

Lake Charlevoix Social Indicators Study

Shoreline Property Owners Survey Report

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Grenetta Thomassey, PhD, Watershed Policy Director
Chris Anderson, Project Coordinator



Survey distribution summary

Survey dates: July-September 2019

Surveys sent: 770
Undeliverable: 59
Deliverable addresses: 711
Responses: 238 (33%)

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Key Findings from the Lake Charlevoix Watershed Shoreline Property Owners Survey

INTRODUCTION

Tip of the Mitt Watershed Council conducted a series of three surveys in the Lake Charlevoix Watershed during 2019-2020 with watershed residents, shoreline property owners, and local officials. These were done as a follow up to a similar series of surveys among the same three groups, done in 2010-2011, in partnership with Michigan State University Extension (MSUE). The original surveys were reviewed by MSUE, the Watershed Council, and the Lake Charlevoix Watershed Plan Advisory Committee members to see what residents and local officials were worried about, and what topics they needed more information about regarding water quality in the region.

After updating the Watershed Management Plan and implementing a number of projects related to what we heard from the original survey respondents, we administered the latest series. The questions asked were identical to the questions in the earlier surveys; however, some new questions were also added. The results will highlight any measurable changes, and help guide the direction of future project and education efforts to protect the water quality of the Lake Charlevoix Watershed.

METHODOLOGY

Both the original and the most recent survey series used a "five wave design." In this method, a pre-survey letter was mailed first. One week later, the survey with a cover letter and self-addressed stamped envelope was sent to shoreline property owners. A reminder postcard was mailed two weeks after the first survey mailing to all non-respondents. A second survey with a cover letter and self-addressed stamped envelope was sent to non-respondents around two weeks after the postcard reminder. A final reminder letter was sent to the shoreline property owners who had not responded two weeks after the second survey.

So that respondents were not sent duplicate surveys, a tracking number was placed on the corner of every survey. When the survey was returned, the number was cut off and separated from the survey. This ensured that the tracking number and survey answers could be entered without being able to associate any survey answers to a specific person.

Below are the key findings of the 2019 survey of shoreline property owners.

Information shown in italics below will summarize the comparison between the two surveys.

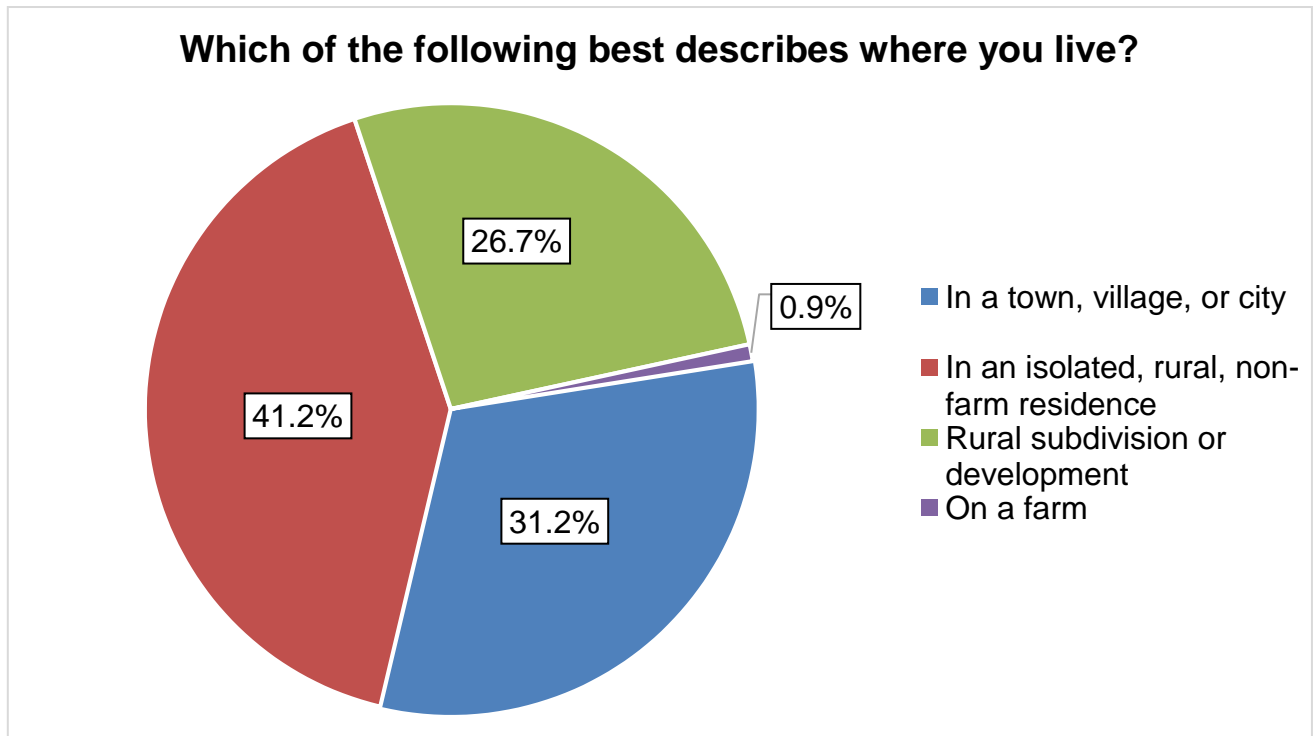
WHO RESPONDED?

