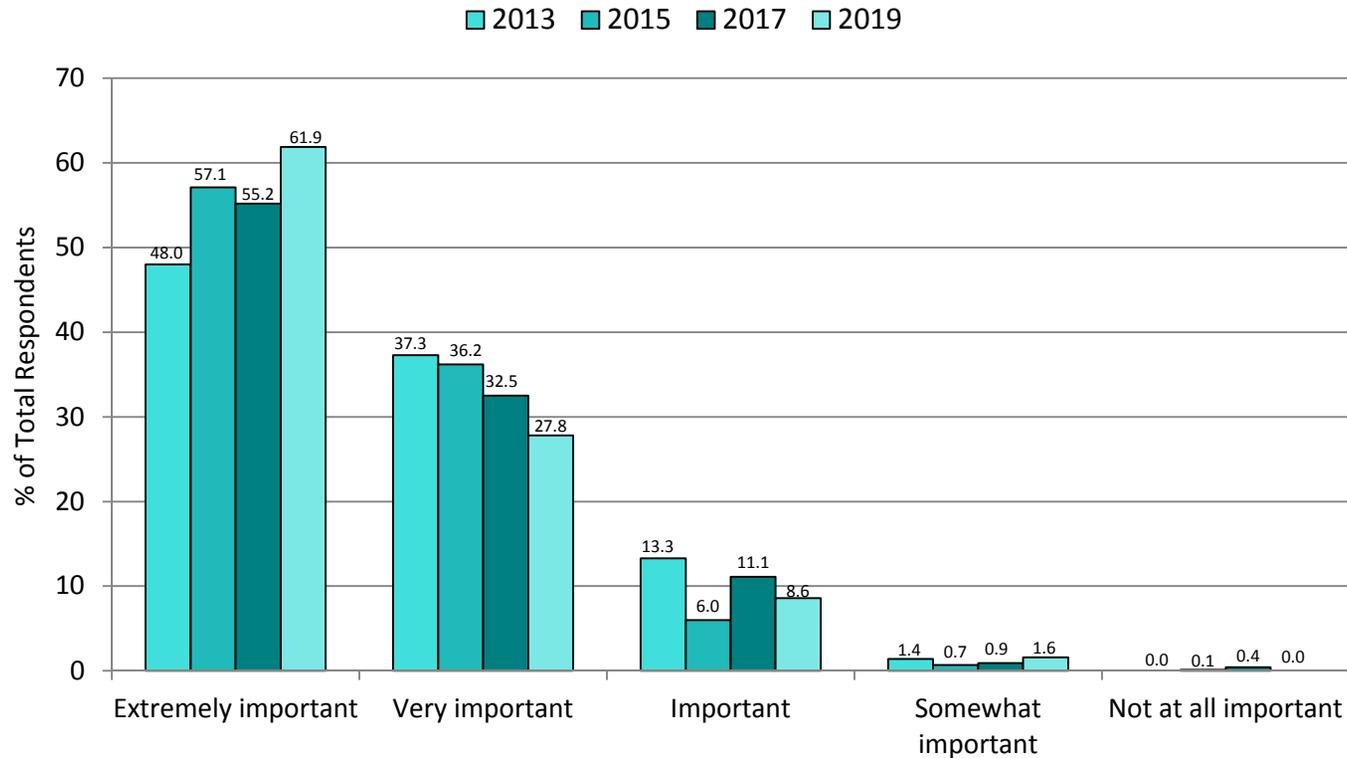
Why do you give that rating? [Those who rated Excellent or Very Good]	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Clean	11.7	26.3	47.6	32.1
Always room for improvement	4.0	15.7	3.1	1.2
Conditions are improving	3.6	14.9	8.5	4.0
Our drinking water is good	4.0	7.0	18.1	11.8
Good quality	3.3	9.3	10.5	11.4

Why do you give that rating? [Those who rated Fair or Poor]	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Lots of pollution / trash / debris / dirty	54.6	58.4	51.3	62.5
Sewer system overflow / rainwater runoff	13.5	15.1	17.8	10.1
Odors / smelly	3.4	11.6	13.6	1.7
Visual observation/look of it	19.0	6.6	11.3	13.3
Lack of upkeep	1.9	8.9	7.9	4.0

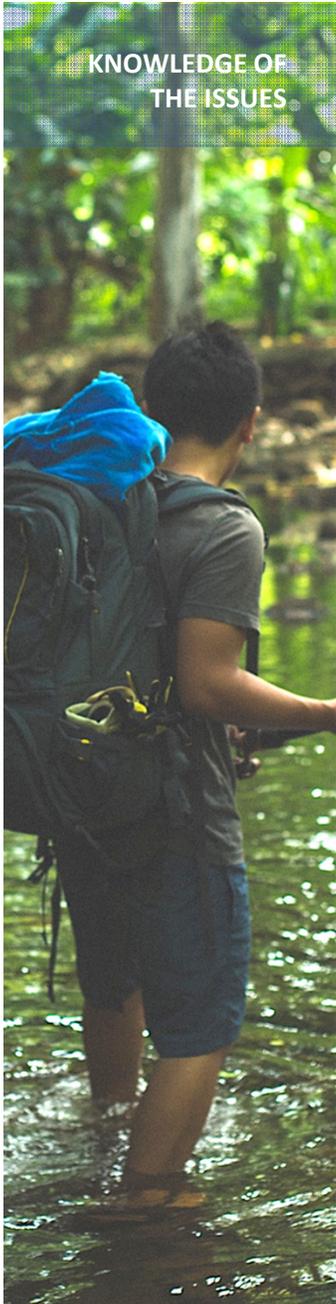


Q8 RESULTS – Importance of Clean River, Creeks and Ponds

How important is it to you that your community has clean rivers, creeks and ponds?

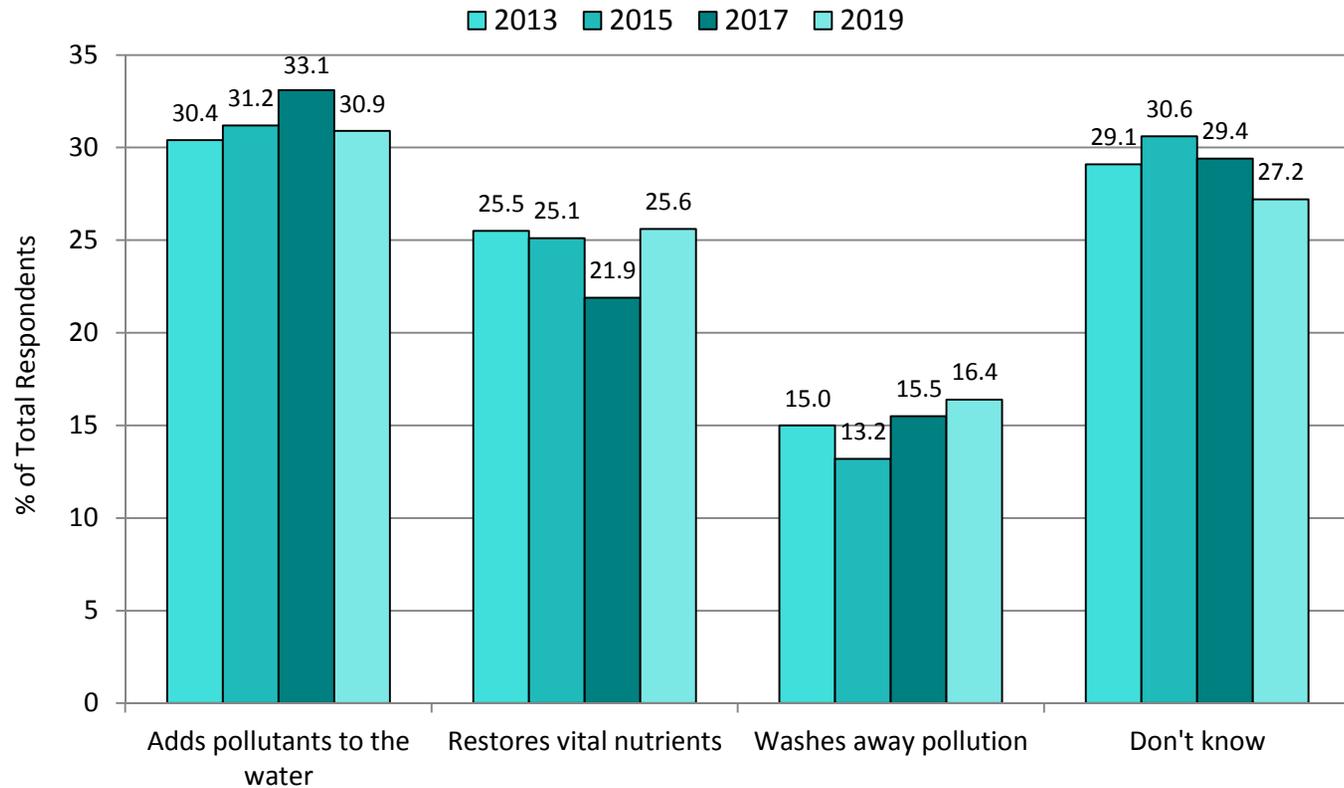


- As a whole, residents saying that it is extremely important that the community having clean rivers, creeks and ponds has increased over time.
- Those under 25 (77.1%), renters (69.7%) and females (64.2%) say that it is extremely important to have clean rivers, creeks and ponds.

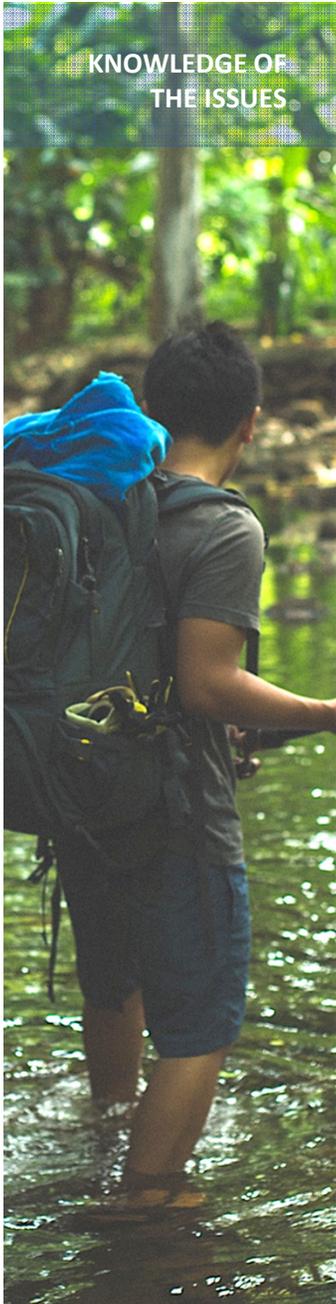


Q9 RESULTS – Effect of Rain on Quality of River, Creeks and Ponds

How does rain affect the water quality or health of our river, creeks and ponds? Please select one.

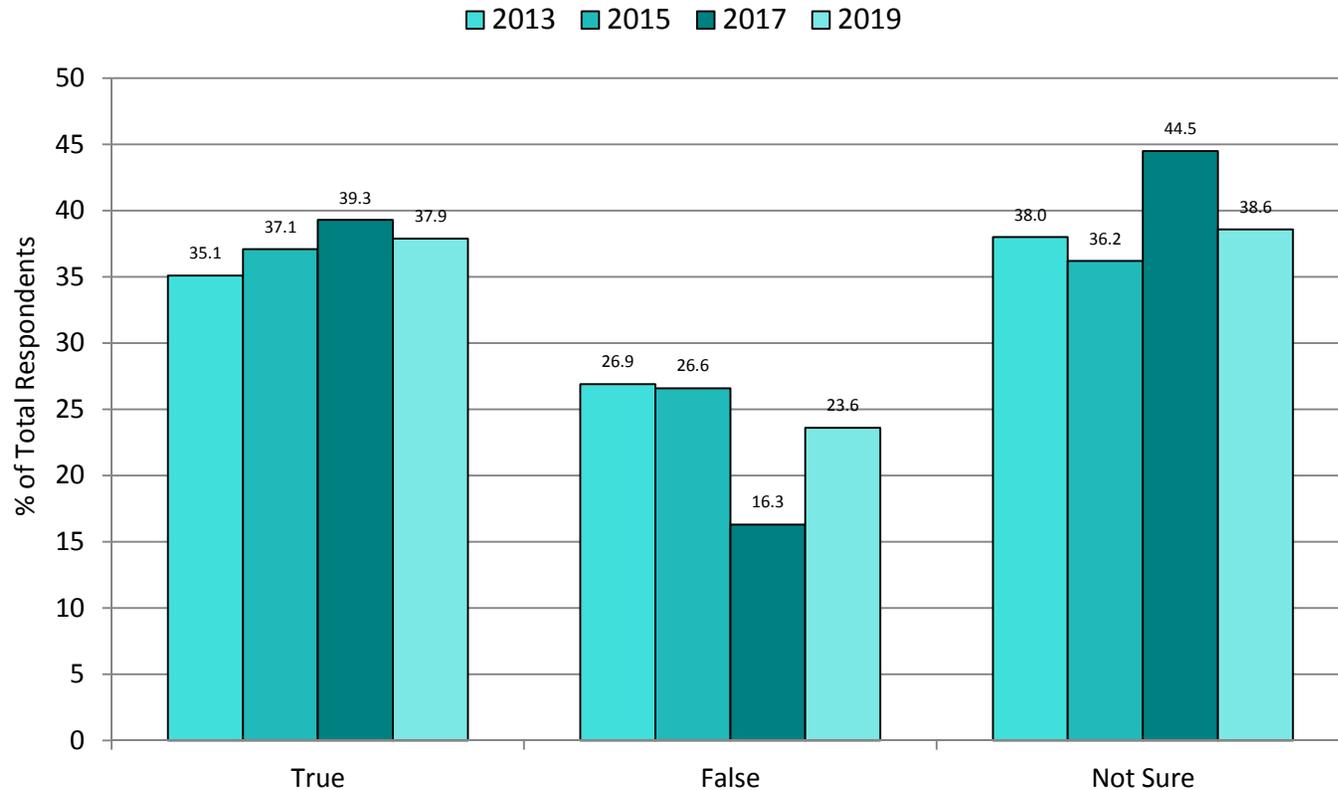


- Perceptions on how the rain adds vital nutrients to the water returned to previous levels. This increase was from residents in South County (43.5%) and those under 25 (42.2%).
- The proportion that don't know how rain affects water quality is declining.



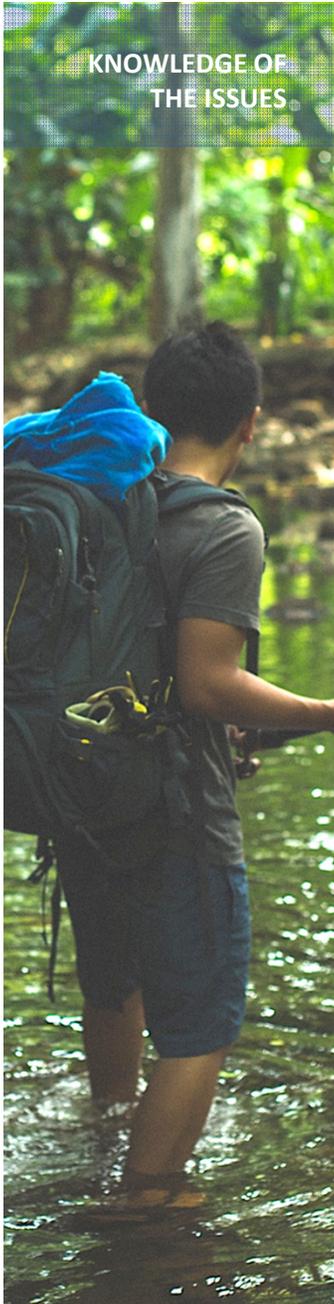
Q10 RESULTS – Post-Rain Pollution

After it rains, you should not use the local area river, creeks and ponds because they have become unsafe with increased levels of pollution and bacteria.



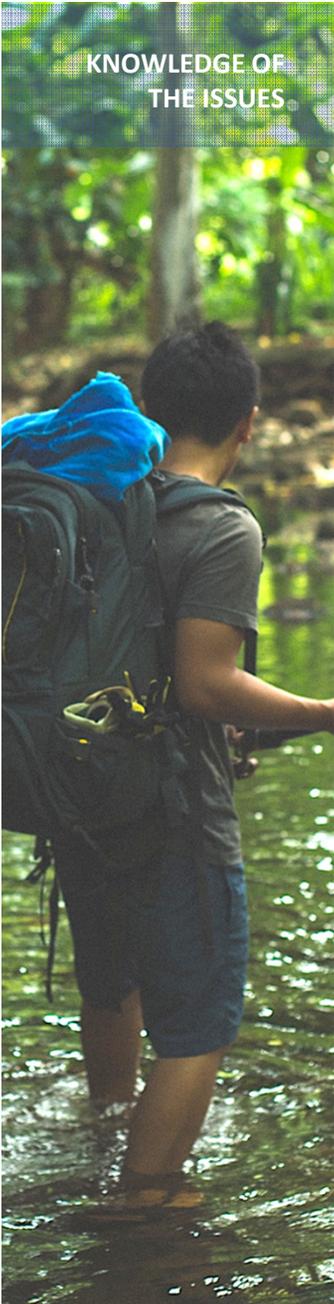
- Those under 30 (50.7%) and residents in the East City (47.7%) exhibited the strongest agreement.
- Those in the South County showed the strongest disagreement and drove the increase from 2017 to 2019 (15.0% to 34.2%).

Q11 RESULTS – Post-Rain Pollution



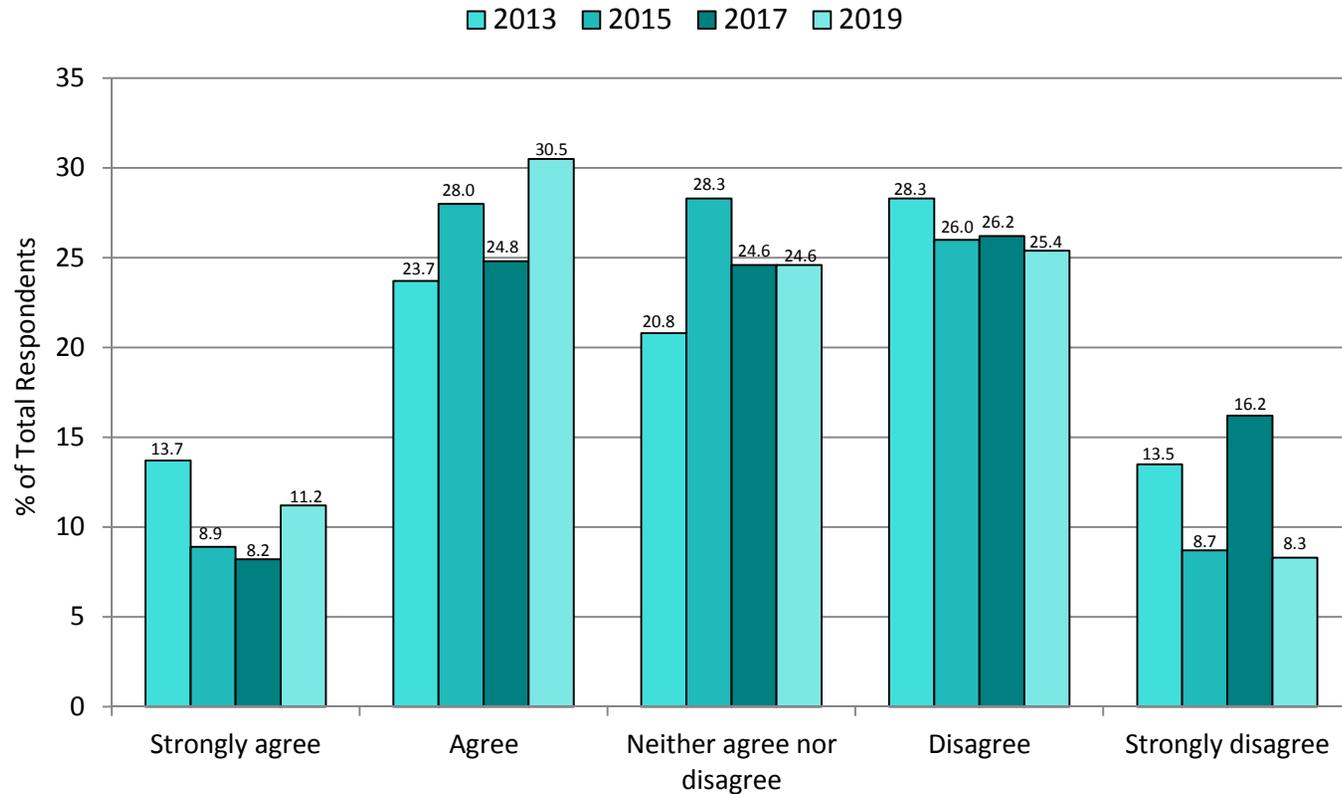
What do you think would cause the river, creeks and ponds to become polluted after a rain? (open-end)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Runoff / flooding	10.8	36.6	27.8	21.1
Trash / litter / debris getting washed into it	17.1	20.6	11.6	13.3
Fertilizers / pesticides / lawn sprays/chemical runoff	14.0	20.6	16.6	14.8
Ground pollution	12.5	17.2	2.7	8.7
Sewage overflow	10.5	12.6	14.6	10.6
Run-off from streets / roads / parking lots / cars	11.4	11.3	12.3	11.1
Air pollution	7.6	7.4	11.9	13.5
Don't know	12.0	4.6	5.5	7.2
Industrial waste	3.0	2.9	6.6	4.0
Acid rain / rain carries pollutants	10.9	1.6	9.0	5.8
Run-off from farms / fields / agriculture	4.2	0.7	8.7	5.2
All others	7.8	0.2	1.0	3.3

Those under 30 (49.5%) and Downtown/West City residents (31.1%) are most likely to believe runoff / flooding causes waterways to become polluted.

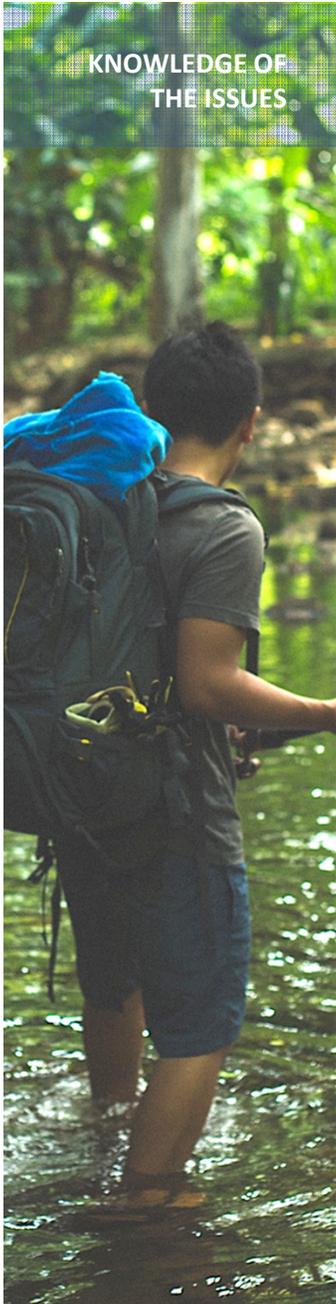


Q12a RESULTS – Pollution, Runoff, & Sewer Overflow

Water that flows through the street gutters/storm drains goes through a treatment facility before being released into our waterways.

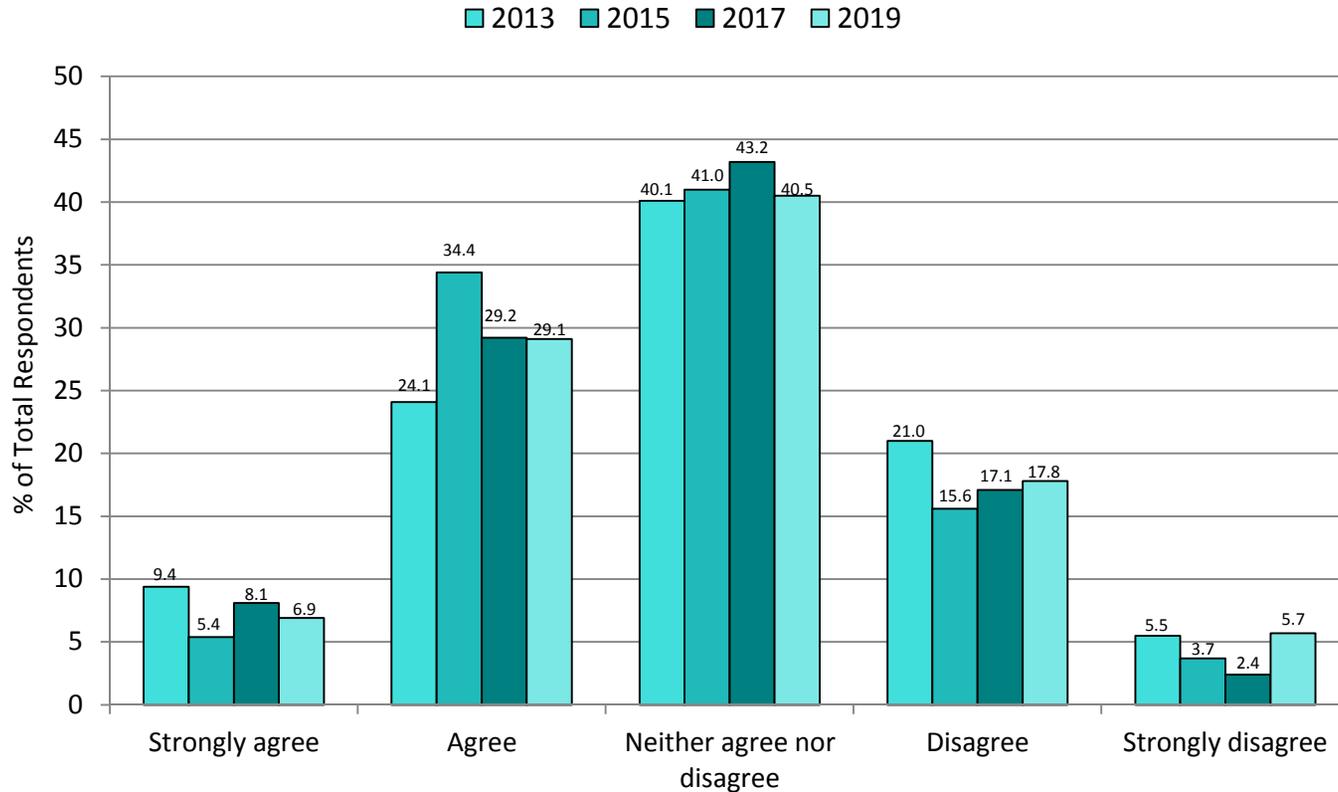


- Those who Agree/Strongly Agree that storm water is treated increased from 2017 to 2019 (33.0% to 41.7%).
- This increase is driven by dog non-owners (29.2% to 43.2%), along with residents in Northeast County (16.5% to 35.9%) and East City (30.8% to 45.6%).

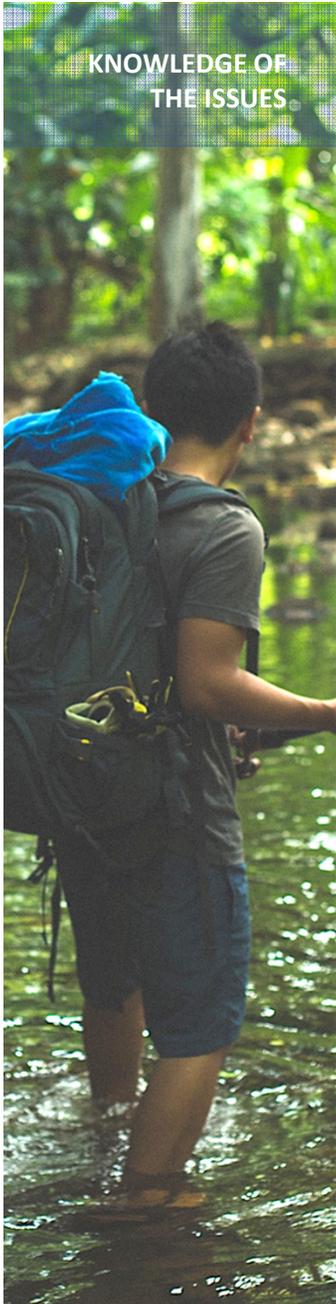


Q12b RESULTS – Pollution, Runoff, & Sewer Overflow

Rainwater runoff is a leading cause of water pollution in my area.

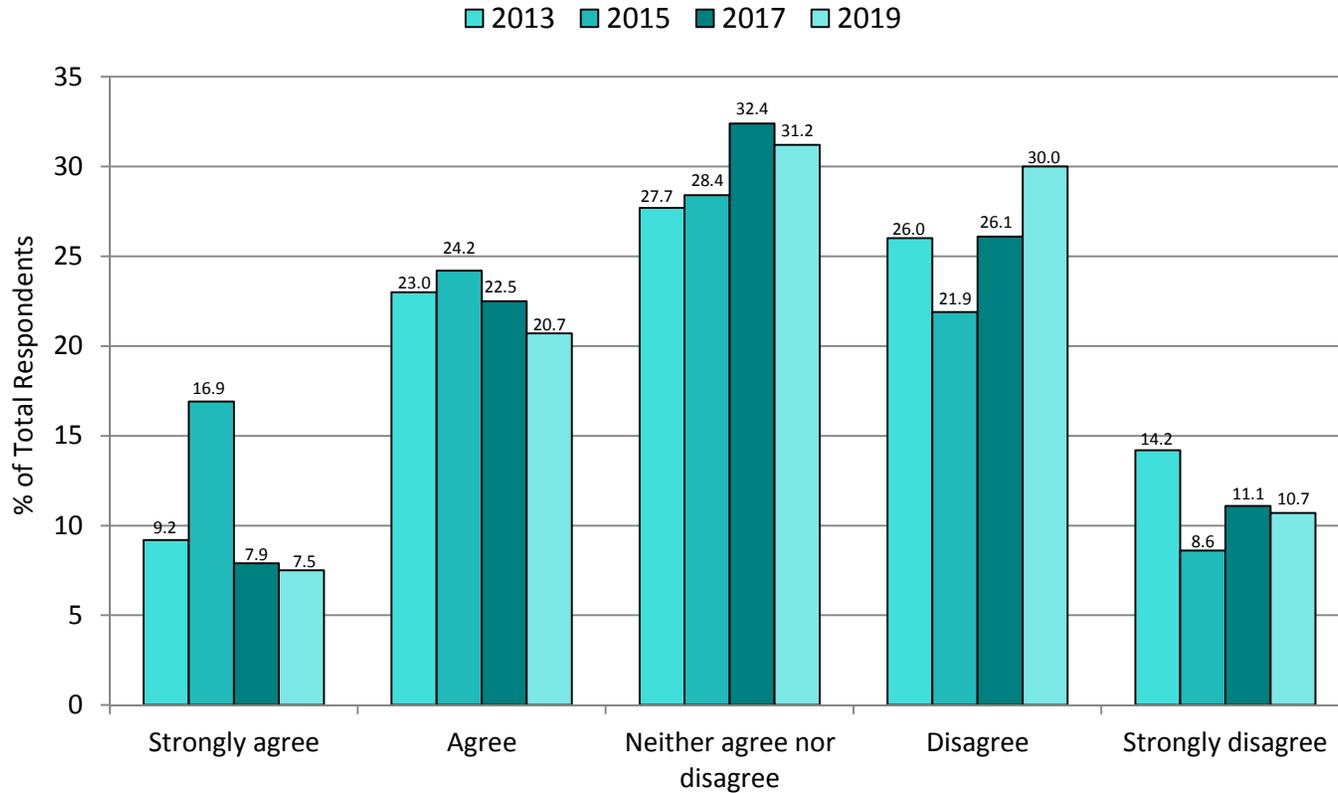


- Those under 30 are strongest in overall agreement (46.2% Agree/Strongly Agree) that rainwater runoff causes pollution, followed by Downtown/West City (45.0%).
- Residents in South County (30.2%) and those over 60 (29.1%) are highest in overall disagreement (Disagree/Strongly Disagree) with this statement.

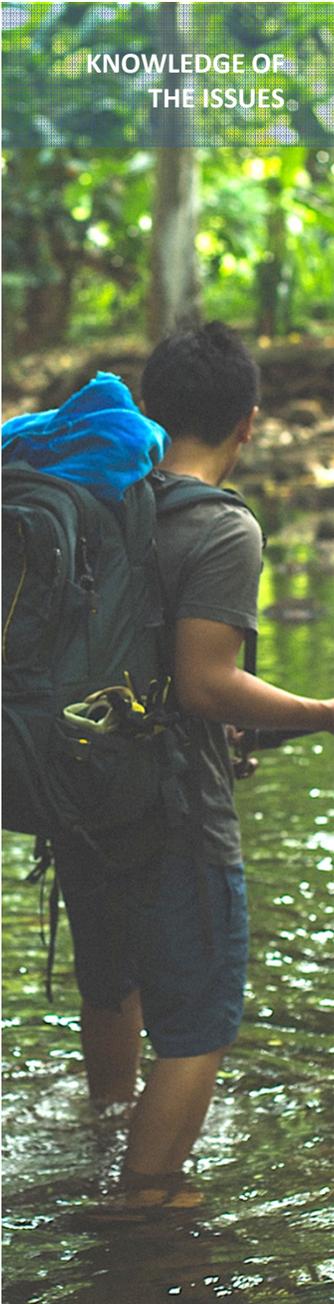


Q12c RESULTS – Pollution, Runoff, & Sewer Overflow

Sewer system overflow occurs frequently in my community.

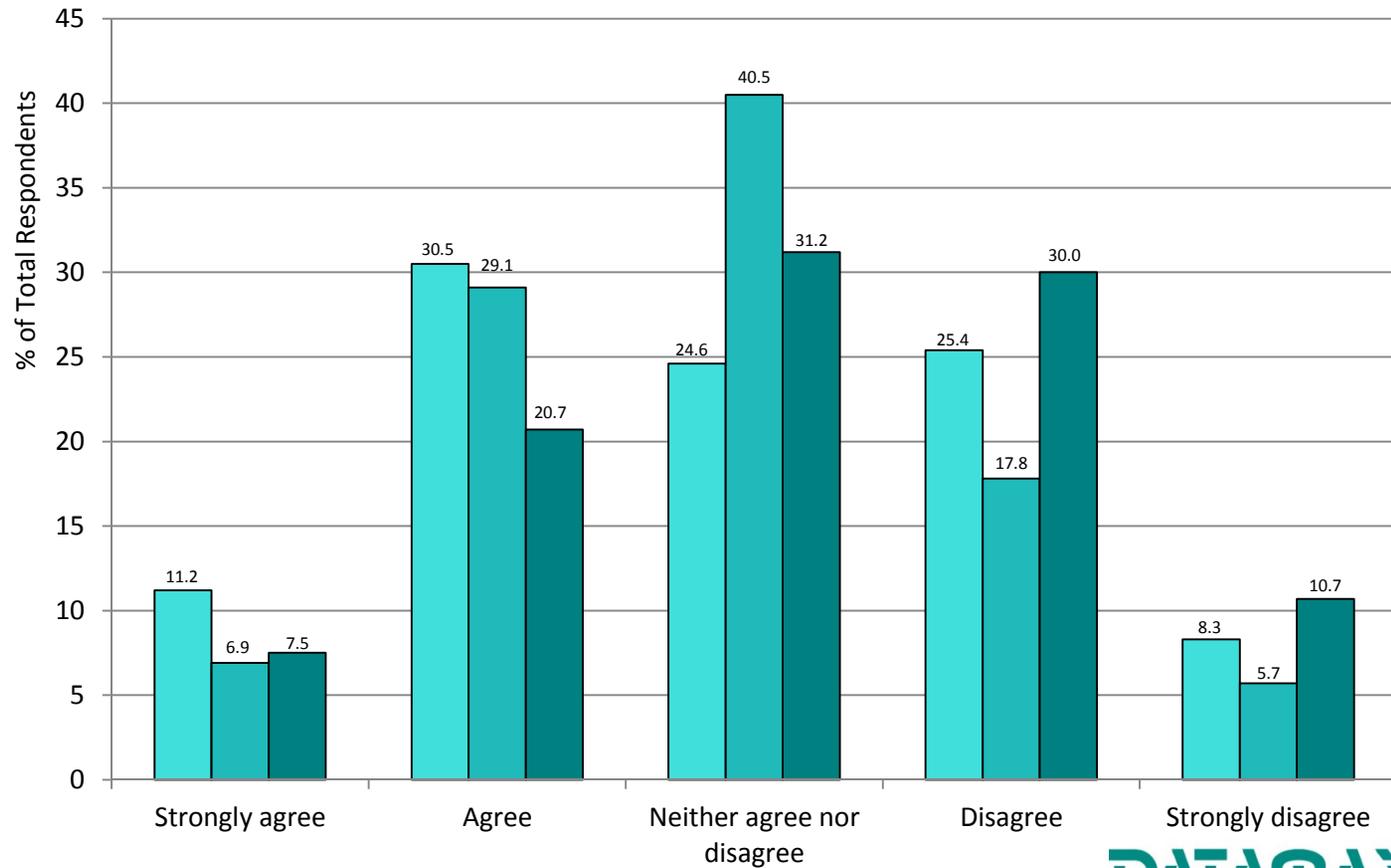


- Those who Strongly Agree that sewer system overflow occurs frequently remained low in 2019. However, those who Agree/Strongly Agree about frequent overflows are located in Downtown/West City (47.9%), renters (34.4%) and age 25-34 (39.1%).
- Southwest residents (50.4%) Disagree/Strongly Disagree the most.



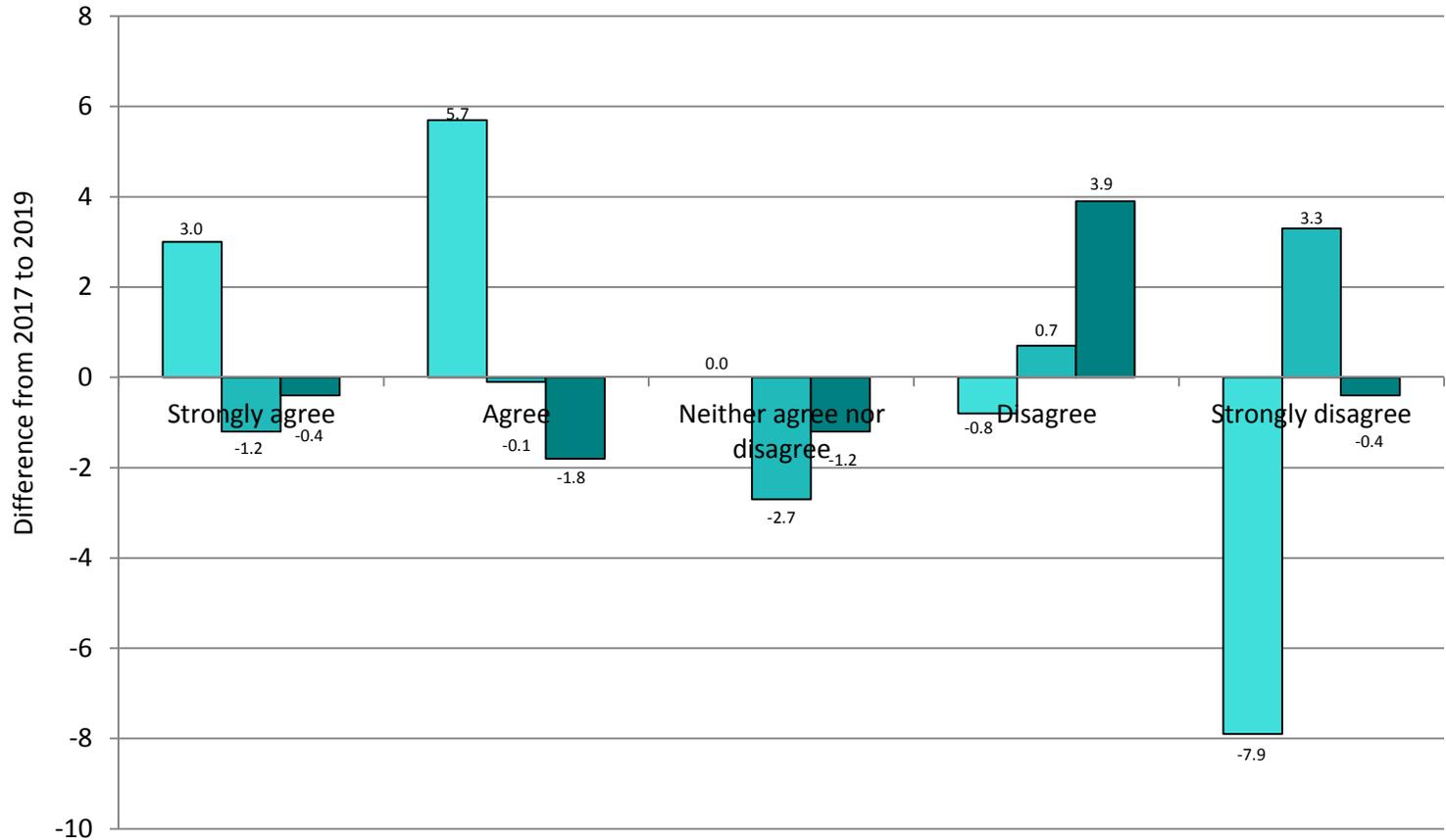
Q12 TOTAL RESULTS BY ISSUE – Pollution, Runoff, & Sewer Overflow

- Water that flows through street gutters and storm drains goes through a treatment facility before being released in our waterways.
- Rainwater runoff is a leading cause of water pollution in my area.
- Sewer system overflow occurs frequently in my community.

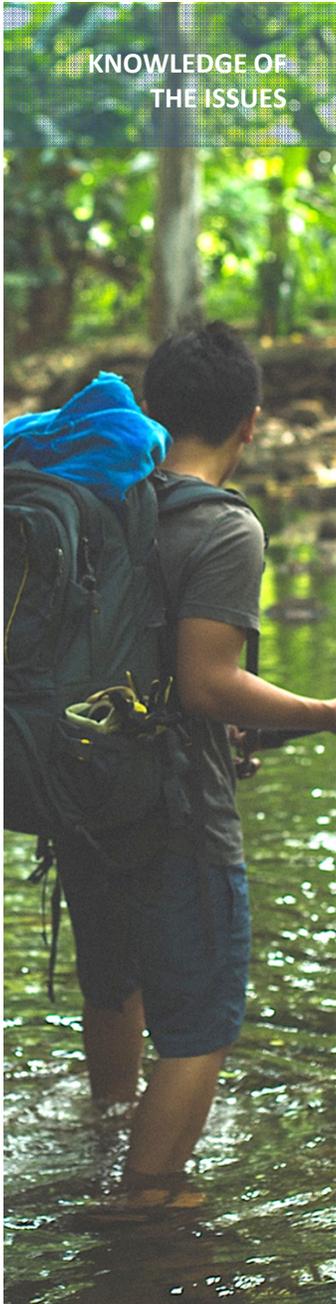




Q12 TOTAL RESULTS BY ISSUE – Pollution, Runoff, & Sewer Overflow

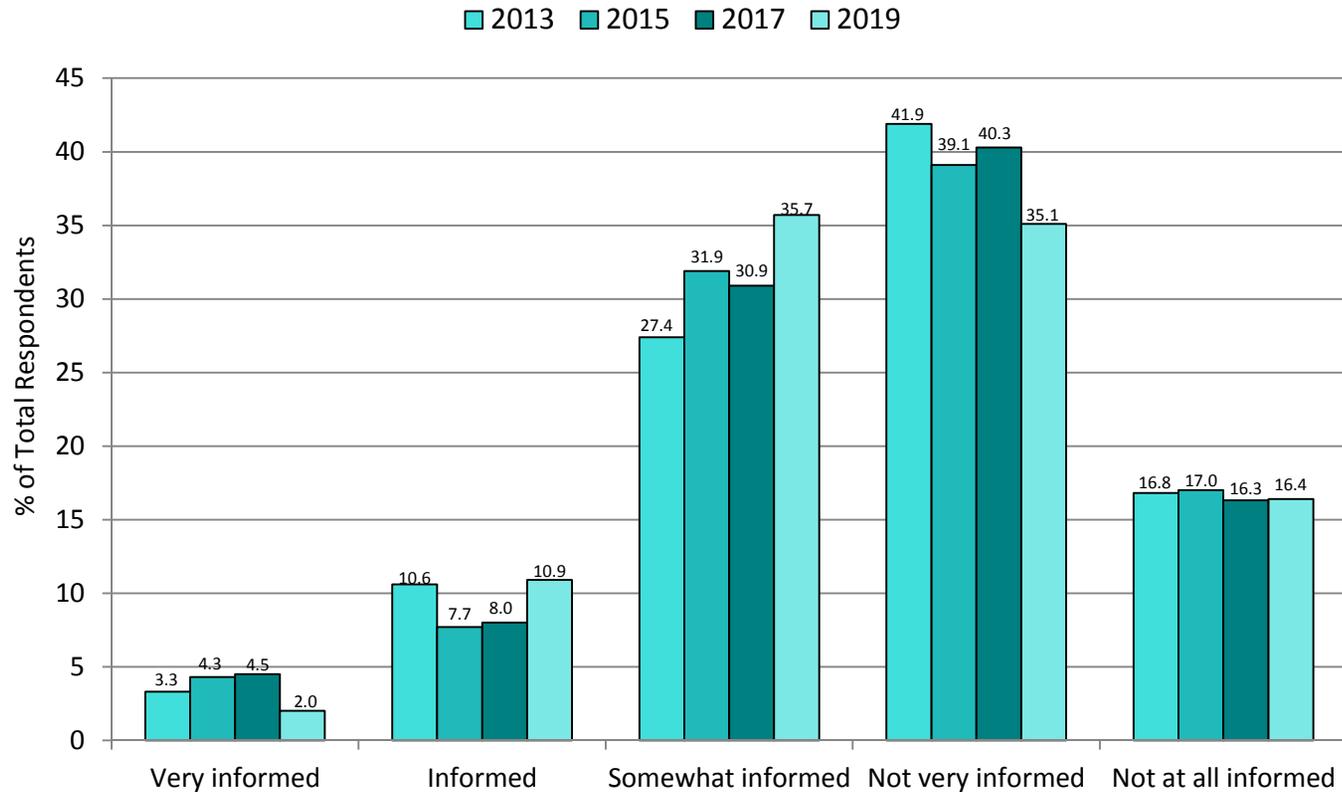


- Water that flows through street gutters and storm drains goes through a treatment facility before being released in our waterways.
- Rainwater runoff is a leading cause of water pollution in my area.
- Sewer system overflow occurs frequently in my community.