In 2011, the overwhelming majority – 99% – of the responses came from homeowners, with only 1% responding that they are renters. The first survey also had an average age of 64 years old. In 2019, 100% reported owning their shoreline property, and the average age of survey respondents was a bit older, at 68 years old. The majority in 2019 were male; 69% as compared to 71% male in the original survey.

In 2011, 34% of respondents used their shoreline property on Lake Charlevoix as their primary residence, and 66% noted it was a secondary residence. 23% were year-round residents, and the rest of the respondents resided there occasionally, or for some part of the year. Interestingly, in 2019, 40% responded this was their primary residence, an increase of 6%. Respondents to the first series of surveys had more education than the general area population, with an amazing 82% reported having a 4-year college or graduate degree. The respondents this time were also a highly educated group, with 83% having college or graduate degrees.

To summarize, the new survey respondents were also a majority of homeowners; 4 years older, on average, than prior survey respondents; and 2% more females, who were still a minority in submitting answers. Both surveys represented highly educated respondents. In 2011, one-third of respondents lived in a city, village, or township. Survey results in 2019 show 31% live "in a town, village, or city" so this is about the same. See Chart 1. In 2019, 6% more respondents called their shoreline property their primary residence.

Chart 1.



RESULTS

SHORELINE OWNERS BELIEVE OUR WATER QUALITY IS GOOD

In the original survey series, shoreline property owners rated the quality of our water for boating, scenic beauty, activities near water, and swimming as “good.” 89% of respondents knew where the water went after it ran off their property.

Overwhelmingly, in 2019, shoreline property owners also rate the quality of our water for those same activities as “good.” This indicates not much change in attitudes or beliefs about our water quality. 92% know where the water goes when it runs off their property, a 3% increase in awareness.

WATER QUALITY IS GOOD ECONOMICS

Both sets of surveys indicated that a clear majority of shoreline property owners agree it is not okay to reduce water quality to promote economic development. In 2011, over 80% agreed or strongly agreed with the following statements, and in 2019 these were also statements with which over 80% of respondents agreed or strongly agreed:

- It is important to protect water quality even if it slows economic development
- Quality of life in the community depends on good water quality in lakes, rivers and streams

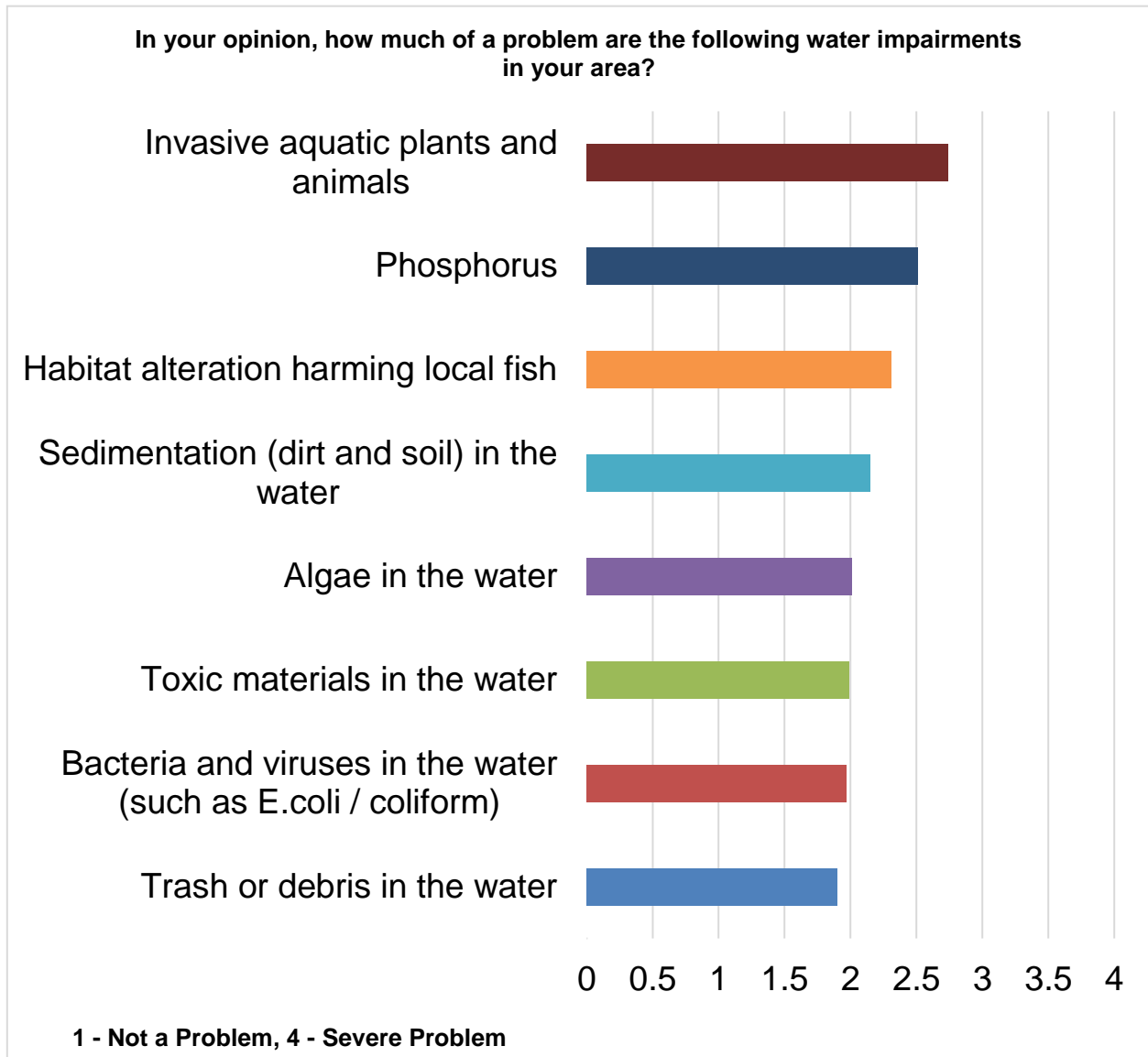
Who pays, though, was another matter. *In 2011, only 41% agreed or strongly agreed that they would be willing to pay more to protect water quality (for example, through increased taxes and fees) and 30% were neutral. In 2019, this increased to 47% with 33% being neutral, indicating a bit less resistance.*

WATER IMPAIRMENTS

Water pollutants and impairments such as sediments, phosphorus, bacteria and viruses, trash, toxic materials, algae, invasive species, and habitat alteration are potential risks in Michigan waters. These were all presented in the surveys for respondents to rank in terms of threat. In 2011, watershed residents generally believed that there were no severe impairments to the Lake Charlevoix Watershed. We find similar results in 2019.

In 2011, invasive aquatic plants and animals was viewed as the biggest problem, in terms of water impairments. It was rated by 51% as a moderate or severe issue. Similarly, in 2019, the most severe problem is again noted to be invasive aquatic plants and animals by 49%. This is encouraging, because invasive species do pose a significant challenge and shoreline property owners continue to have a general knowledge of this danger. The Watershed Plan Advisory Committee members should continue all educational efforts in this regard, because they are fostering an awareness of the invasive species issue.

Chart 2.



A fairly high percentage of respondents in 2011 didn't know if a listed impairment was a problem or not, especially phosphorus, toxics, bacteria and viruses, and fish habitat – all impairments that are not easy to see. For example, 53% did not know if phosphorus is a problem, and 52% didn't know how much of a threat was posed by toxic materials.

In 2019, it again shows a significant portion of respondents who "don't know" whether an option poses a threat to the Watershed - a similar range to a decade ago. For example, over 58% again responded that they don't know if phosphorus or toxic materials are a threat. This is slightly higher than in 2011, indicating more education is needed on these topics for shoreline property owners.

SOURCES OF WATER POLLUTION

In 2011, respondents also said that most sources leading to water pollution were only slight problems. Once again, a significant percentage (range of 22% to 57%) said they “don’t know” if a particular source of pollution was a problem or not.