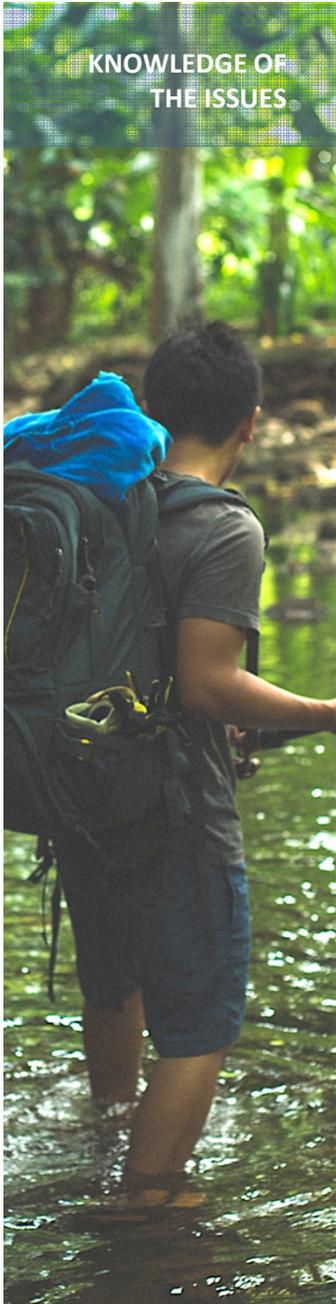


Q13 RESULTS – Causes of Rainwater Runoff Pollution

How informed do you feel about the causes of rainwater runoff pollution in your area?

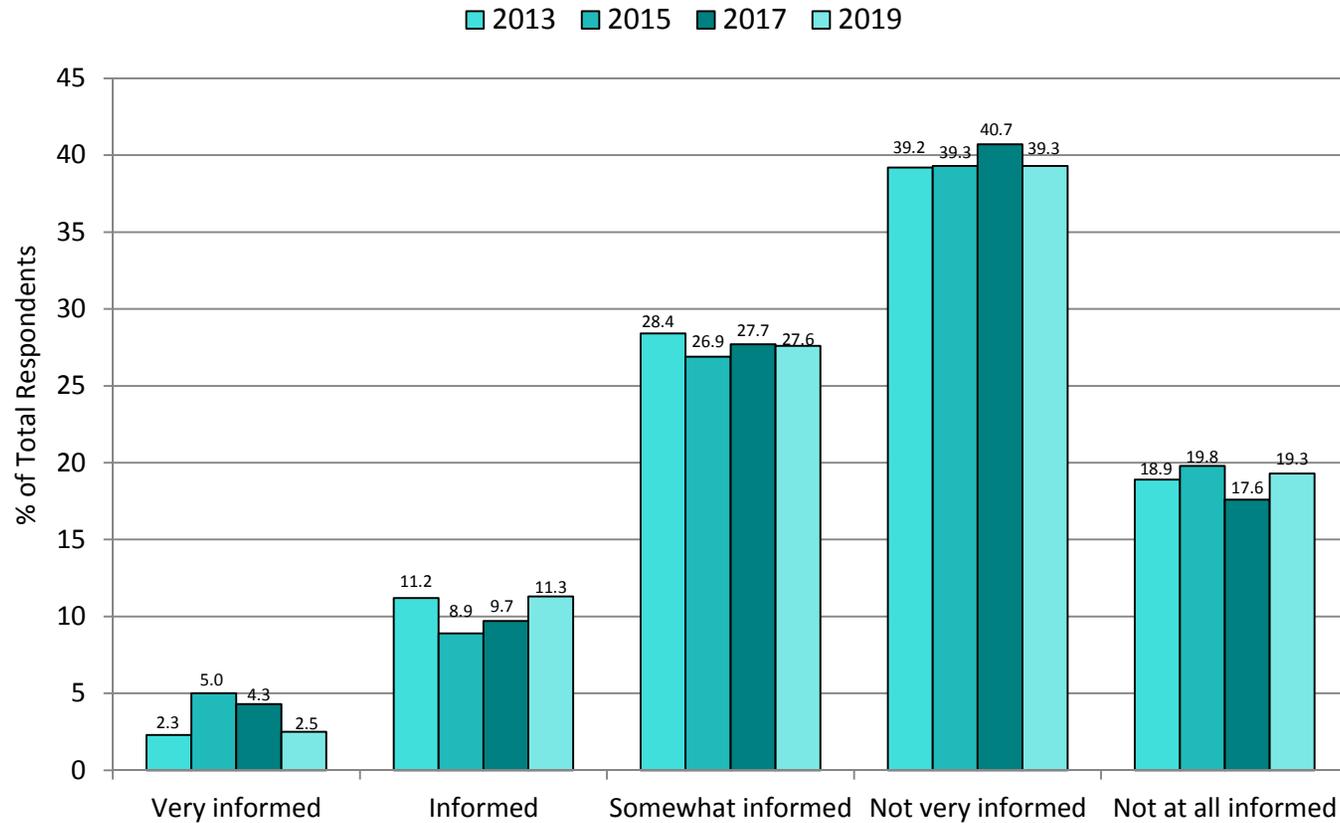


- Those over 60 feel most informed (17.3% very informed/informed), while households with children under 18 feel they are not very informed/not at all informed (62.4%).
- Southwest residents feel most uninformed (67.6% not very informed/not at all informed).



Q14 RESULTS – Causes of Sewer System Overflow

How informed do you feel about the causes of sewer system overflow in your area?

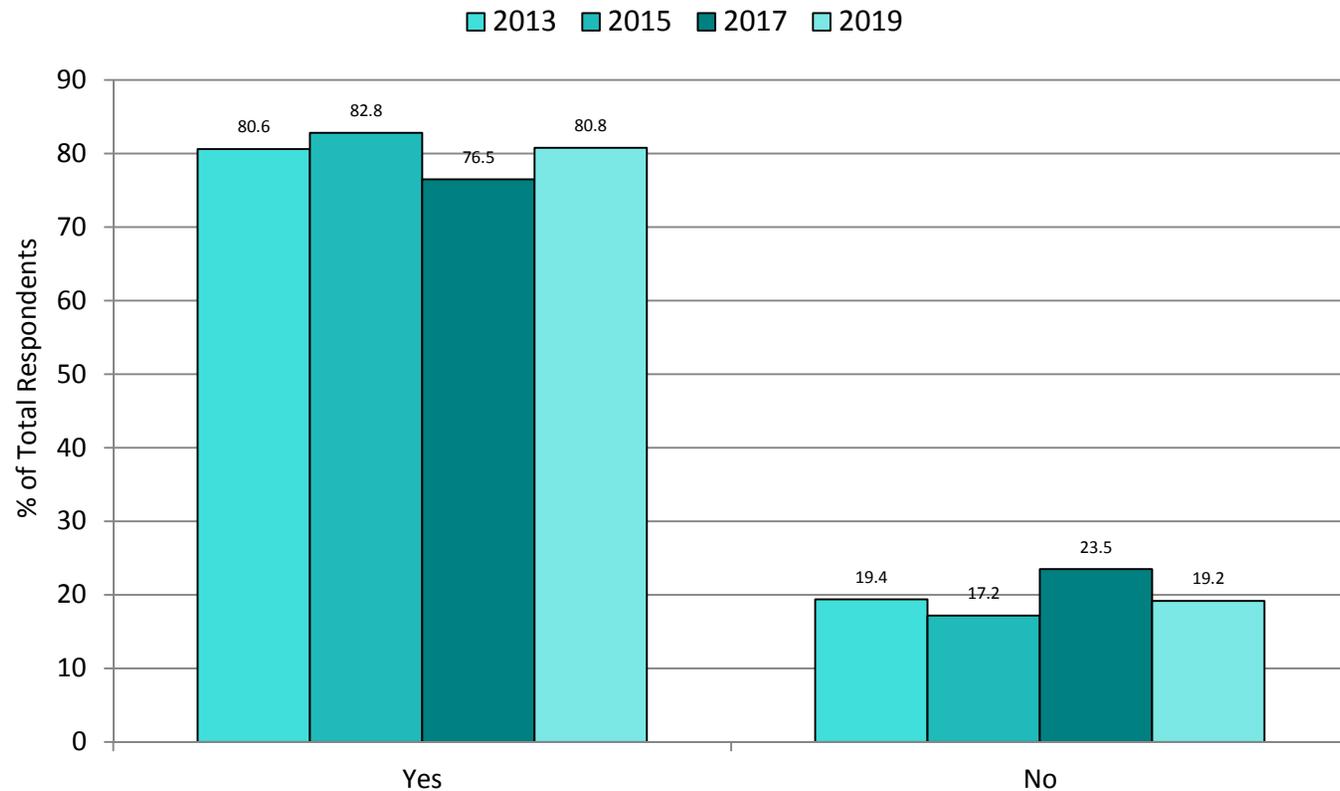


- As with rainwater runoff pollution, Southwest residents remain not very informed/not at all informed (68.8%).
- Age 60+ feel informed/very informed (20.9%) vs those under 30 (5.7%).



Q15 RESULTS – Actions for Pollution Reduction

Do you think there are actions you can take to reduce water pollution in the river, creeks and ponds?

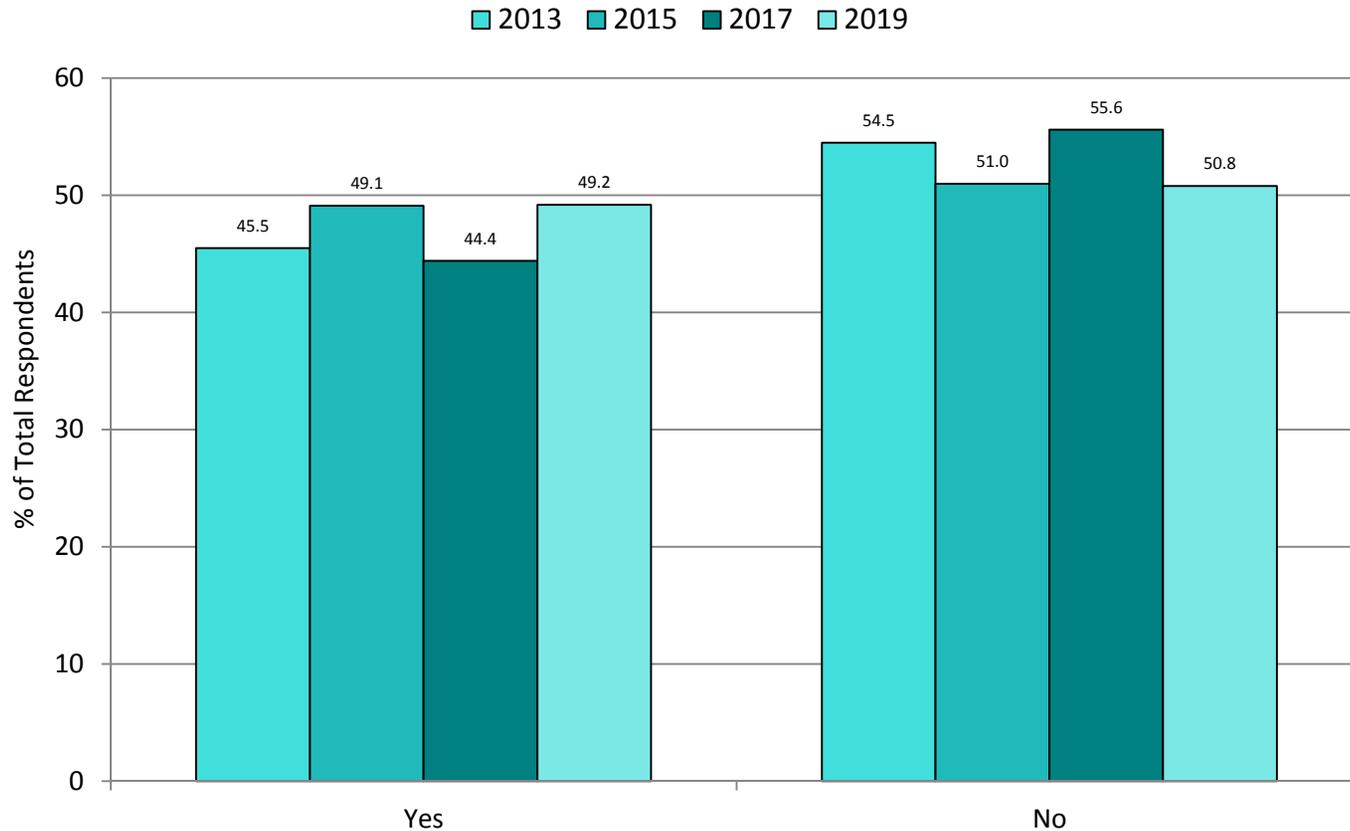


- Most favorable stance on taking action: Females (83.8%) and those under 30 (87.8%).
- Seniors 65+ (34.3%) and Southwest (27.5%) believe strongest that no actions can be taken.



Q16 RESULTS – Actions for Pollution Reduction

Rainwater runoff and sewer system overflow contribute to water pollution. Do you currently take actions to reduce water pollution?



Those not currently taking action are High School and less educated (68.8%), use fertilizer (57.0%) and those 50-59 (56.4%).



Q17 RESULTS – Actions for Pollution Reduction (Total)

What actions do you currently take to reduce water pollution? (open-end, asked if “yes” to #16)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Pickup trash / litter	2.9	24.1	4.9	7.4
Careful about what I pour into ground/down drain/dispose	28.0	17.9	10.6	10.9
Don't use chemicals on lawn	16.4	16.9	29.7	20.8
By not littering/polluting/using trash cans	27.2	13.5	26.2	40.6
Clean up sewer/street drains	7.4	12.5	10.0	5.0
Recycling	8.6	10.2	4.7	5.7
Don't wash clothes/use dishwasher during rain	6.4	9.9	3.0	2.7
Conserve water	5.2	5.8	6.5	4.6
Not flushing medicines	3.2	4.7	4.9	6.6
Redirecting rain water/gutters to yard	4.3	3.3	4.0	2.6
Rain barrels	4.7	2.9	5.4	1.5
Use green products	3.7	2.4	2.2	8.9
Maintain car/vehicle	3.3	2.1	3.2	3.6
Disconnected downspouts	3.2	2.1	4.1	4.2



Q17 RESULTS – Actions for Pollution Reduction by Age

What actions do you currently take to reduce water pollution? (open-end, asked if “yes” to #16)	<25	25-34	35-44	45-54	55-64	65+
Pick up trash/litter	-	10.6	15.7	3.6	10.9	6.7
Careful about what I pour into ground/down drain/dispose	-	16.2	18.7	7.3	15.8	10.2
Don't use chemicals on lawn	29.3	6.1	11.2	22.0	21.5	31.2
By not littering/polluting/using trash cans	29.3	52.2	29.9	50.9	23.9	31.7
Clean up sewer/street drains	-	5.7	5.4	7.2	6.1	5.4
Recycling	-	3.5	13.7	4.4	9.6	5.9
Don't wash clothes/use dishwasher during rain	-	3.5	2.5	2.9	3.3	3.8
Clean up pet waste	-	-	1.9	3.6	1.6	4.2
Conserve water	-	6.1	1.9	6.3	10.6	3.4
Not flushing medicines	-	-	0.6	1.4	2.7	2.0
Don't put grease down drain	-	-	-	--	-	2.5
Don't dump anything into sewers	-	-	0.6	2.6	4.1	1.9



Q17 RESULTS – Actions for Pollution Reduction by ZIP Area

What actions do you currently take to reduce water pollution? (open-end, asked if “yes” to #16)	Downtown / West City	South West	East City	South Co.	North-east Co.	East Co.
Pick up trash/litter	4.0	3.7	9.5	7.0	8.5	8.8
Careful about what I pour into ground/down drain/dispose	-	17.1	13.8	9.7	9.4	17.0
Don't use chemicals on lawn	1.6	6.8	18.9	24.6	34.2	31.6
By not littering/polluting/using trash cans	35.9	44.0	36.3	56.1	40.9	29.2
Clean up sewer/street drains	8.1	5.8	3.1	3.3	4.9	6.5
Recycling	5.8	3.1	4.2	6.0	12.6	4.1
Don't wash clothes/use dishwasher during rain	1.6	6.4	7.4	0.6	0.7	-
Clean up pet waste	1.3	-	1.0	3.3	5.0	0.7
Conserve water	1.0	4.9	4.5	7.8	6.3	2.9
Not flushing medicines	-	-	1.3	12.1	-	18.0
Don't put grease down drain	0.5	-	0.4	0.4	-	0.9
Don't dump anything into sewers	2.3	2.9	5.7	0.3	3.7	2.1



Q18 RESULTS – Actions for Pollution Reduction

Do you think any of these actions would increase the amount of pollution from rainwater runoff? (Select all that apply)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Improperly disposing hazardous waste, such as paint and motor oil	94.3	97.7	99.3	97.1
Putting trash in the street gutter	93.1	87.0	93.0	92.1
Allowing fluids to leak from cars and trucks	91.3	63.3	69.0	93.8
Using non environmentally friendly lawn chemicals	87.3	92.3	93.2	89.3
Leaving pet waste on the ground	71.1	69.3	76.9	75.4
Washing your car in the driveway or street	55.4	56.2	50.2	56.3

- Respondents’ perception that allowing fluids to leak from cars and trucks would increase rainwater runoff pollution increased significantly from 2017 to 2019.
- The rise in leaking car/truck fluids is driven by all demographic/geographic groups.
- However, those with High School or less education believe least that leaking fluids increases pollution (80.6%).

Q19 RESULTS – Actions for Pollution Reduction



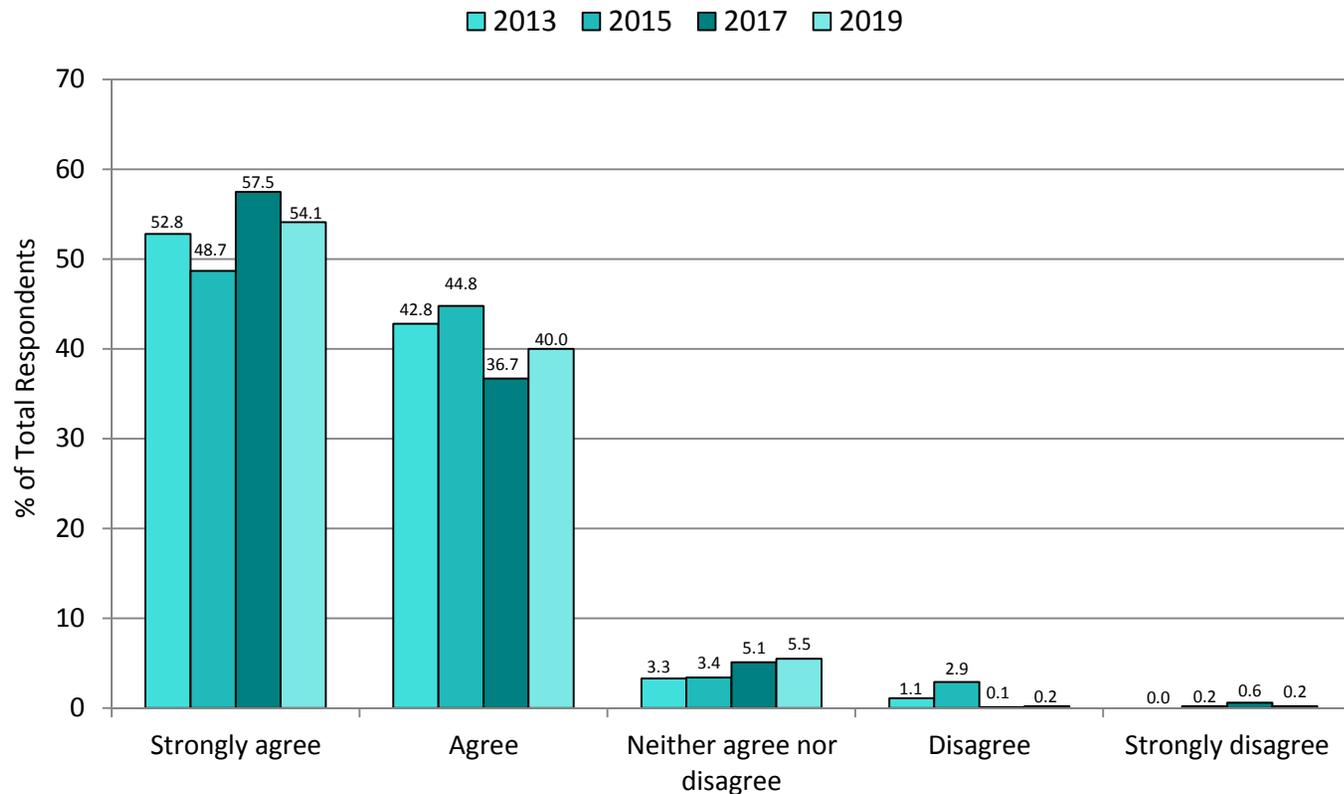
Do you think any of these actions cause sewer system overflow? (Select all that apply)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Pouring fats, oils, greases and food particles down the sink (FOG)	84.8	78.1	83.3	85.8
Flushing diaper wipes and other wet wipes down the toilet	84.6	83.4	92.9	93.0
Putting lawn grass clippings and leaves in the street gutter	82.2	80.1	82.5	83.3
Flushing hair down the toilet	64.4	61.5	69.7	67.5
Connecting the groundwater sump pump to the basement sewer connection	56.1	51.6	49.9	53.5
Flushing dental floss down the toilet	54.3	52.6	70.1	65.3
Using water-using appliances, such as a dishwasher or clothes washer, when it is raining	36.4	36.4	38.4	39.8

- Increases in flushing wipes, dental floss, and hair down the toilet are maintained in 2019.
- South County (90.8%) and East County (90.3%) residents are most likely to associate pouring FOGs down the drain with sewer system overflow. Southwest residents (73.5%) are less likely to make that association.



Q20(a) RESULTS – Water Quality & Health of River, Creeks and Ponds

We can all do our part to reduce the effects of water pollution.