In 2019, no source of water pollution listed was deemed “severe” by respondents, with no item listed higher than 17% as a severe source of pollution. *52% of Lake Charlevoix Watershed shoreline property owners do believe the “Excessive use of lawn fertilizers and/or pesticides” is either a “slight” or “moderate” problem. This is the exact same rate as the response in 2011.*

Additionally, in 2019, 50% said “Soil erosion from shorelines and/or streambanks” have become “slight” or “moderate” problems that can cause water pollution. Only 40% responded the same way in 2011, so this is a 10% increase in response rate to this question. This indicates an increased awareness of the importance of shoreline and streambank stabilization, and education and outreach should continue on the topic.

Next the surveys addressed the consequences of water pollution. The issues of beach closures, contaminated fish, loss of desirable fish species, algae, reduced beauty, or reduced opportunities for recreation are all possible problems presented in both surveys. The results from 2011 reflected that shoreline property owners didn’t think that these were big concerns. *By contrast, in 2019, most concerns were at least slightly elevated. Lake Charlevoix Watershed shoreline property owners now believe the “Loss of desirable fish species” and “Excessive aquatic plants or algae” are becoming moderate problems in the area. They also elevated every listed consequence to being more moderate or severe problems than reflected in 2011, except for “beach closures.”*

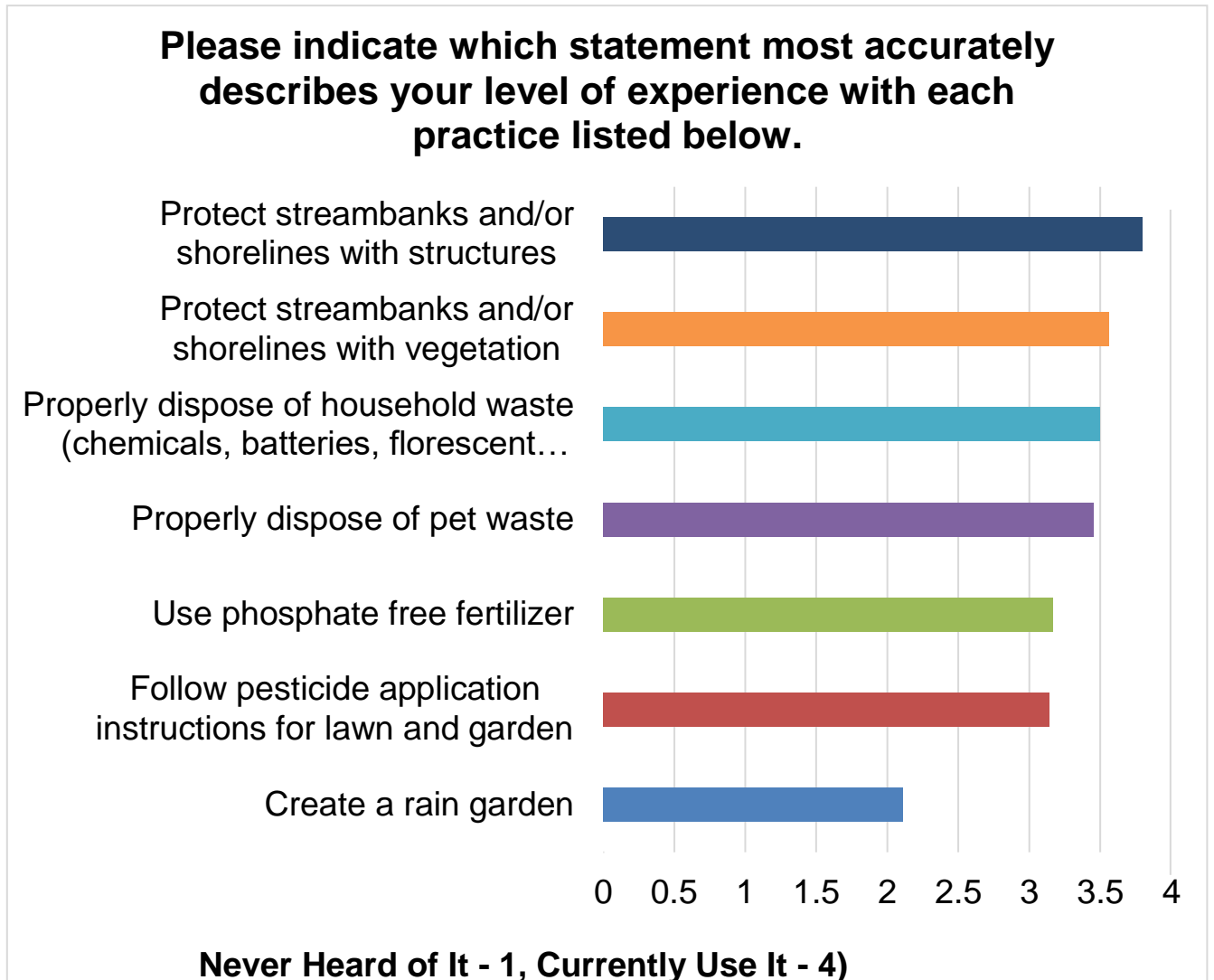
In spite of expressing confidence earlier that water quality remains good, these questions reflect growing concerns about water quality, and education and projects directed at improving habitat and managing aquatic plants, in addition to stormwater runoff, would likely resonate with shoreline property owners in the watershed.

PRACTICES TO IMPROVE WATER QUALITY

In 2011, 95% believed that the way they care for their lawn and garden can influence water quality, and it is their personal responsibility to help protect water quality. In 2019, these responses remained consistent. Those who “strongly agree” went from 95% to 97% for both questions.

In both survey series, respondents were given a list of practices to protect water quality, ranging from following instructions for pesticides to installing a rain garden. In 2011, the most common practices shoreline property owners used to improve water quality were: properly dispose of household waste (8 of 10), ensure no planting of trees/shrubs over septic systems (7 of 10), and properly dispose of pet wastes (6 of 10). In 2011, they were least familiar with the practices of creating a rain garden and using a vegetated buffer. *In 2019, the shoreline property owners have increased awareness of or experience with all stated practices to improve water quality, except for “Create a Rain Garden”, which is still less known (See Chart 3).*

Chart 3.



SPECIFIC PRACTICES

Shoreline property owners were asked in detail about other specific practices, including regular septic system servicing and vegetated riparian buffers.

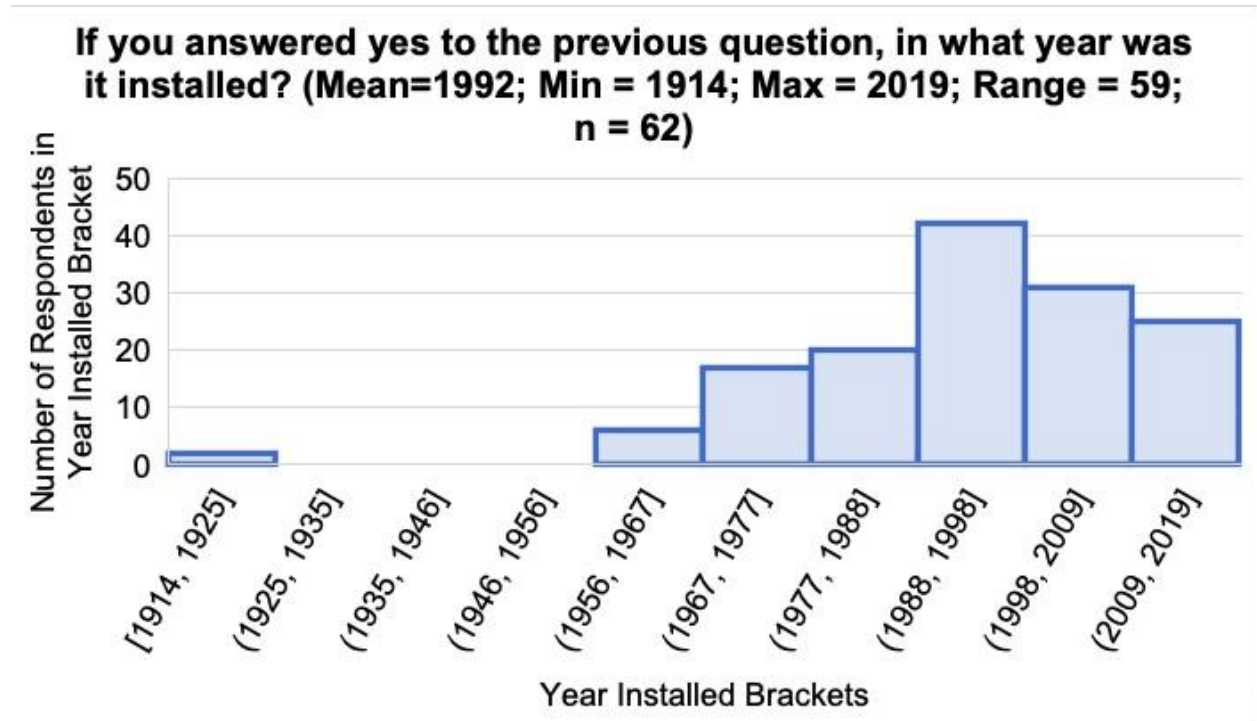
Septic Systems

In 2011, 70% of shoreline property owner respondents who had septic systems already used the practice of regularly pumping septic system tanks. 2019 responses were even better, with 82% stating that they regularly pump septic system tanks. This is a win because the Watershed Council and the Health Department teamed up in the intervening years between survey series to do lots of education and outreach on this topic using the Septic Question Project, which addresses water quality concerns.