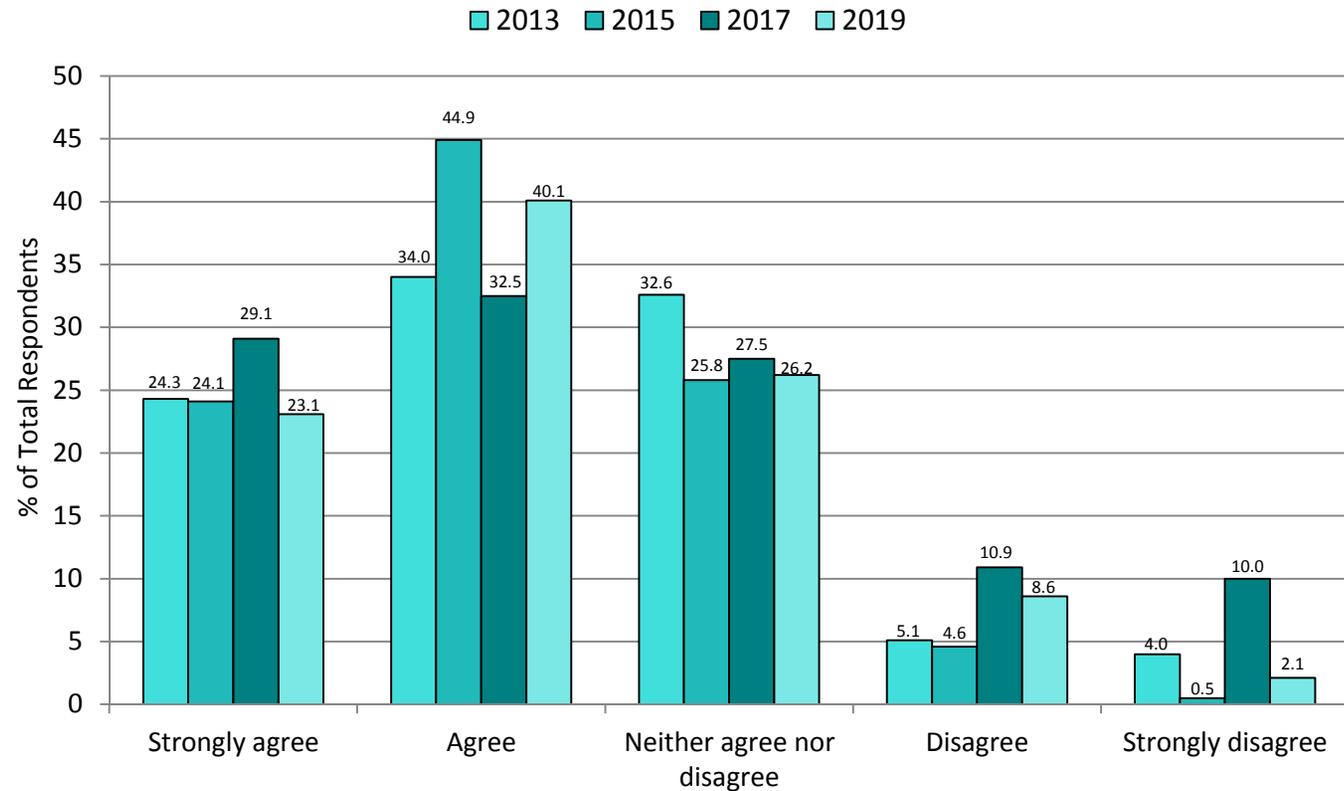


- Females continue to have stronger agreement (58.3%) than males (49.4%) about doing their part to reduce pollution.
- Age 40-49 (66.8%), renters (63.7%) and Northeast County (62.9%) residents also account for stronger agreement.



Q20(b) RESULTS – Water Quality & Health of River, Creeks and Ponds

I am personally responsible for reducing rainwater runoff pollution and sewer system overflow.

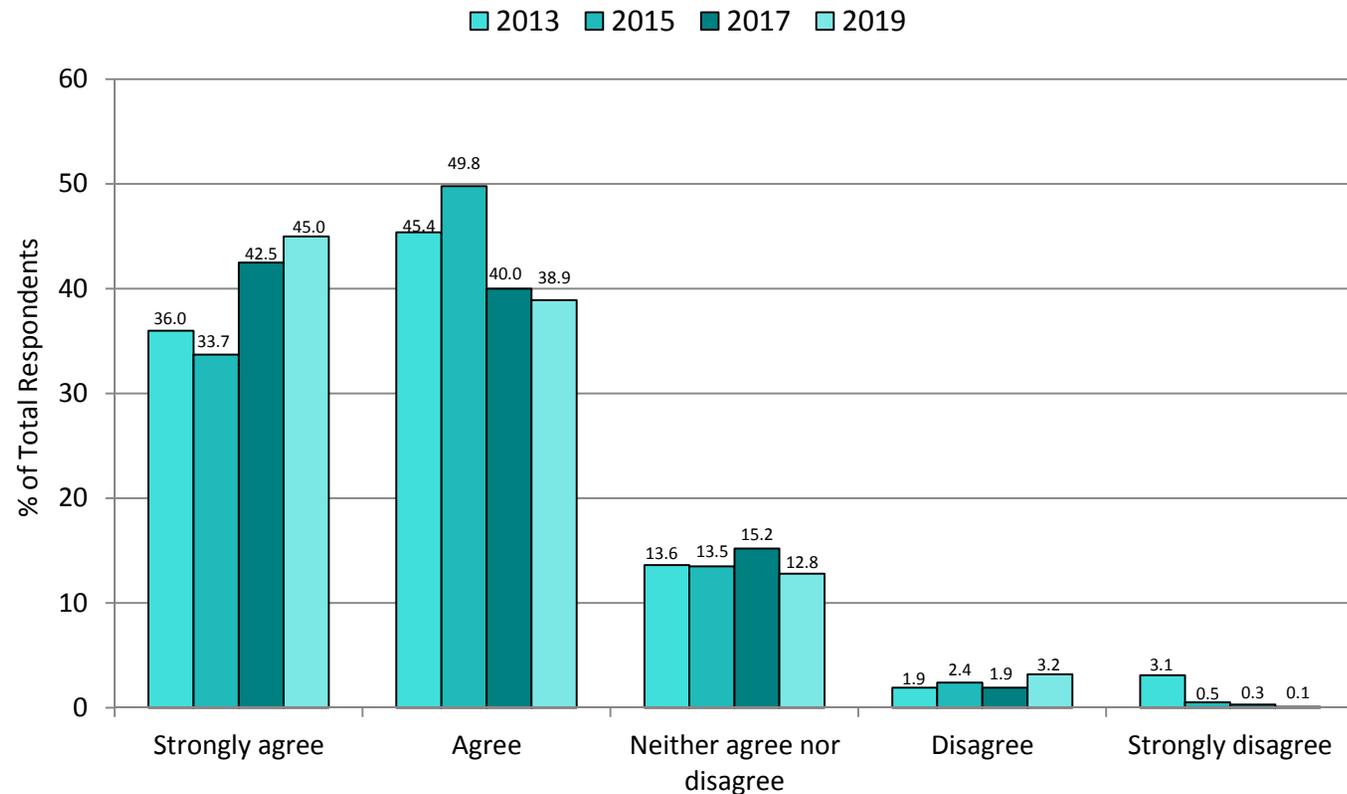


- The shift from Strongly Agree to Agree responses was driven by Males (30.1% to 45.2% Agree) and age 50-59 (31.3% to 48.3% Agree).
- Age 40-49 have the strongest agreement (35.4% Strongly Agree).



Q20(c) RESULTS – Water Quality & Health of River, Creeks and Ponds

Local governments, businesses and industries are responsible for reducing rainwater runoff and sewer system overflow.

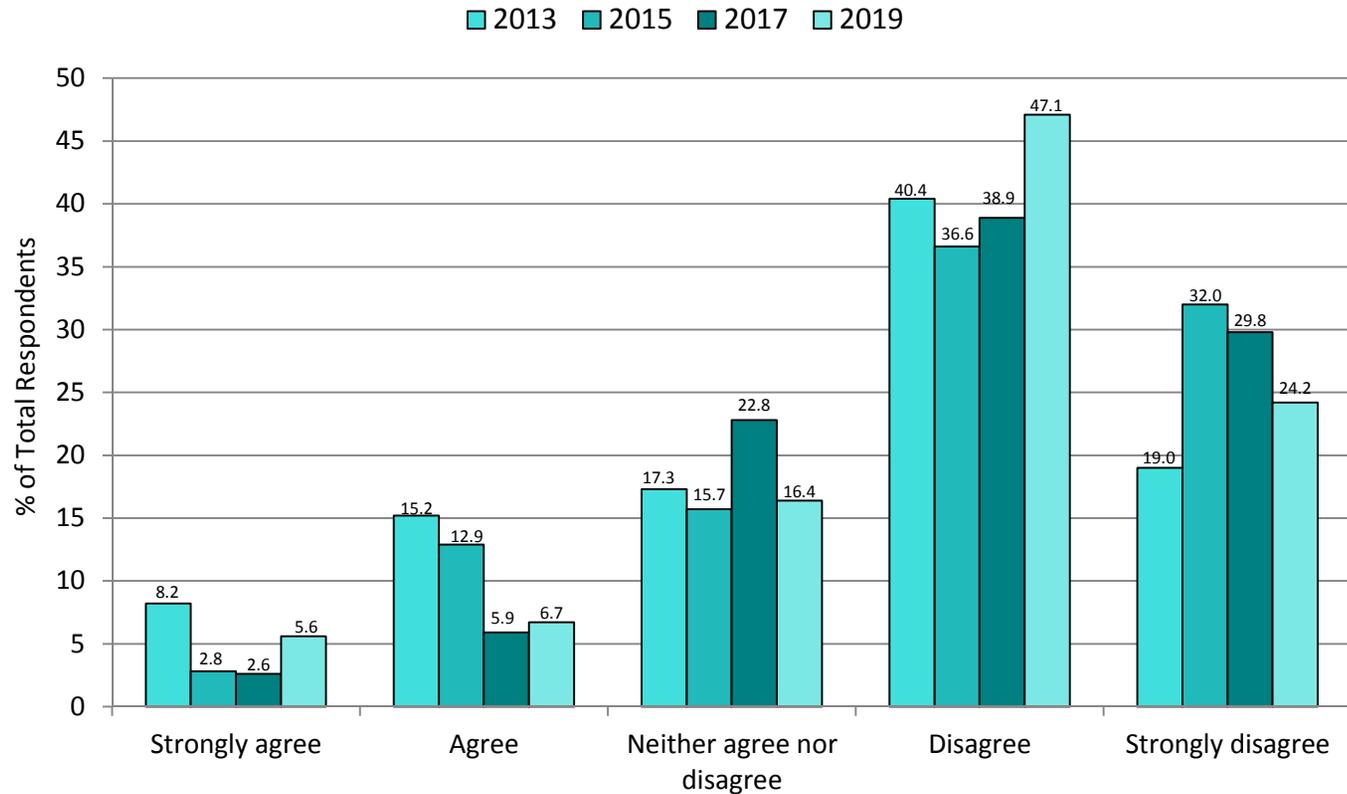


- Strongly agree perception regarding commercial entities being responsible for reducing overflow continues to increase from 2015 to 2019. This increase was driven by those under 25 (54.3%) and East City residents (52.4%) who strongly agreed.
- Those with High School had the lowest strongly agree response (15.7%).



Q20(d) RESULTS – Water Quality & Health of River, Creeks and Ponds

I would only do my part to reduce water pollution if everyone else did as well.

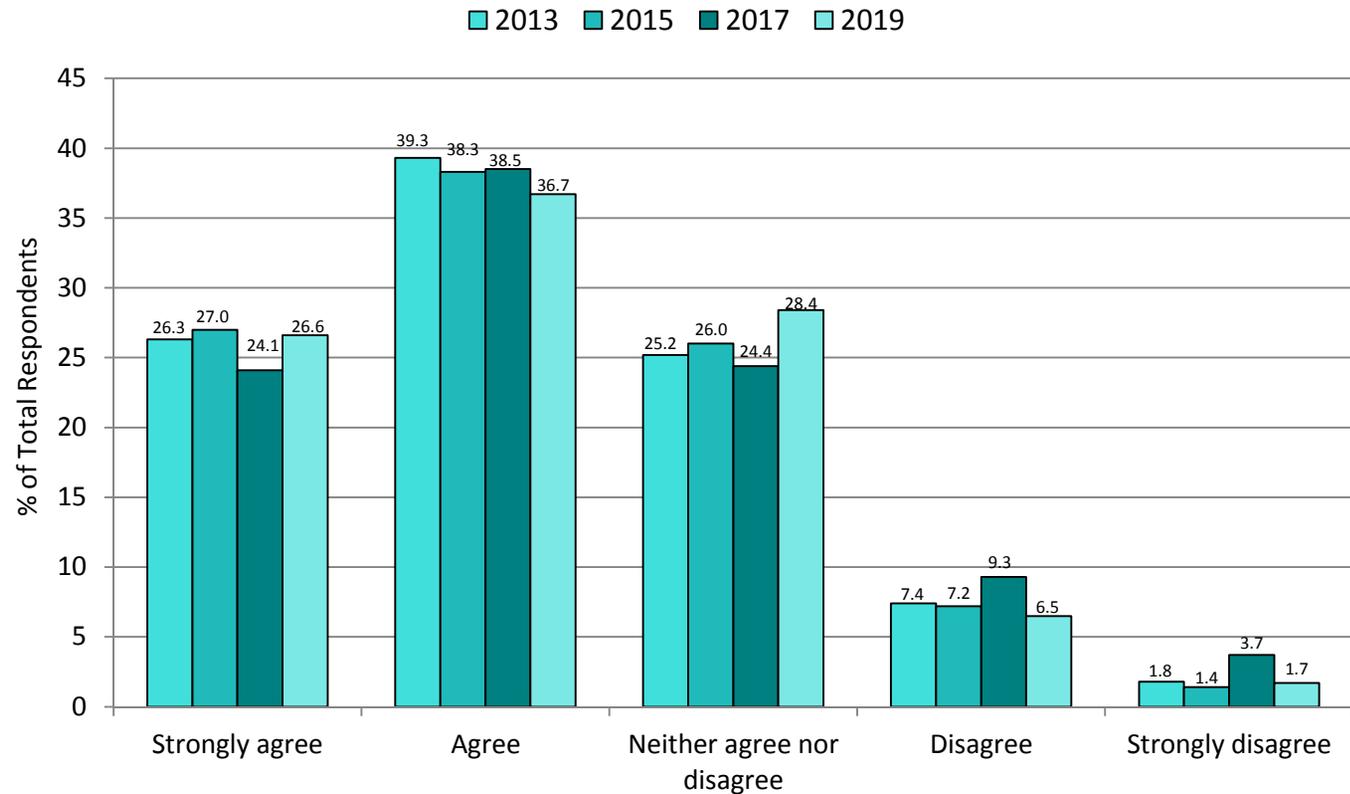


- Sentiment stayed fairly steady about respondents doing their part to reduce pollution. Most are willing to make the effort regardless of others.
- Females (74.5%), College Grads (77.6%) and Downtown/West City residents (77.4%) are most likely to do their part independently of other people.



Q20(e) RESULTS – Water Quality & Health of River, Creeks and Ponds

The utility company should provide incentives for people to reduce water pollution.

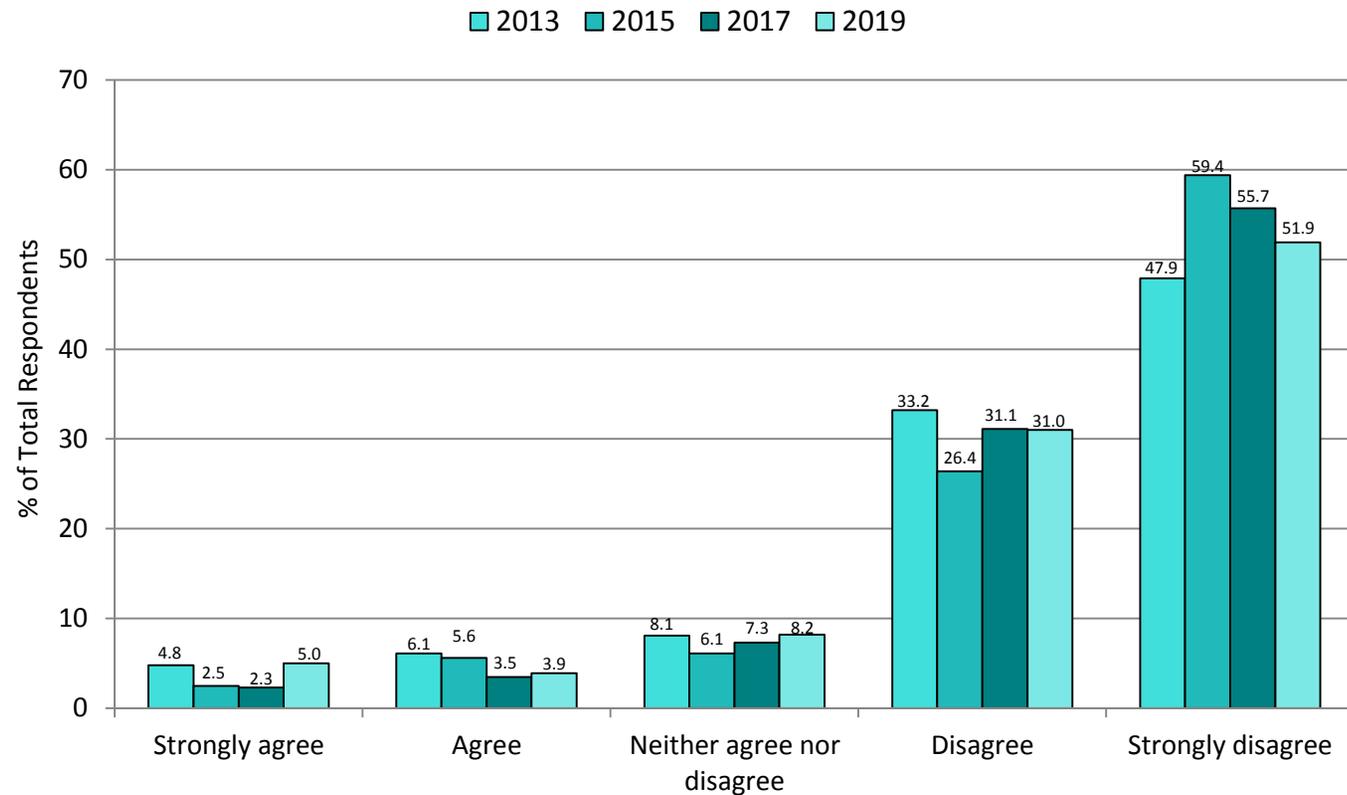


- Incentives appeal most strongly to those under 30 (38.9% strongly agree).
- Seniors over 65 Disagreed/Strongly Disagreed the most (14.4%) of any age group.



Q20(f) RESULTS – Water Quality & Health of River, Creeks and Ponds

Human activities have no significant impact on the water quality of river, creeks and ponds.

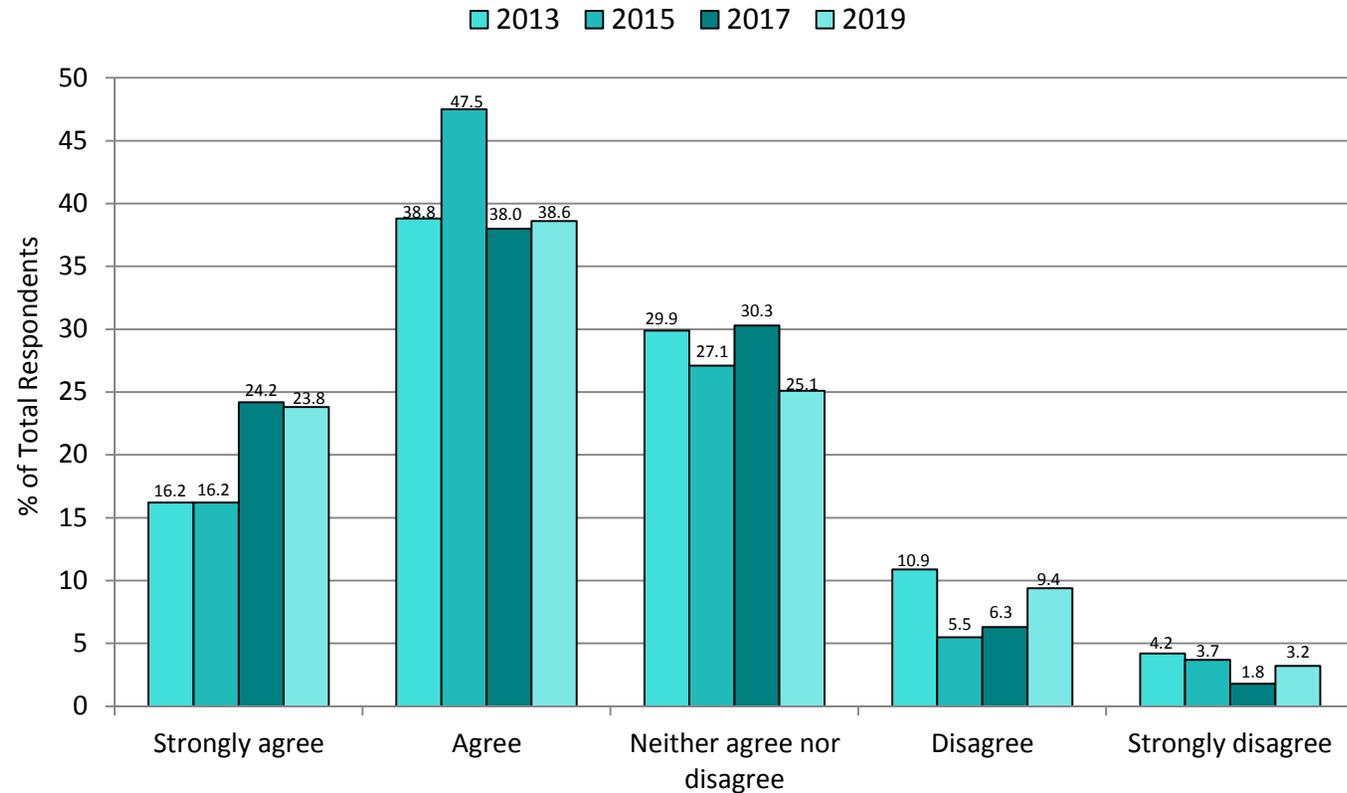


- Those agreeing that human activities impact water quality are residents of the East City (86.9%) and Post Grads (86.5%). Southwest residents (39.0%) strongly agreed the least.



Q20(g) RESULTS – Water Quality & Health of River, Creeks and Ponds

Water pollution of river, creeks and ponds frightens me.