For the survey in 2019, an entire section was added to collect more information on septic systems in the watershed. The rest of the responses in this section apply only to the 2020 survey series, since these questions were not asked in 2011.

Of the respondents in 2019, the majority had septic systems (Chart 4), and when asked what year they were installed, responses ranged from 1914 to 2019. Most had been installed in the late 1980s, meaning some of them have definitely exceeded expected life spans for septic systems of 25-30 years.

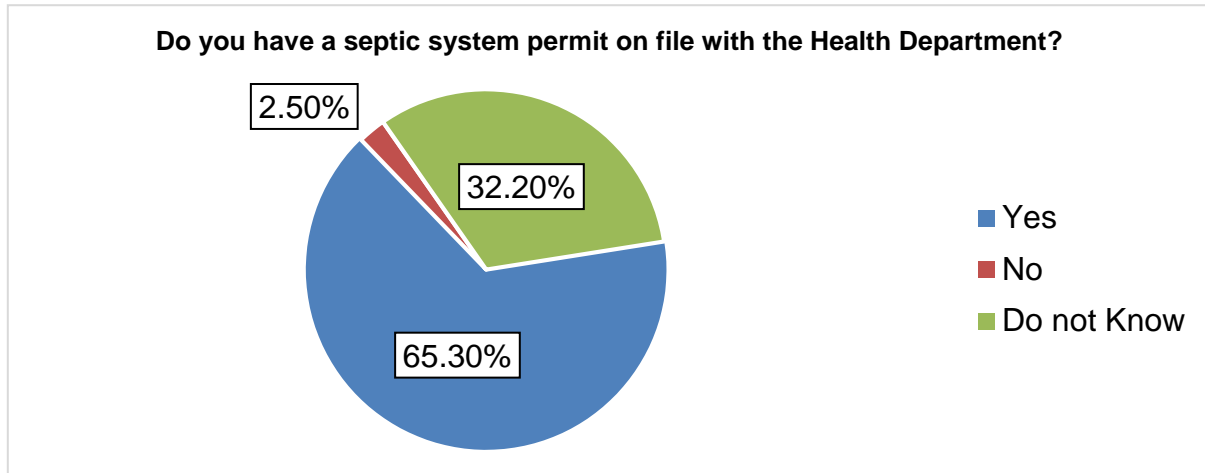
Chart 4.



When asked if they know the location of their septic tank and drainfield, 96% said yes and 4% said they do not know. 85% of all who have septic systems reported no troubles. The remaining 15% reported having issues and noted more than one problem: slow drains, sewage backup in the house, bad smells near tank or drainfield, sewage on the surface, or a frozen septic. Because there are no laws in the state or locally in this watershed to regularly inspect septic systems, those 15% having issues may go uncorrected for too long to prevent pollution.

Unfortunately, the respondents do not see a need for septic system oversight by the Health Department. When asked if they wanted a reminder from the Health Department to get septic systems pumped or inspected, 64% said no; 27% said yes; and 9% said they did not know. Interestingly, when asked if respondents had a septic system permit on file with the Health Department, 65% said yes; 3% said no; and a whopping 32% did not know (Chart 5).

Chart 5.



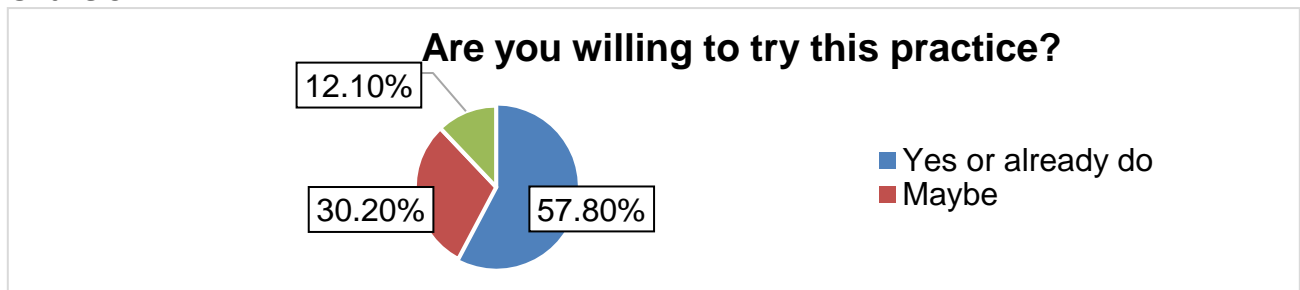
Since 85% of septic system owners have not had problems, the prevailing attitude is that things are fine. However, given the research done on this topic by the Watershed Council over the past few years, and the improvements seen related to pumping regularly for both watershed residents and shoreline property owners, this is a topic that should build upon the outreach and education effects of the Septic Question Project.

Vegetated Riparian Buffers

For vegetated riparian buffers in 2011, 47% said they currently use it. Those who do not use it said they never heard of it; were somewhat familiar; they know how to use it but do not; or it is not relevant. If not relevant, seawalls were noted, but also many responded that they are keeping the shoreline natural, or they had a beach. 66% said they are willing to use this practice or already do.

In 2019, 41% of the shoreline property owners responded that they currently use vegetated riparian buffers, and 58% said they are willing to use it or already do. These are both slightly lower than in 2011. 30% answered "maybe" when asked if they were willing to try this practice in 2019 – exactly the same response as in 2011.

Chart 6.



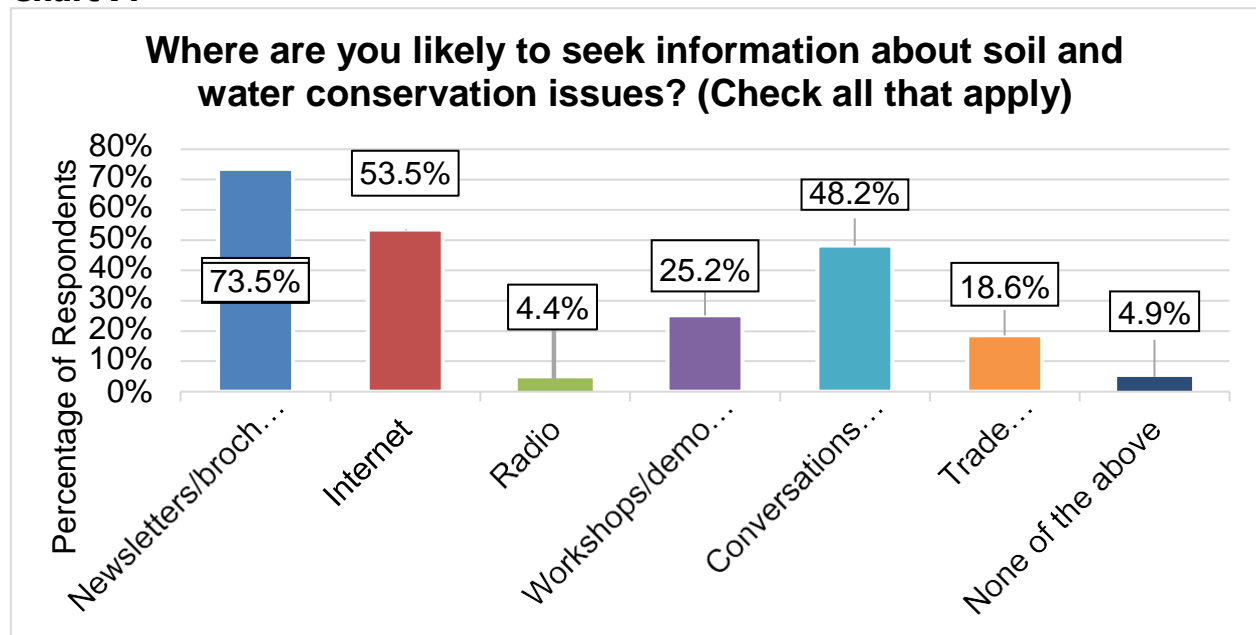
WHERE DO YOU SEEK WATER QUALITY INFO?

When asked in 2011 where respondents find information about water quality, the following methods were noted, and several people listed more than one. A majority responded newsletters, brochures, and fact sheets (71%), followed by 45% who said the Internet. Newspapers/magazines and workshops/demonstrations/meetings each

got over 40%. Their most trusted sources for information were: Lake Charlevoix Watershed Project (Watershed Plan Advisory Committee); the Lake Charlevoix Association; MSU Extension; Little Traverse Conservancy; and Tip of the Mitt Watershed Council.