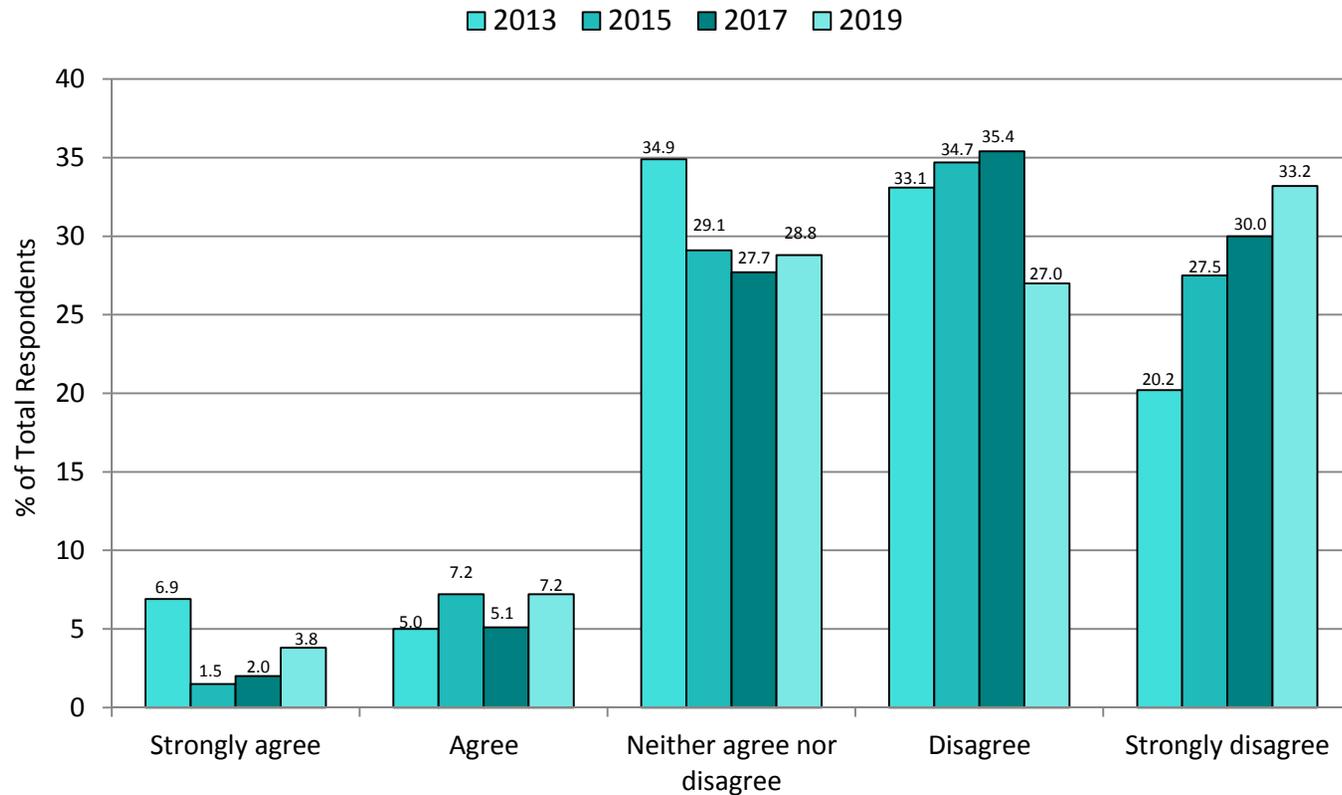


- The percentage of those strongly agreeing that water pollution frightens them remained high in 2019.
- This increase is driven by ages 40-49 (33.9%) and families with children under 6 (31.4%).



Q20(h) RESULTS – Water Quality & Health of River, Creeks and Ponds

The evidence for water pollution of river, creeks and ponds is unreliable or insufficient.



- Respondents strongly agreeing that reliable evidence exists has increased from 2013 to 2019.
- This strongly disagree trend is driven by age 25 and under (61.6%), Post Grads (41.8%) and those who do not use fertilizer (37.0%).



Q21 RESULTS – Willingness of Action

I personally would be willing to take the following actions to reduce the amount of water pollution in river, creeks and streams. (Select all that apply)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Putting fats, oils, grease and food particles in the trash can rather than down the sink drain.	87.0	85.6	86.8	89.4
Putting baby wipes, personal wipes and other wet wipes in the trash can rather than down the toilet.	82.6	85.4	86.6	87.5
Disposing of household hazardous wastes by taking them to a collection center.	81.1	88.2	84.2	88.0
Picking up trash that is in the gutter on and/or around where I live.	80.9	84.9	83.3	86.5
Recycling my used motor oil.	77.6	84.6	82.2	75.8
Using environmentally friendly lawn products.	76.3	84.5	77.8	81.8
Washing my car at the carwash or on a lawn.	72.5	74.4	70.0	76.4
Picking up pet waste in my yard.	60.2	63.7	64.0	67.9
Waiting to run the dishwasher or washing machine 24-48 hours after the rain subsides and the sewers aren't full.	60.0	52.9	59.0	60.8
Picking up pet waste in public spaces.	39.7	42.7	40.3	46.0
Installing a rain barrel to catch rainwater from my downspouts.	35.9	47.8	42.3	43.7
Creating a rain garden on my property or in my neighborhood	33.9	30.1	33.5	35.4



Q21 RESULTS – Willingness of Action

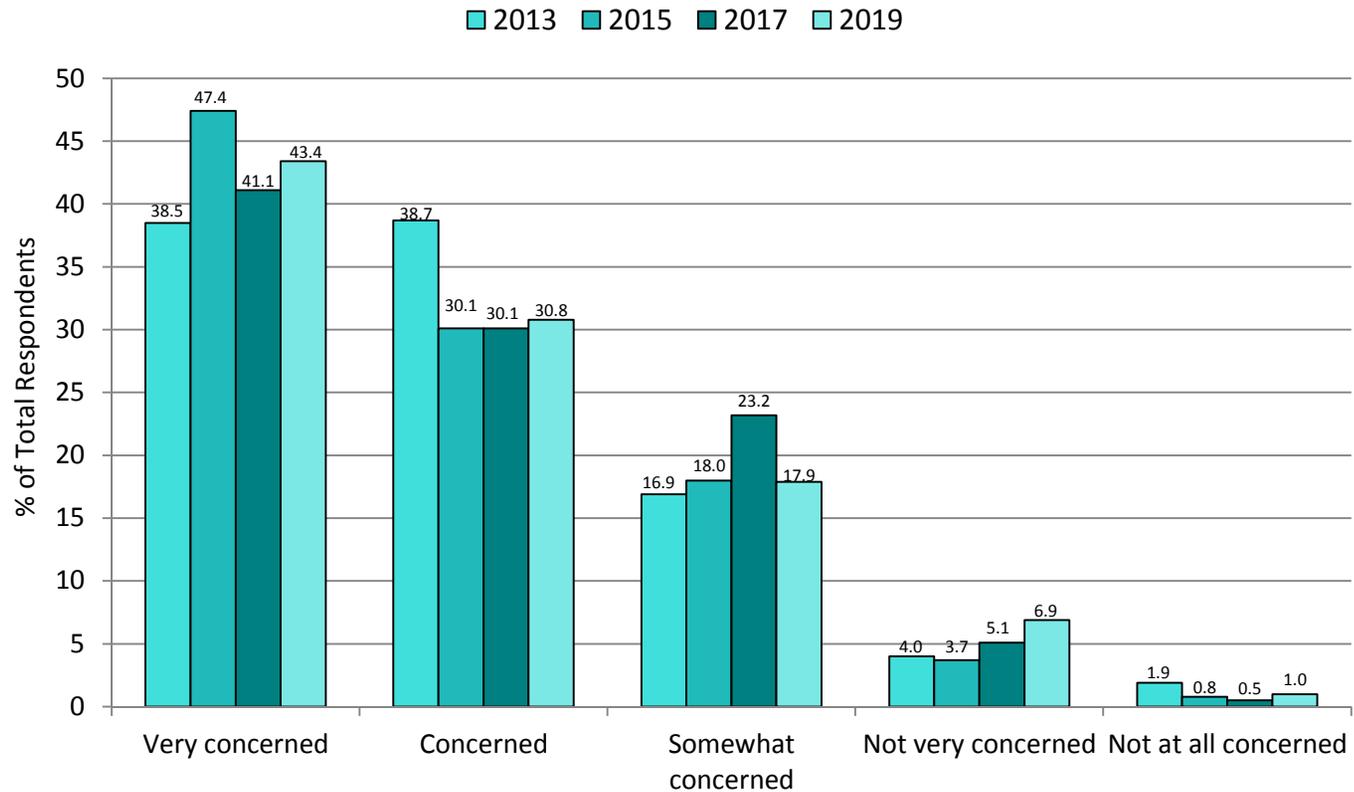
I personally would be willing to take the following actions to reduce the amount of water pollution in river, creeks and streams. (Select all that apply)	Percent who are age 21-39	Percent Female	Geographic area(s)
Install a rain barrel	37.4	60.0	East City / South County
Create a rain garden	37.1	57.1	East City / South County
Pick up pet waste	36.2	58.3	South County / East City
Wait to run the dishwasher/washing machine after rain subsides	33.3	57.3	Downtown / East City

- This residential cross-section indicates many demographic segments have a strong willingness to take action.
- More than one-third of young adult residents 21-39 are willing to do more to reduce water pollution. Women and men said they would take all these actions. East City weighed in with a strong willingness to take these specific actions.



Q22 RESULTS – Pollution Concern

How concerned are you that water pollution will cause the river, creeks and ponds to become un-fishable and un-swimmable for the next generation if actions are not taken now?

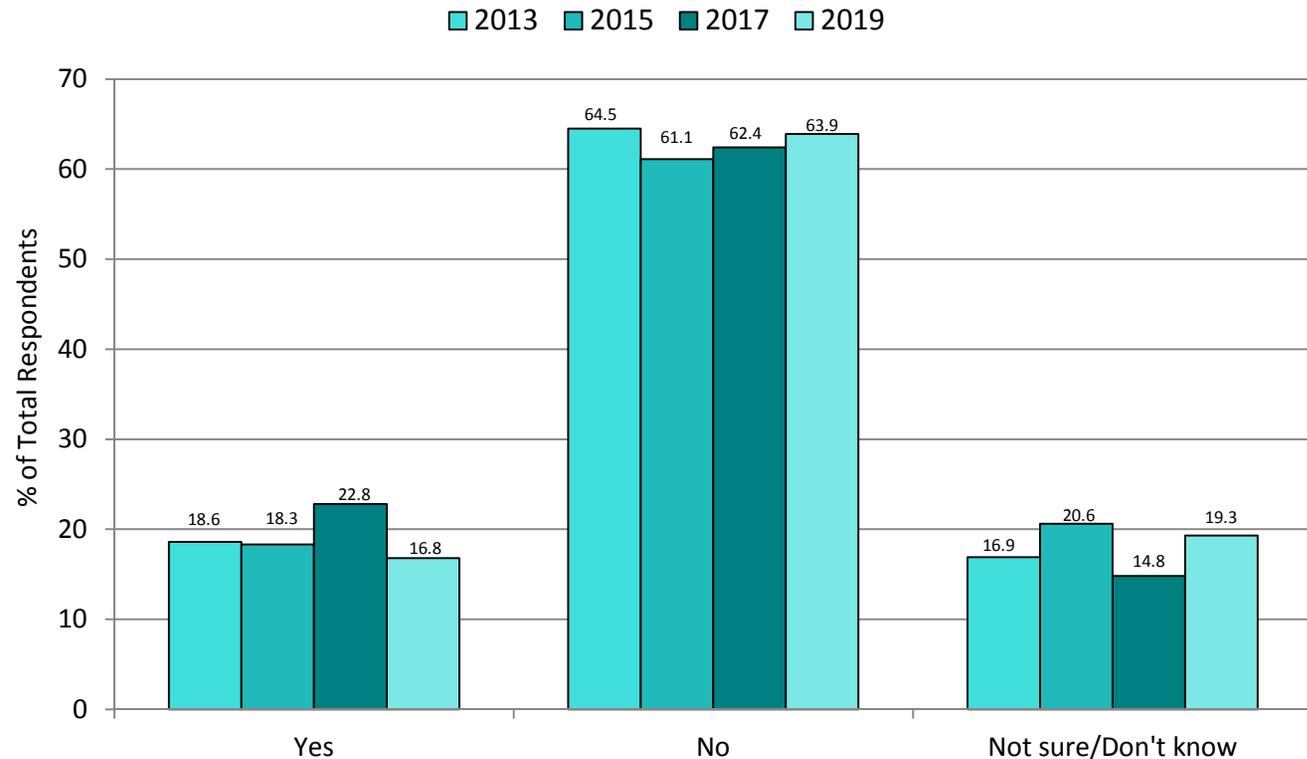


- The proportion of people who are not very concerned has steadily increased over time.
- East City residents (56.2%) are very concerned if actions are not taken now.



Q23 RESULTS – Awareness of Pollution Impact & Prevention

In the past 12 months have you heard anything about the impact of rainwater runoff pollution and sewer system overflow and ways that residents can prevent it?



- Those over 60 (23.1%) are significantly more likely than those under 40 (8.8%) to have heard about the impact. Residents in the Southwest are also unlikely (8.1%) to hear about the impact.
- Post Grads have the highest incidence (23.5%) of hearing about the impact.

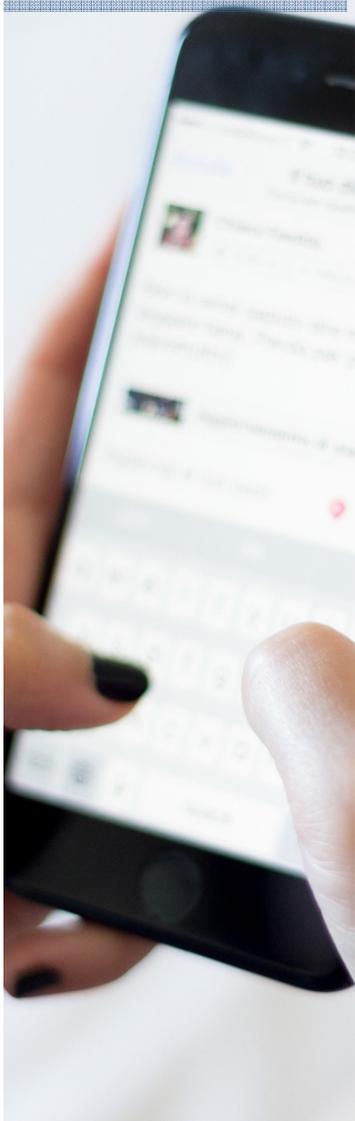
COMMUNICATIONS &
HOW TO ENGAGE



Q24 RESULTS – Source of Pollution Information

Where did you see or hear about rainwater runoff pollution and sewer system overflow? (Select all that apply; only asked if “yes” to Q23)	% who heard something in the past 12 months			
	2013	2015	2017	2019
Television	52.8	58.0	52.4	47.4
Newspaper	40.0	43.1	28.0	29.1
Brochure	26.6	15.6	12.5	16.2
Radio	20.2	22.9	34.8	24.9
Website	19.2	5.0	8.3	6.0
Facebook	18.8	10.1	10.2	14.7
Other source	15.0	14.6	20.5	20.4
Posting near river, creek or pond	12.2	13.8	28.7	23.2
Not sure	6.3	17.0	3.1	4.9
Neighborhood meeting	5.8	4.6	15.1	13.1
Sign/billboard	4.6	10.6	3.7	4.4
Email	4.3	4.3	2.6	14.4
Twitter	1.7	1.3	0.4	4.5
Poster	0.7	0.1	1.6	4.3

COMMUNICATIONS &
HOW TO ENGAGE



Q25 RESULTS – Source of Pollution Information

What do you remember about the information that you saw or heard? Be as detailed as possible. (Open-response; only asked if “yes” to Q23)	Percent of those who heard something in the past 12 months			
	2013	2015	2017	2019
Avoiding creeks, ponds, rivers right after rainfall	2.9	0.0	16.6	2.5
Redirecting rain water/gutters to yard	3.3	10.3	1.7	0.3
Don't add to the problem	1.3	10.2	0.7	0.3
Sewer overflow issues	14.5	9.9	0.8	2.1
Tips/info to help water pollution	9.6	9.2	8.7	3.2
Don't use chemicals on the lawn	0.9	1.3	15.9	1.9
Not to flush wipes / diapers	2.6	7.3	0.5	1.0
Don't wash clothes/use dishwasher during rain	4.2	6.3	3.7	4.4
Careful about what I pour into ground/down drain/dispose	11.4	6.0	4.8	8.9
Rain barrels	0.2	6.0	3.2	0.8
Rain garden	0.9	5.7	0.0	1.0
By not littering/polluting/using trash cans	3.5	5.4	28.4	5.1
Clean up sewer/street drains	4.5	3.5	17.2	0.3



Q26 RESULTS – Methods of Information

Which of the following kinds of information would get you personally to pay attention to rainwater runoff pollution and sewer system overflow to help improve the water quality or health of river, creeks, and ponds after a storm? (Select all that apply)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
General Education	75.5	80.3	78.2	75.6
Financial reward	50.8	63.1	58.5	53.1
Environmental report	50.0	60.8	51.7	59.1
Statistical data	50.6	49.5	49.4	55.2
Campaign with emotional/dramatic impact	31.4	41.6	38.2	32.3
Financial consequences	36.6	35.5	34.0	29.6

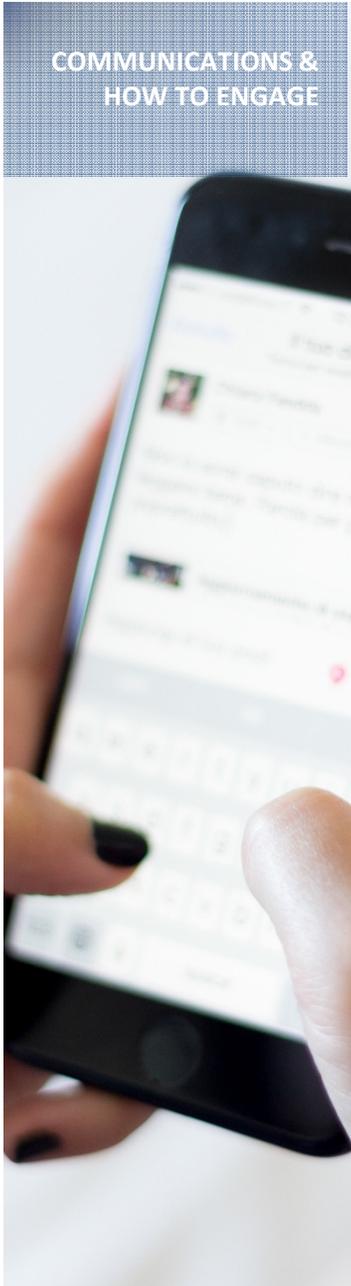
- Attention to financial rewards and environmental reports continues to decrease from 2015 to 2019.
- Residents under 30 (79.7%) are more likely to respond to a campaign with an environmental report. Downtown/West City residents (87.2%) and age 40-49 (83.4%) most frequently indicated that they would prefer an General Education.
- Statistical data appealed to those under age 30 (77.1%).



Q27 RESULTS – Methods of Information

What types of messages would you need to hear that would make you want to take action to reduce rainwater pollution and sewage system overflow? (Open-response)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Cause & effect/consequences/impact	21.1	29.3	28.1	15.5
Prevention methods/ways to help	22.1	16.6	17.0	16.2
Education in schools	1.3	13.4	2.4	1.2
I already do this/already take action	5.2	9.8	3.9	7.8
TV/News coverage	6.9	9.3	5.2	4.5
Rewards/incentives	4.6	9.0	5.9	5.8
Fact/truth/what’s really happening	8.7	8.1	23.3	28.3
How it effects my kids / future generations	2.7	4.8	6.0	6.8
General information	17.1	4.7	26.0	5.9
Don’t know	11.4	4.5	3.7	4.1

- Respondents are more sure about the specific types of messages that would make them want to take action, especially details about facts/truth/what’s really happening.



Q27 RESULTS – Methods of Information

What types of messages would you need to hear that would make you want to take action to reduce rainwater pollution and sewage system overflow? (Open-response)	Age	Education	Gender	Geography	Income	Rent /Own
Cause & effect/consequences/impact	40-49 29.2%	Some Coll 36.1%	Female 65.3%	South County 25.0%	\$60-89K 37.5%	Rent 54.2%
Prevention methods/ways to help	<30 28.9%	Coll Grad 68.4%	Female 60.5%	East City 36.8%	\$60-89K 39.5%	Own 53.9%
Fact/truth/what's really happening	<30 25.8%	Coll Grad 41.7%	Male 55.3%	South County 26.5%	\$90K + 34.8%	Own 68.9%
General information	60+ 42.9%	Coll Grad 42.9%	Female 57.1%	East City 39.3%	\$90K + 32.1%	Own 75.0%



Q28 RESULTS – Source Rankings: Emergency Situation

People get their information from many different sources. Rank the sources that you would most prefer to hear from in an <u>emergency situation</u> (such as a weather alert). Please select at most 4 answers.	% ranked 1 st	% ranked 2 nd	% ranked 3 rd	% ranked 4 th	% ranked top 4
Television	31.2	18.7	14.5	12.1	74.1
Radio	11.4	16.8	16.0	18.3	59.3
Email	16.6	16.3	16.3	12.2	58.8
Social Media	15.2	15.0	15.8	14.2	57.5
Internet	9.7	16.7	14.7	15.6	53.8
Direct Mail	6.7	6.0	6.2	8.3	25.7
Postings at river, creek, or pond	3.1	3.6	8.2	6.1	19.8
Signs/billboards	2.2	4.4	6.1	9.7	20.9
Neighborhood meeting	4.0	2.5	2.2	3.6	11.7

- Residents continue to prefer receiving alerts via traditional broadcast channels.
- Those age 65+ ranked TV first 51.3% of the time.



Q29 RESULTS – Source Rankings: Community News

People get their information from many different sources. Rank the sources that you would most prefer to hear from for <u>community news</u> (such as a river walk clean-up). Please select at most 4 answers.	% ranked 1 st	% ranked 2 nd	% ranked 3 rd	% ranked 4 th	% ranked top 4
Television	25.2	15.5	18.3	12.0	66.2
Email	18.7	13.0	13.2	19.3	58.6
Radio	10.3	17.4	13.1	16.0	51.6
Social Media	24.5	18.9	12.5	8.4	60.7
Internet	5.2	14.7	13.5	9.8	39.3
Direct Mail	8.6	9.3	9.0	11.6	34.9
Signs/billboards	3.8	5.6	9.4	9.8	25.5
Neighborhood meeting	2.7	1.7	5.7	6.2	14.6
Postings at river, creek, or pond	0.9	4.0	5.3	6.8	15.0

- Residents have significantly increased their preference of Social Media (15.7% in 2017 to 24.5% in 2019) for receiving community news.
- Of respondents age 65+, 45.0% ranked TV first.



Q30 RESULTS – Source Rankings: “How To” Information

People get their information from many different sources. Rank the sources that you would most prefer to hear from for “How To” information (such as how to install a rain barrel). Please select at most 4 answers.	% ranked 1 st	% ranked 2 nd	% ranked 3 rd	% ranked 4 th	% ranked top 4
Television	16.2	14.0	18.9	9.9	51.0
Email	19.7	17.8	13.5	12.8	55.5
Social Media	18.7	14.1	11.6	12.5	49.4
Direct Mail	15.3	11.6	12.4	14.9	46.2
Internet	18.8	18.3	15.9	11.4	56.1
Radio	5.0	11.8	6.9	15.5	32.1
Neighborhood meeting	4.1	3.4	6.5	11.3	20.2
Signs/billboards	0.7	3.8	8.2	4.3	13.6
Postings at river, creek, or pond	1.4	5.3	6.3	7.4	16.4

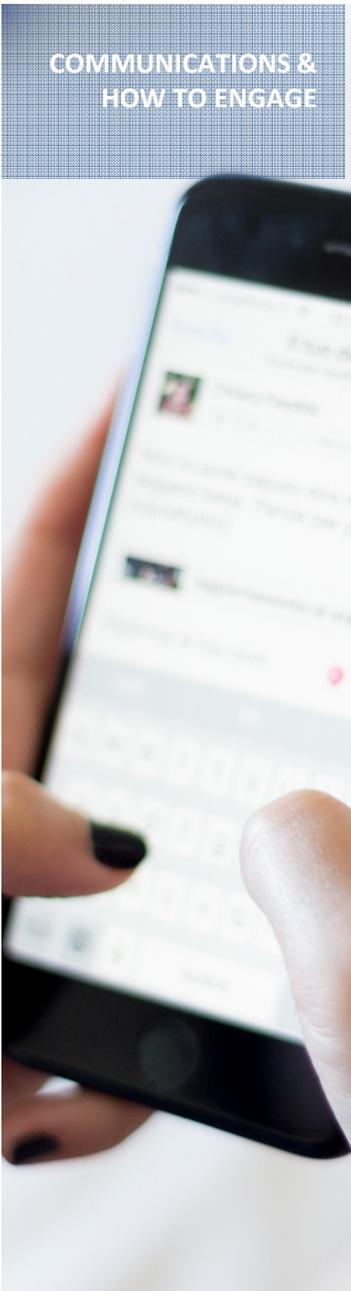
- Email and the Internet are top preferences for receiving “How To” information.
- The top 4 percentage for Radio maintained its increase (35.6% in 2017 and 32.1% in 2019).
- Most under 25 (36.4%) rated Internet first.



Q31 RESULTS – Source Rankings: Notices/Upcoming Dates

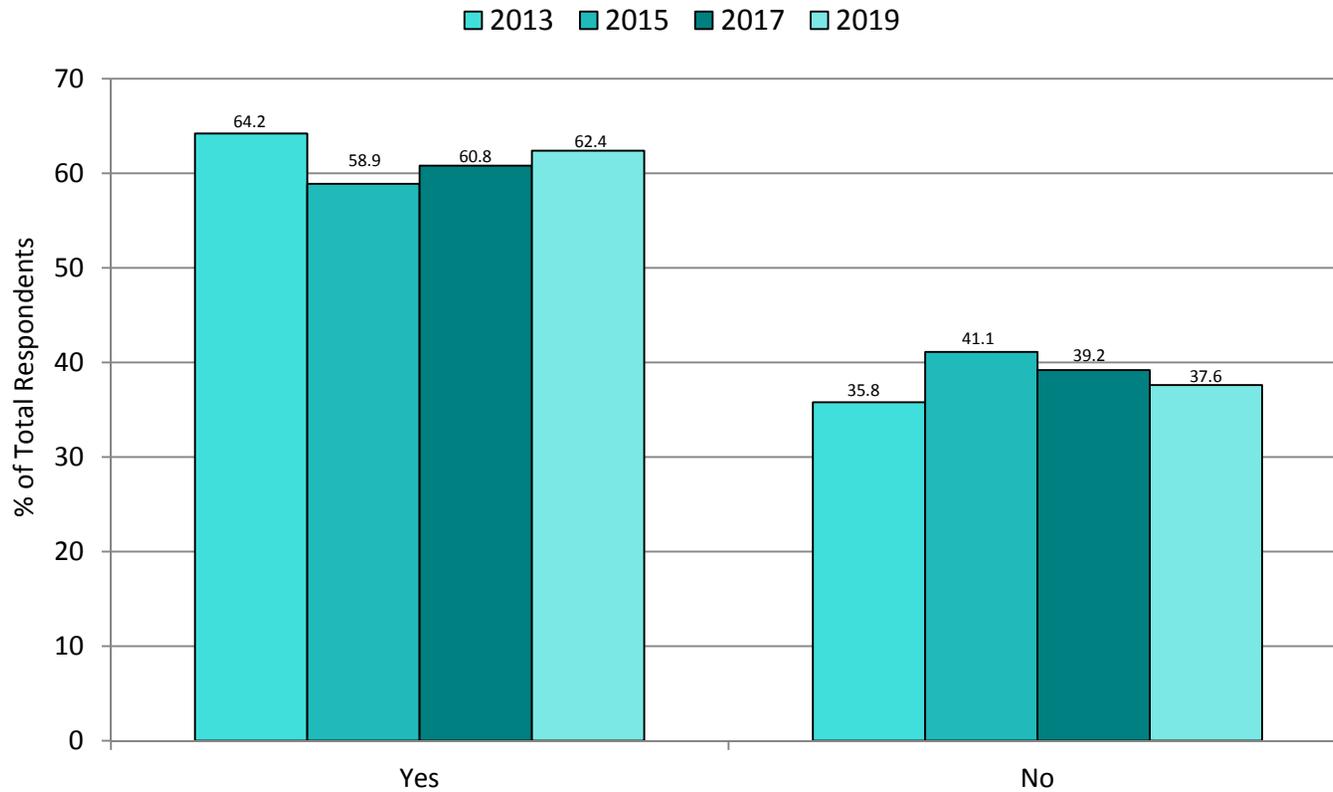
People get their information from many different sources. Rank the sources that you would most prefer to hear from for <u>notices</u> (such as upcoming dates for recycling hazardous chemicals). Please select at most 4 answers.	% ranked 1 st	% ranked 2 nd	% ranked 3 rd	% ranked 4 th	% ranked top 4
Television	16.2	15.7	13.9	18.6	55.9
Email	23.5	19.8	15.9	12.9	64.5
Direct mail	22.4	14.9	7.9	11.2	51.1
Radio	8.0	14.9	11.3	13.1	40.9
Social media	17.1	12.7	12.4	11.2	47.4
Signs/billboards	1.5	4.7	11.7	8.6	21.8
Internet	8.6	12.5	14.3	9.6	39.1
Neighborhood meeting	1.5	2.1	4.6	6.9	12.3
Postings at river, creek, or pond	1.3	2.6	7.9	7.9	16.0

- Email and TV are preferred channels for important but non-urgent information.
- College Grad respondents rated Email most often (75.9%) as one of their top 4 choices.
- Those over 65 rated TV most often (65.7%) as one of their top 4 choices.



Q32 RESULTS – Newsletter

Do you read newsletters that are included in your monthly bills?



- Residents under 30 (52.3%) and Southwest residents (51.4%) are least likely to read the newsletter inserts.
- Residents over 65 (71.1%) and South County residents (74.2%) are most likely to read the newsletter inserts.



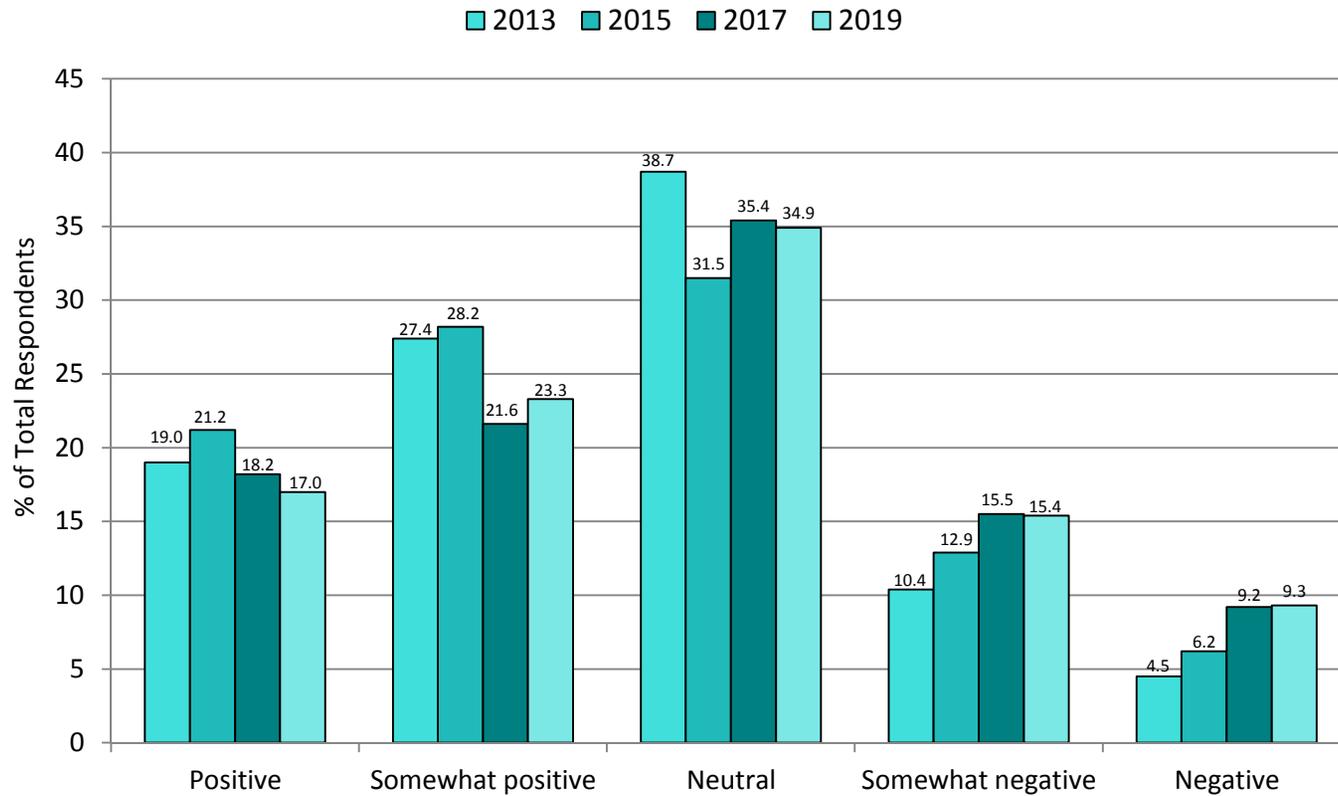
Q33 RESULTS – MSD & Your Community

What does the Metropolitan Sewer District (MSD) do for your community? (Open-response)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Install/handle/maintain sewers/waste water	25.7	23.5	33.6	24.6
Cleans the water/purifies/filters	6.3	15.9	8.6	5.7
Clean sewers/ditches	6.3	15.7	6.0	4.8
Provide drainage/runoff control	8.7	14.4	14.2	8.5
Prevent flooding	5.5	11.4	N/A	4.2
Treat waste water	3.9	7.1	11.8	8.8
Corrupt / inadequate	0.3	6.6	1.4	13.8
Charge too much	5.3	6.4	4.0	13.1
Repair pipes/infrastructure	4.0	6.0	15.4	6.5
Continue to raise prices	2.9	4.4	8.1	5.5
Prevents pollution	0.5	4.3	0.2	1.6
Nothing	3.7	4.3	7.0	3.1
Don't know	16.2	12.7	12.8	9.4



Q34 RESULTS – Opinion of MSD

What is your opinion of MSD?



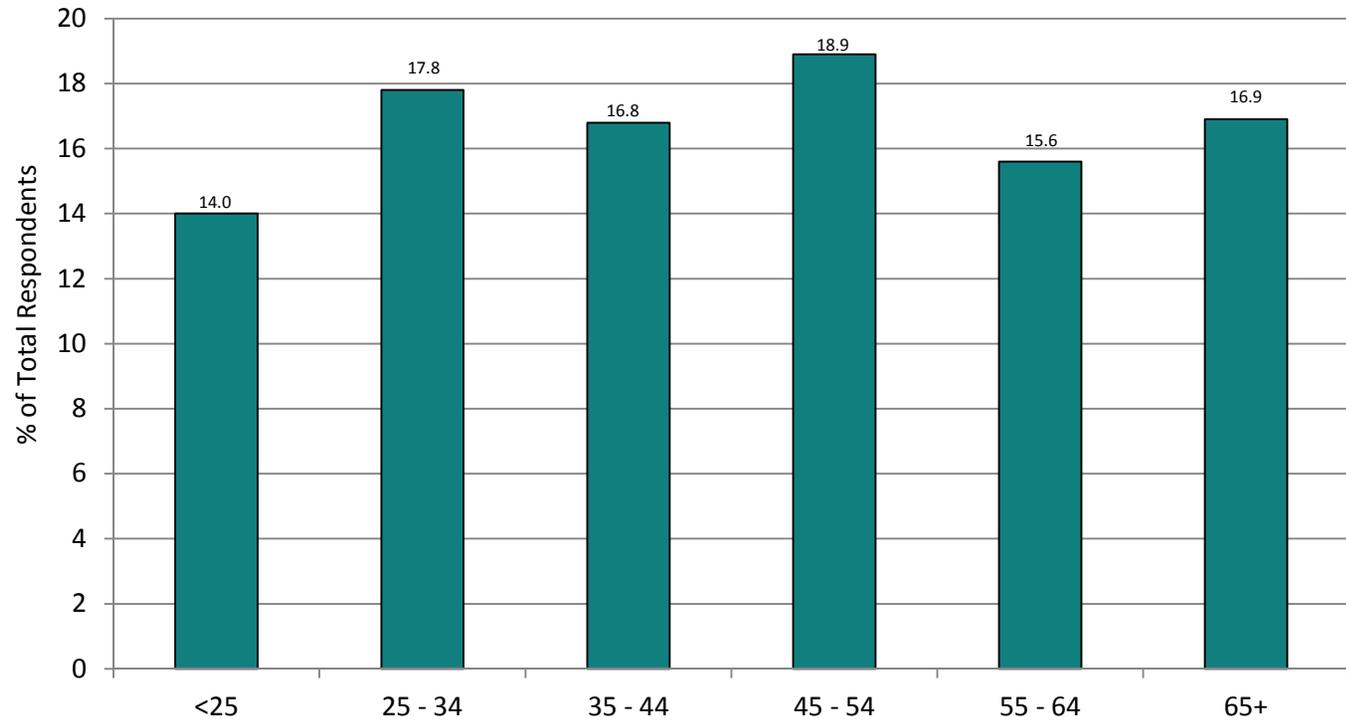
- Negative and Somewhat Negative perceptions of MSD remained level from 2017 to 2019.
- Downtown residents (43.7%) and age 65+ (33.7%) have the highest Negative/Somewhat Negative perceptions.
- East County residents have the most positive opinion (29.1% Positive).



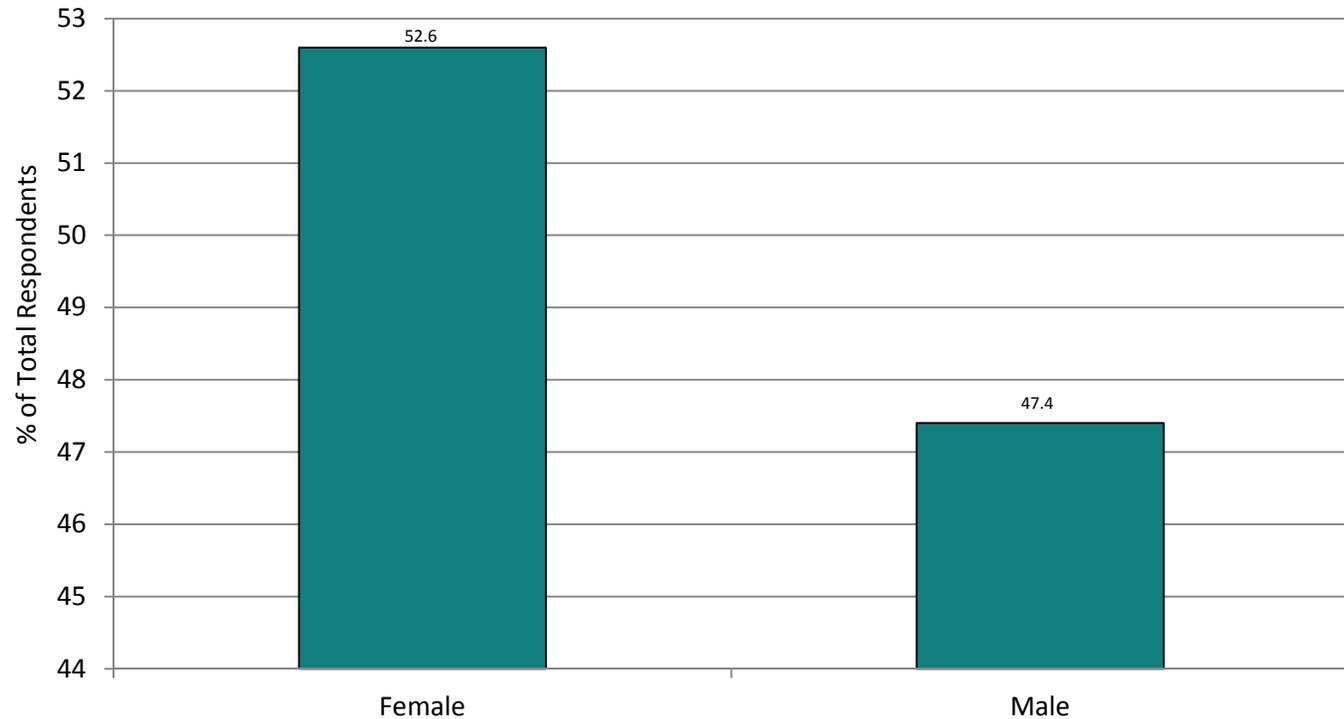
Q35 RESULTS – MSD & Your Community

MSD helps your community manage its sewer system and protect the health of the river, creeks and ponds. What role do you think MSD should take in helping residents reduce the household causes of waterway pollution? (Open response)	2013 (%)	2015 (%)	2017 (%)	2019 (%)
Educate	28.8	30.4	42.2	21.1
Provide more information / awareness	24.3	25.1	19.9	14.7
Provide incentives / rewards	6.3	9.5	8.4	7.9
Inform public of ways to help	10.0	8.5	18.5	7.0
Manage their resources better	0.4	6.5	0.6	2.8
Major role / a big role	3.1	5.8	7.9	8.9
Newsletters / inserts	3.2	3.8	1.3	1.6
Clean out drains / sewers	2.2	3.7	2.0	1.1
Financial incentives on water bill	2.7	3.4	N/A	2.7
Don't know	8.3	8.8	0.9	5.0

Q36 RESULTS – Age

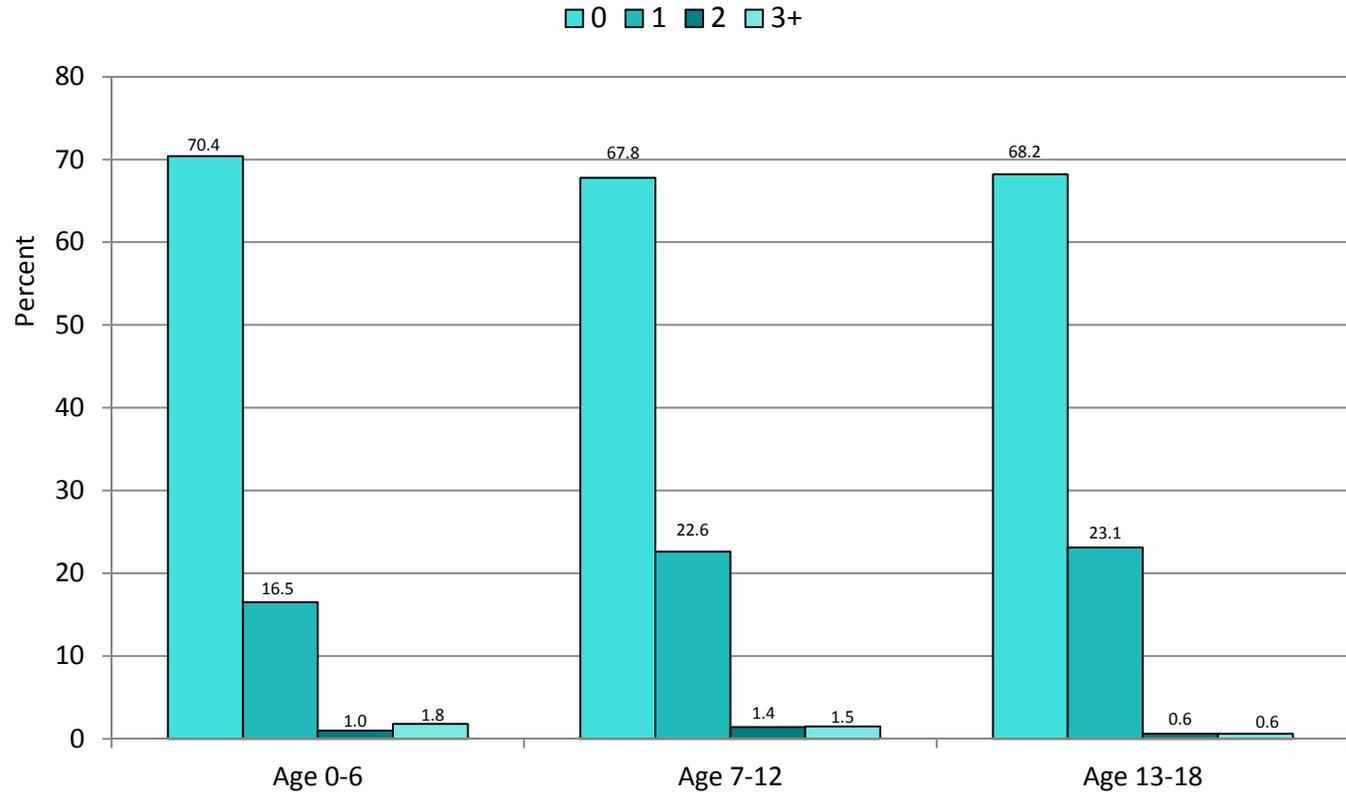


Q37 RESULTS – Gender

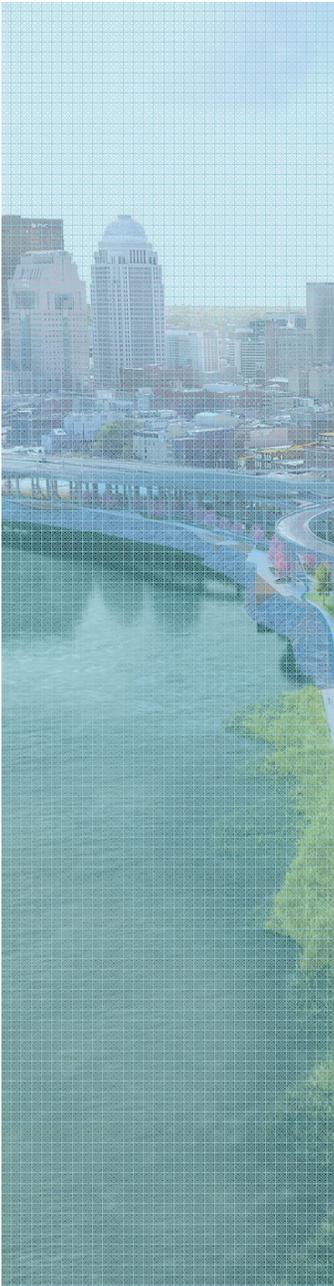
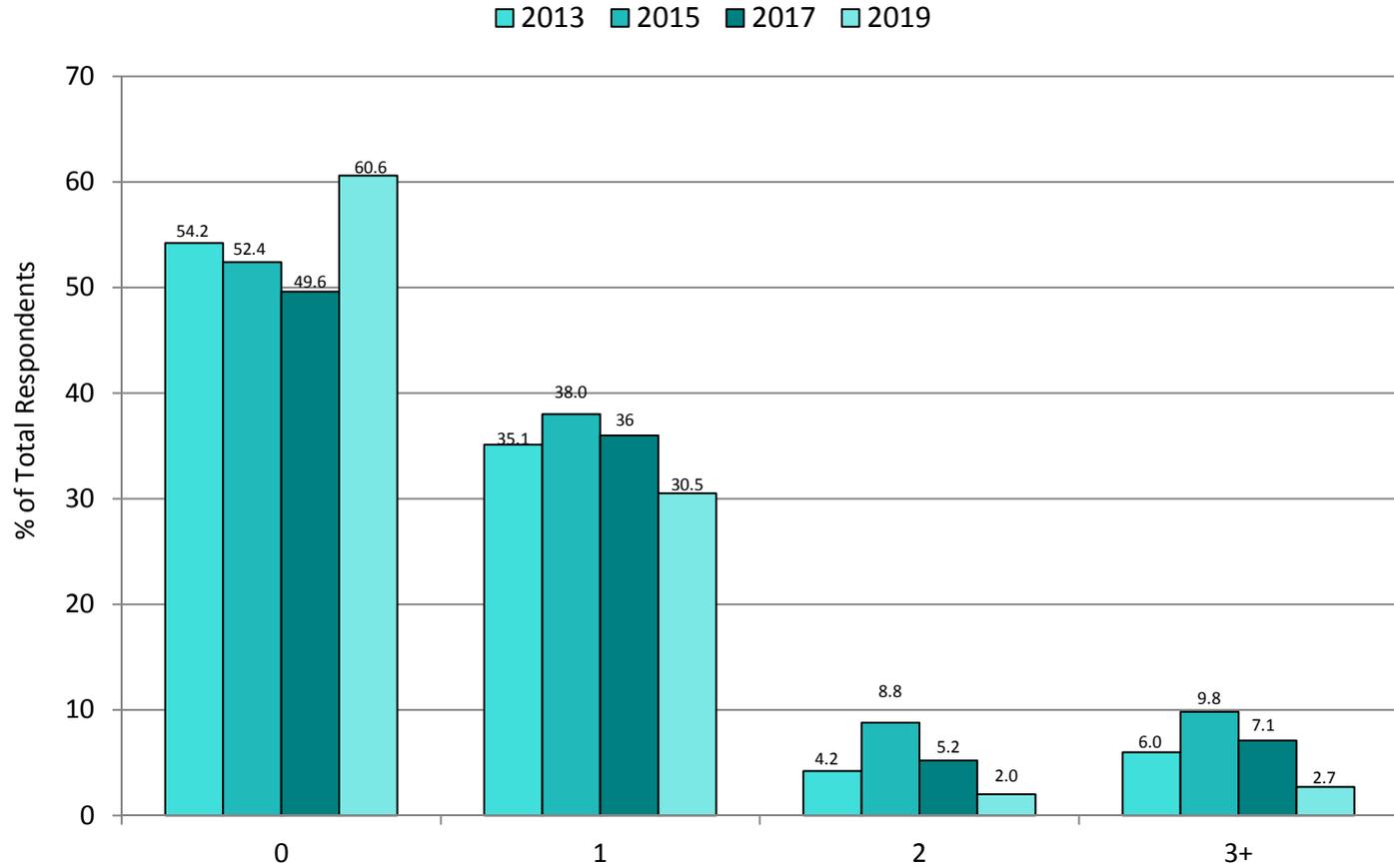


- Females tend to reside in the Southwest (68.3%) and South County (64.7%), versus males who are more likely to live in the East County (57.4%) and East City (56.8%).

Q38 RESULTS – Number of Children by Age in Household

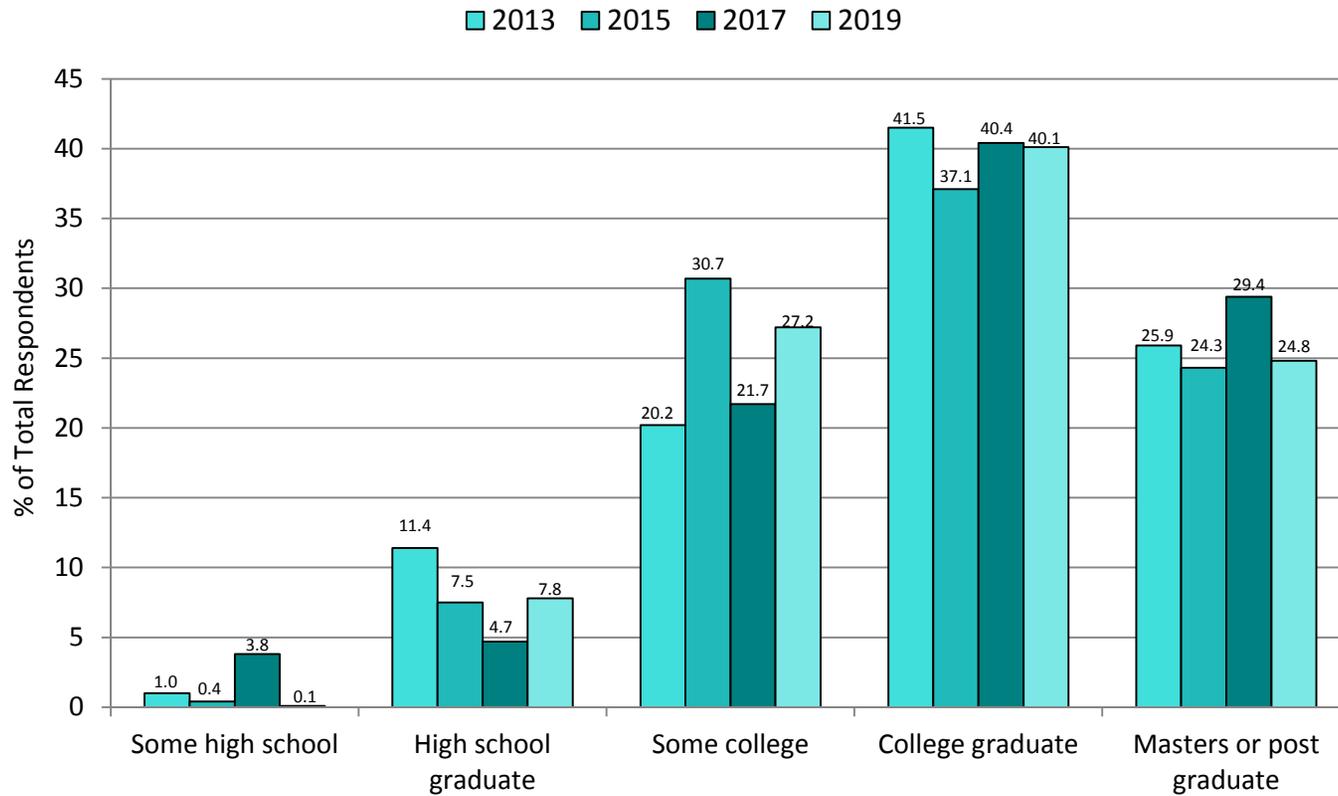


Q38 RESULTS – Total Number of Children in Household



Q39 RESULTS – Education

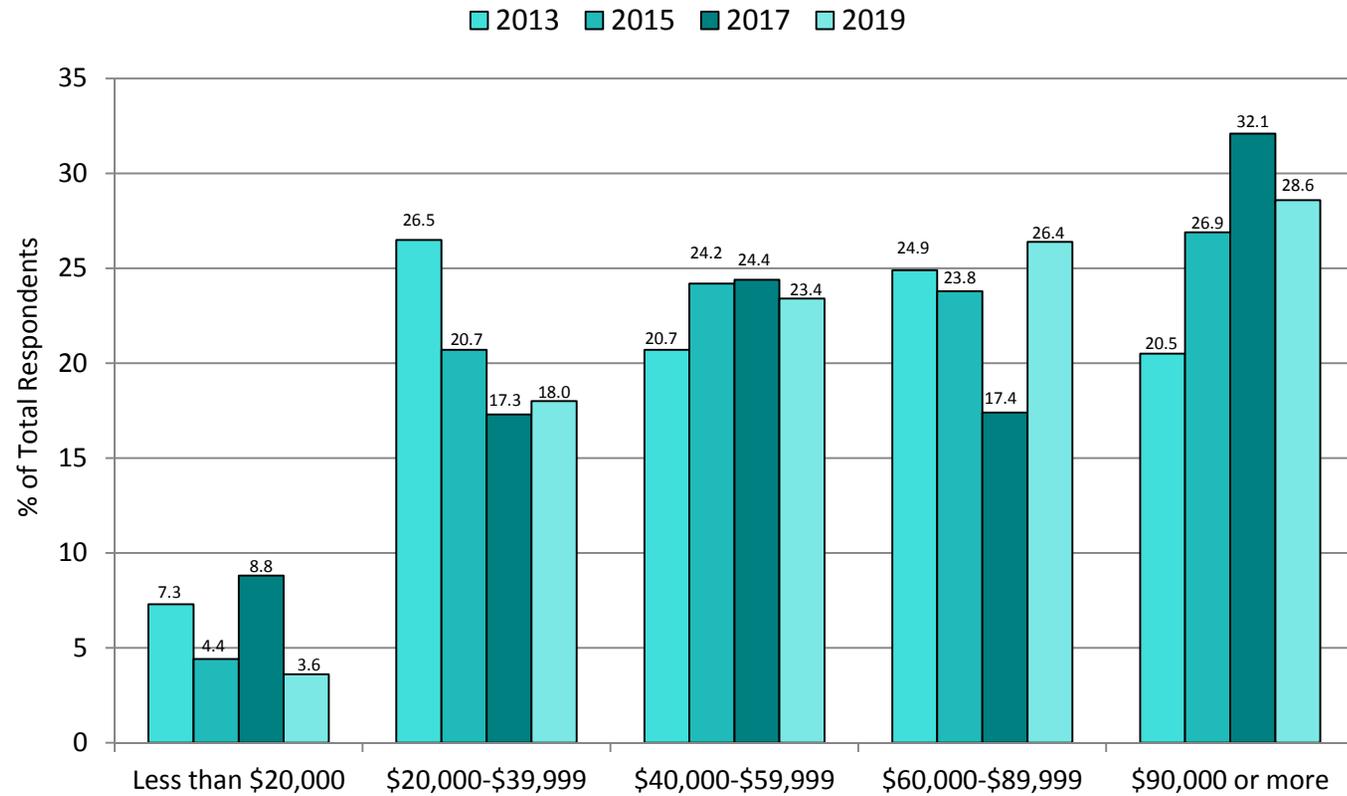
What is your highest level of education?



- The Northeast County has the highest proportion of College Grads (49.2%).

Q40 RESULTS – Annual Household Income

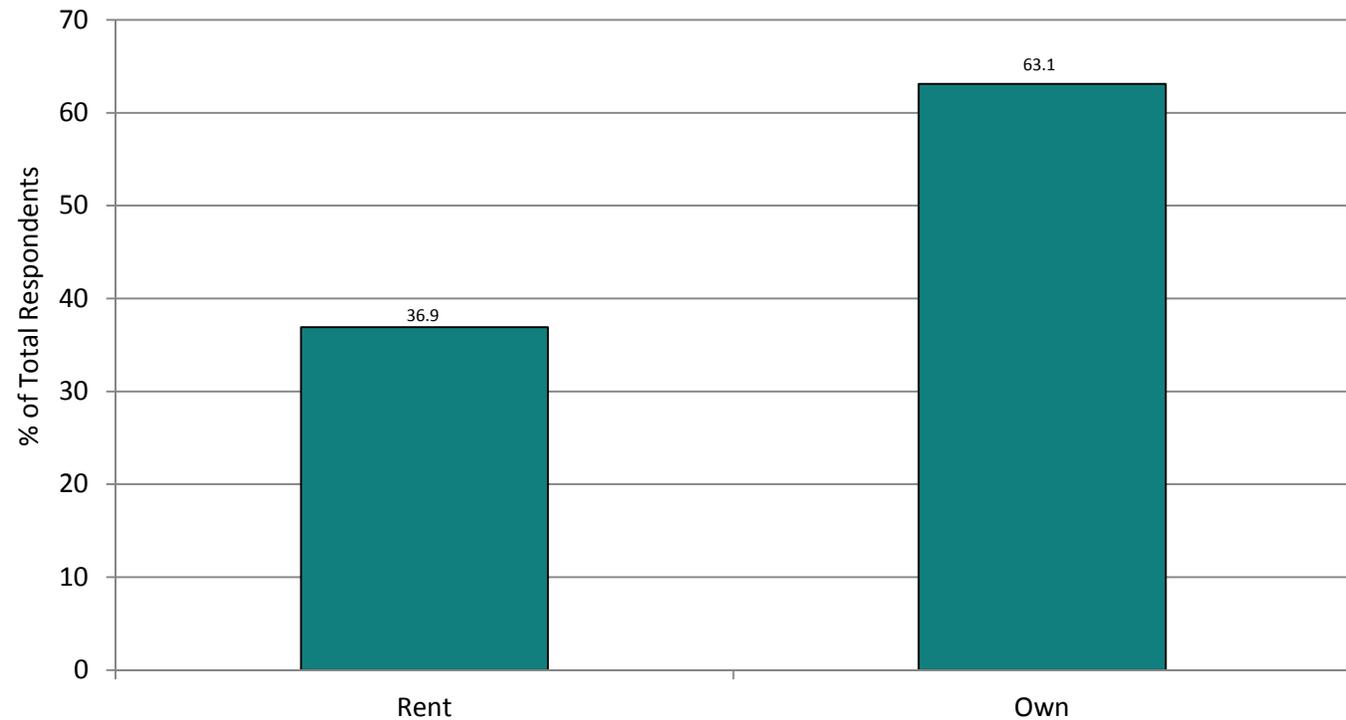
What is your household income?



- In general, income levels did vary as expected with ZIP code geography.

Q41 RESULTS – Rent vs. Own

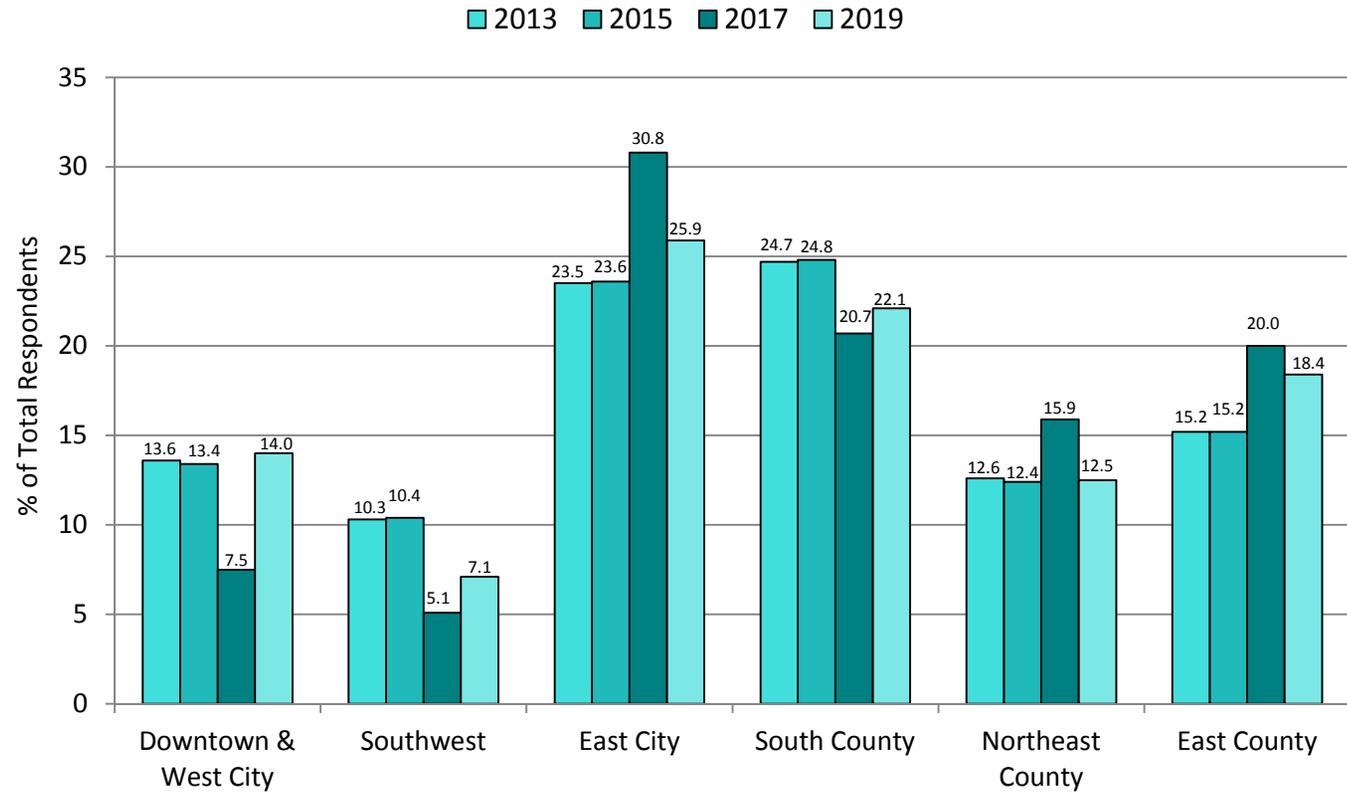
Do you rent or own your residence?



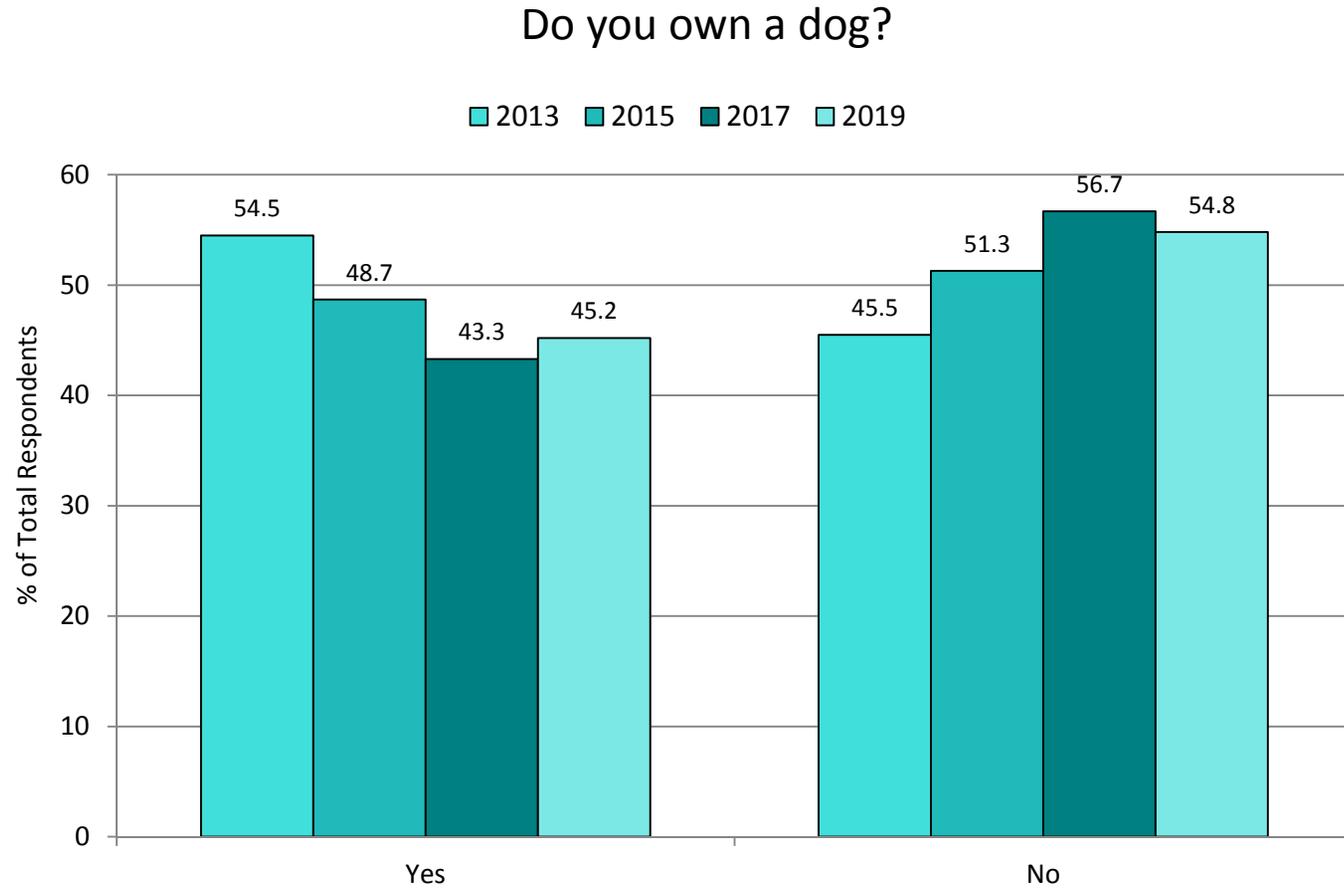
- Renters are most prevalent Downtown/West City (60.9%), as where owners are more likely to reside in Northeast County (82.4%) and East County (79.7%).

Q42 RESULTS – ZIP Code

What is your ZIP code?



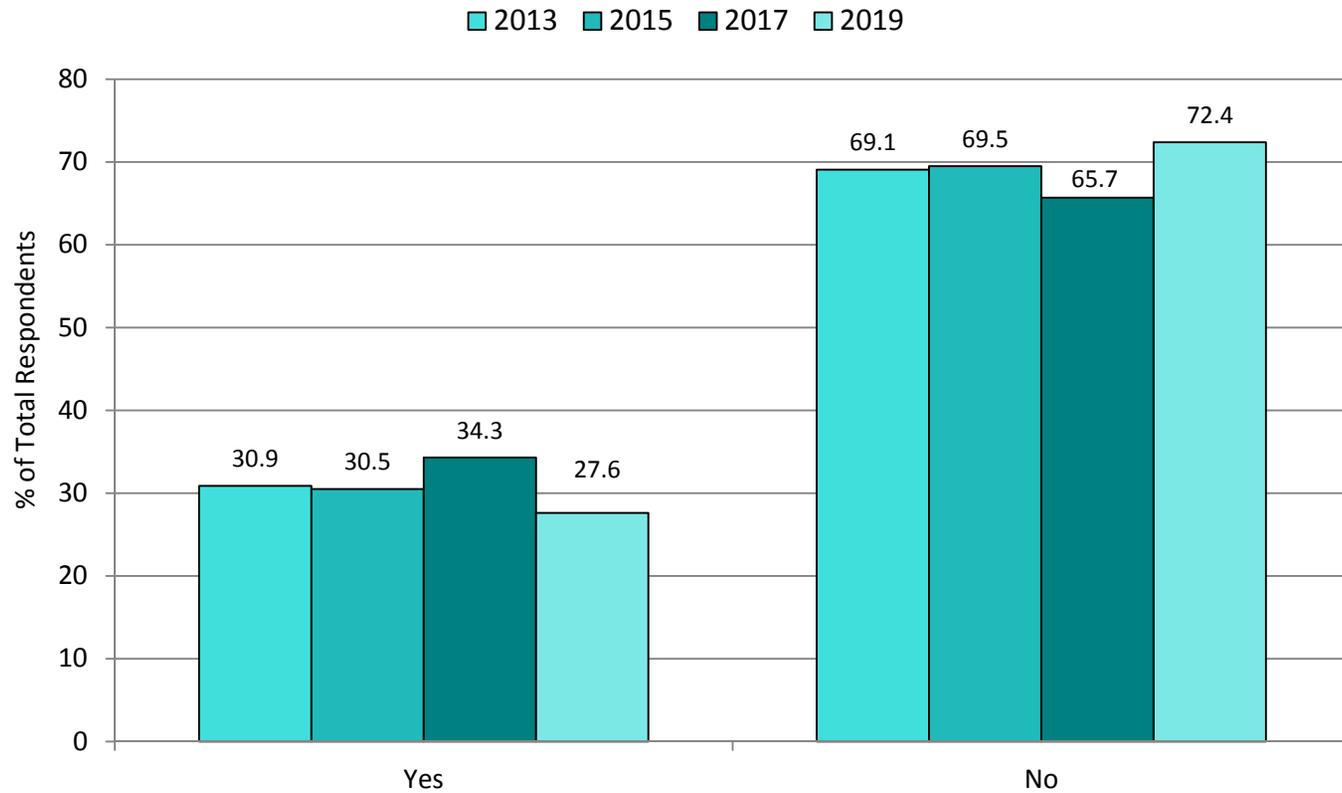
Q43 RESULTS – Dog Owner



- Owners tend to reside in South County (57.6%), and least likely to live Downtown/West City (35.8%).

Q44 RESULTS – Use of Yard/Landscape Fertilizer

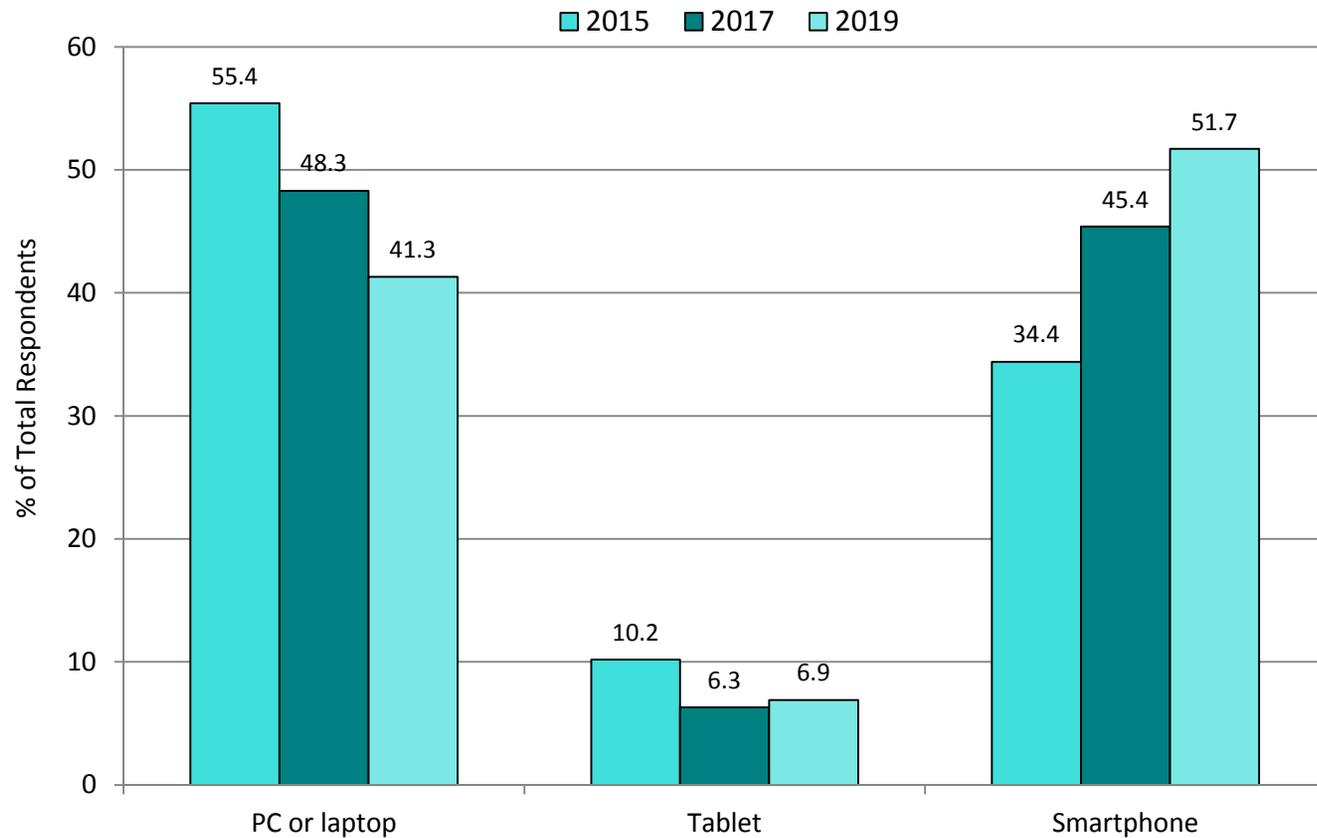
Do you use yard/landscape fertilizer?



- Northeast County residents (54.6%) and older (over 65) respondents (41.7%) tend to use fertilizer more (41.7%).
- Renters (6.6%) and Downtown/West City residents (9.6%) use it the least.

Q45 RESULTS – Survey Usage Device

What device are you using to take this survey?



- PC or laptop users are those over 65 (57.0%).
- Families with children under 18 use smartphones most often (66.2%) to complete the survey.

APPENDIX A

Online Survey

2019 Jefferson County Environmental Impact Survey

1. Do you live in Jefferson County, Kentucky?
 - Yes
 - No

If no, the participant is not allowed to proceed.

2. Please indicate if you or anyone in your household work in any of the following industries:
 - Advertising or Marketing
 - Marketing Research
 - TV or Radio Station
 - Public Utility
 - Nobody in my household works in these industries

If any of the first 4 are selected, the participant is not allowed to proceed.

3. For each of the following environmental issues, indicate how important you feel the issue is to you.
 - a) Increasing tree canopy
 - b) Protecting our waterways (river, creeks and ponds) from pollution
 - c) Preserving open spaces
 - d) Reducing climate change
 - e) Conserving energy resources
 - Extremely important
 - Very important
 - Somewhat important
 - Not very important
 - Not at all important

4. Do you use the river, creeks and ponds for recreational purposes in Jefferson County, Kentucky?
 - Yes
 - No

If no, ask #5

5. Why don't you use river, creeks and ponds for recreational purposes? Be as specific as possible.
(Open response)
6. How would you rate the overall water quality or health of the river, creeks, and ponds in Jefferson County, Kentucky?
 - Excellent
 - Very Good
 - Good
 - Fair
 - Poor
7. Why do you give that rating? (Open response)
8. How important is it to you that your community has clean rivers, creeks and ponds?
 - Extremely important
 - Very important
 - Important
 - Somewhat important
 - Not at all important
9. How does rain affect the water quality or health of our river, creeks and ponds? Please select one.
 - Restores vital nutrients
 - Washes away pollution
 - Adds pollutants to the water
 - Don't know
 - Other [Please specify]:
10. After it rains, you should not use the local area river, creeks and ponds because they have become unsafe with increased levels of pollution and bacteria.
 - True
 - False
 - Not sure

11. What do you think would cause the river, creeks and ponds to become polluted after a rain?
(Open response)
12. Please indicate how much you agree with the following statements.
- a) Water that flows through street gutters and storm drains goes through a treatment facility before being released in our waterways.
 - b) Rainwater runoff is a leading cause of water pollution in my area.
 - c) Sewer system overflow occurs frequently in my community.
 - Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
13. How informed do you feel about the causes of rainwater runoff pollution in your area?
- Very informed
 - Informed
 - Somewhat informed
 - Not very informed
 - Not at all informed
14. How informed do you feel about the causes of sewer system overflow in your area?
- Very informed
 - Informed
 - Somewhat informed
 - Not very informed
 - Not at all informed
15. Do you think there are actions you can take to reduce water pollution in the river, creeks and ponds?
- Yes
 - No

16. Rainwater runoff and sewer system overflow contribute to water pollution. Do you currently take actions to reduce water pollution?
- Yes
 - No
- If yes, ask #17
17. What actions do you currently take to reduce water pollution? (Open response)
18. Do you think any of these actions would increase the amount of pollution from rainwater runoff?
(Select all that apply)
- Putting trash in the street gutter
 - Improperly disposing hazardous waste, such as paint and motor oil
 - Using non environmentally friendly lawn chemicals
 - Leaving pet waste on the ground
 - Allowing fluids to leak from cars and trucks
 - Washing your car in the driveway or street
 - Other [Please specify]:
19. Do you think any of these actions cause sewer system overflow? (Select all that apply)
- Pouring fats, oils, greases and food particles down the sink
 - Flushing diaper wipes and other wet wipes down the toilet
 - Flushing dental floss down the toilet
 - Flushing hair down the toilet
 - Using water-using appliances, such as a dishwasher or clothes washer, when it is raining
 - Connecting the groundwater sump pump to the basement sewer connection
 - Putting lawn grass clippings and leaves in the street gutter
 - Other [Please specify]:

20. Please indicate how much you agree or disagree with the following statements about the water quality or health of the river, creeks, and ponds in Jefferson County, KY.
- a) We can all do our part to reduce the effects of water pollution.
 - b) I am personally responsible for reducing rainwater runoff pollution and sewer system overflow.
 - c) Local governments, businesses and industries are responsible for reducing rainwater runoff and sewer system overflow.
 - d) I would only do my part to reduce water pollution if everyone else did as well.
 - e) The utility company should provide incentives for people to reduce water pollution.
 - f) Human activities have no significant impact on the water quality of river, creeks and ponds.
 - g) Water pollution of river, creeks and ponds frightens me.
 - h) The evidence for water pollution of river, creeks and ponds is unreliable or insufficient.
 - Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
21. I personally would be willing to take the following actions to reduce the amount of water pollution in river, creeks and streams. (Select all that apply)
- Picking up trash that is in the gutter on and/or around where I live.
 - Disposing of household hazardous wastes by taking them to a collection center.
 - Installing a rain barrel to catch rainwater from my downspouts.
 - Creating a rain garden on my property or in my neighborhood.
 - Using environmentally friendly lawn products.
 - Picking up pet waste in public spaces.
 - Picking up pet waste in my yard.
 - Recycling my used motor oil.
 - Washing my car at the carwash or on a lawn.
 - Putting fats, oils, grease and food particles in the trash can rather than down the sink drain.
 - Putting baby wipes, personal wipes and other wet wipes in the trash can rather than down the toilet.
 - Waiting to run the dishwasher or washing machine 24-48 hours after the rain subsides and the sewers aren't full.

22. How concerned are you that water pollution will cause the river, creeks and ponds to become un-fishable and un-swimmable for the next generation if actions are not taken now?
- Very concerned
 - Concerned
 - Somewhat concerned
 - Not very concerned
 - Not at all concerned
23. In the past 12 months have you heard anything about the impact of rainwater runoff pollution and sewer system overflow and ways that residents can prevent it?
- Yes
 - No
 - Not sure/don't know
- If yes, ask #24 & #25
24. Where did you see or hear about rainwater runoff pollution and sewer system overflow? (Select all that apply)
- Television
 - Radio
 - Newspaper
 - Email
 - Website [Please specify]:
 - Brochure
 - Neighborhood meeting
 - Poster
 - Facebook
 - Twitter
 - Sign/billboard
 - Posting near river, creek, or pond
 - Other source [Please specify]:
 - Not sure

25. What do you remember about the information that you saw or heard? Be as detailed as possible.
(Open response)
26. Which of the following kinds of information would get you personally to pay attention to rainwater runoff pollution and sewer system overflow to help improve the water quality or health of river, creeks, and ponds after a storm? (Select all that apply)
- General education
 - Campaign with emotional/dramatic impact
 - Financial reward
 - Financial consequences
 - Statistical data
 - Environmental report
27. What types of messages would you need to hear that would make you want to take action to reduce rainwater pollution and sewage system overflow? (Open response)
28. People get information from many different sources. Rank the sources that you would most prefer to hear from in an emergency (such as a weather alert). Please select at most 4 answers.
- Radio
 - Television
 - Email
 - Social Media
 - Direct Mail
 - Internet
 - Neighborhood Meeting
 - Signs/Billboards
 - Postings at river, creek or pond

29. People get information from many different sources. Rank the sources that you would most prefer to hear from for community news (such as a river walk clean-up). Please select at most 4 answers.
- Radio
 - Television
 - Email
 - Social Media
 - Direct Mail
 - Internet
 - Neighborhood Meeting
 - Signs/Billboards
 - Postings at river, creek or pond
30. People get information from many different sources. Rank the sources that you would most prefer to hear from for "How To" information (such as how to install a rain barrel). Please select at most 4 answers.
- Radio
 - Television
 - Email
 - Social Media
 - Direct Mail
 - Internet
 - Neighborhood Meeting
 - Signs/Billboards
 - Postings at river, creek or pond
31. People get information from many different sources. Rank the sources that you would most prefer to hear from for notices (such as upcoming dates for recycling hazardous chemicals). Please select at most 4 answers.
- Radio
 - Television
 - Email
 - Social Media
 - Direct Mail
 - Internet
 - Neighborhood Meeting
 - Signs/Billboards
 - Postings at river, creek or pond

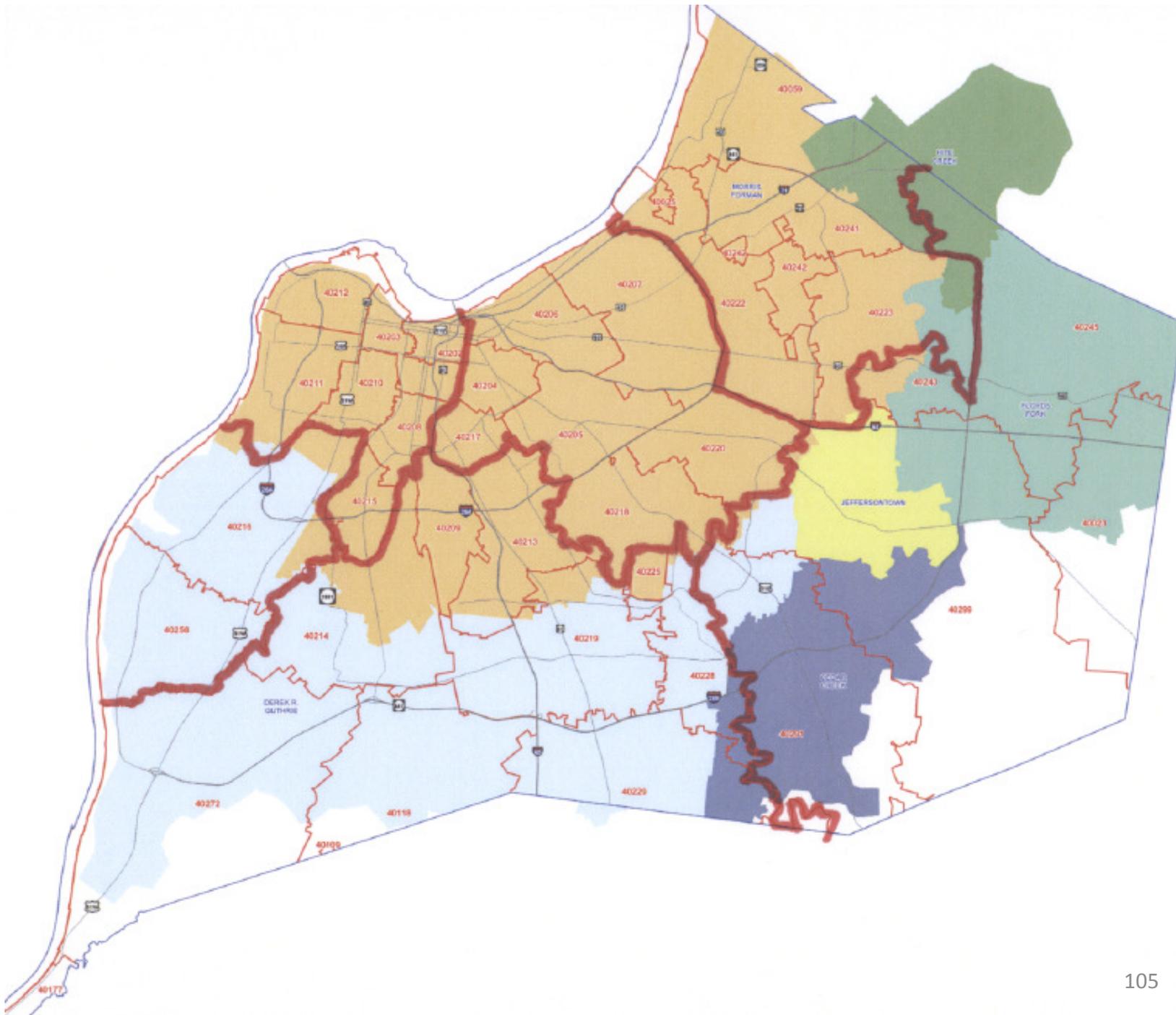
32. Do you read newsletters that are included in your monthly bills?
- Yes
 - No
33. What does the Metropolitan Sewer District (MSD) do for your community? (Open response)
34. What is your opinion of MSD?
- Positive
 - Somewhat positive
 - Neutral
 - Somewhat negative
 - Negative
35. MSD helps your community manage its sewer system and protect the health of the river, creeks and ponds. What role do you think MSD should take in helping residents reduce the household causes of waterway pollution? (Open response)
36. What was your age on your last birthday?
37. Are you:
- Female
 - Male
38. How many children do you have in your household:
- a) Age 0-6:
 - b) Age 7-12:
 - c) Age 13-18:
39. What is your highest level of education?
- Some high school
 - High school graduate
 - Some college
 - College graduate
 - Masters or post graduate

40. What is your household income?
- Less than \$20,000 per year
 - \$20,000 to \$39,999 per year
 - \$40,000 to \$59,999 per year
 - \$60,000 to \$89,999 per year
 - \$90,000 or more per year
41. Do you rent or own your residence?
- Rent
 - Own
42. What is your ZIP code?
43. Do you own a dog?
- Yes
 - No
44. Do you use yard/landscape fertilizer?
- Yes
 - No
45. If you would like to be entered into a drawing for a prize, please provide your name, email address, and phone number so that we may contact the winners.
- a) Name:
 - b) Email:
 - c) Phone Number:
46. What device are you using to take this survey?
- PC or laptop
 - Tablet
 - Smartphone

Appendix B – Zip Code Segmentation Maps

MSD Sewer Service Areas By Zip Codes

Jefferson County, Kentucky



Legend

Major Roads

- Interstate
- Major Arterial
- Minor Arterial
- Zip Codes

Sewer Service Areas

- CEDAR CREEK
- DEREK R. GUTHRIE
- FLOYD'S FORK
- HTS CREEK
- JEFFERSON TOWNS
- MORRIS FORMAN

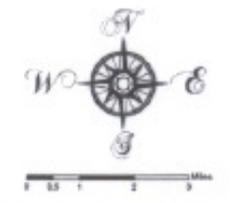
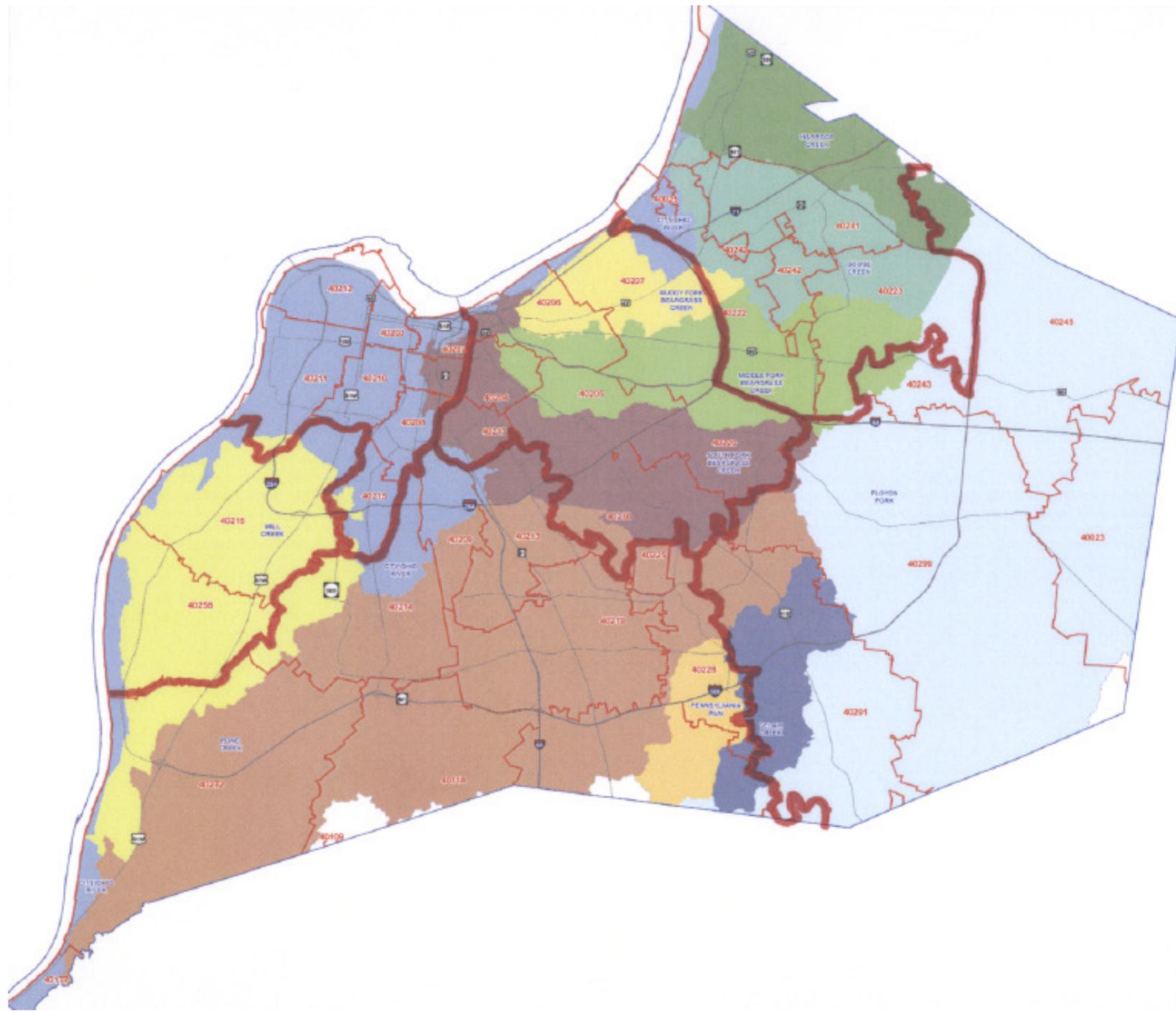


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Watersheds By Zip Codes

Jefferson County, Kentucky

- Legend**
- Major Roads**
- Interstate
 - Major Arterial
 - Minor Arterial
- ZIP Codes**
- Watersheds**
- CEDAR CREEK
 - CITY/HIO RIVER
 - FLOYDS FORK
 - GOOSE CREEK
 - HARRIS CREEK
 - MIDDLE FORK BEARGRASS CREEK
 - MILL CREEK
 - MUDDY FORK BEARGRASS CREEK
 - PENNSYLVANIA RUN
 - POND CREEK
 - SOUTH FORK BEARGRASS CREEK



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