When asked where respondents find information about water quality in 2019, the following methods were noted and results were similar (Chart 7). A majority listed newsletters, brochures, and fact sheets (74%), followed by 54% who said the Internet. This was followed by conversations with others at 48%; workshops/demonstrations/meetings were noted by 25%. Only 4% listed radio. The most trusted sources of information were the same as in 2011.

Chart 7.



APPENDIX: RAW DATA RESPONSES

Shoreline Property Owners

Lake Charlevoix Watershed Social Indicators Study

Rating of Water Quality

Overall, how would you rate the quality of the water in your area?

	N	Poor (1)	Okay (2)	Good (3)	Don't Know	Mean (SD)
a. For canoeing/kayaking/other boating	234	0	0.9	98.7	0.4	2.99 (0.09)
b. For eating locally caught fish	196	3.4	11.1	69.2	16.2	2.79 (0.5)
c. For swimming	235	0.4	13.6	86	0	2.86 (0.36)
d. For picnicking and family activities	233	0	2.1	97	0.9	2.98 (0.15)
e. For fish habitat	191	3	23.5	55.1	18.4	2.64 (0.55)
f. For scenic beauty	234	0	2.1	97	0.8	2.98 (0.14)

Your Water Resources

1. Do you know where the water goes when it runs off of your property?

8.3 No, I don't know.

91.7 Yes, it goes to _____[not yet compiled]_____

N=229

Your Opinions

Please indicate your level of agreement or disagreement with the statements below.

	N	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)	Mean (SD)
a. The way that I care for my lawn and yard can influence water quality in local streams and lakes.	234	0.9	0.4	2.1	39.7	56.8	4.51 (0.65)
b. It is my personal responsibility to help protect water quality.	236	0.8	0	2.5	39	57.6	4.53 (0.64)
c. It is important to protect water quality even if it slows economic development.	236	0.8	2.5	8.1	41.5	47	4.31 (0.8)
d. My actions have an impact on water quality.	235	0	1.3	4.3	43.4	51.1	4.44 (0.64)
e. I would be willing to pay more to improve water quality (for example: though local taxes or fees)	235	6	13.6	33.2	34	13.2	3.35 (1.06)
f. I would be willing to change the way I care for my lawn and yard to improve water quality.	233	0.9	6	15.5	47.6	30	4 (0.88)
g. The quality of life in my community depends on good water quality in local streams, rivers and lakes.	236	0.4	0.8	4.2	38.6	55.9	4.49 (0.66)

Water Impairments

Below is a list of water pollutants and conditions that are generally present in water bodies to some extent. The pollutants and conditions become a problem when present in excessive amounts. In your opinion, how much of a problem are the following water impairments in your area?

	N	Not a Problem (1)	Slight Problem (2)	Moderate Problem (3)	Severe Problem (4)	Don't Know	Mean (SD)
a. Sedimentation (dirt and soil) in the water	181	23.7	23.7	25.4	5.2	22	2.15 (0.94)
b. Phosphorus	96	11.2	6.9	14.2	9	58.8	2.51 (1.11)
c. Bacteria and viruses in the water (such as E. coli / coliform)	121	23.7	12.1	10.8	5.6	47.8	1.97 (1.05)
d. Trash or debris in the water	221	35.7	37	16.2	5.1	6	1.9 (0.87)
e. Toxic materials in the water	98	18.8	10.3	7.3	5.6	58.1	1.99 (1.08)
f. Algae in the water	183	27.3	28.1	19.5	4.3	20.8	2.01 (0.9)
g. Invasive aquatic plants and animals	183	7.3	22.7	31.8	16.7	21.5	2.74 (0.9)
h. Habitat alteration harming local fish	129	15	17.1	14.1	9	44.9	2.31 (1.04)

Sources of Water Pollution

The items listed below are sources of water quality pollution across the country. In your opinion, how much of a problem are the following sources in your area?

	N	Not a Problem (1)	Slight Problem (2)	Moderate Problem (3)	Severe Problem (4)	Don't Know	Mean (SD)
a. Discharges from sewage treatment plants	128	32.8	11.2	4.3	6.9	44.8	1.73 (1.05)
b. Excessive use of lawn fertilizers and/or pesticides	177	6.9	14.7	37.5	17.2	23.7	2.85 (0.87)
c. Improperly maintained septic systems	150	9.4	12	28.6	14.1	35.9	2.74 (0.97)
d. Stormwater runoff from rooftops and/or parking lots	165	18.5	21.5	24	6.9	29.2	2.27 (0.96)
e. Stormwater runoff from streets and/or highways	169	17.1	21.4	21.8	12	27.8	2.4 (1.02)
f. Post-development erosion and sedimentation	157	13.7	22.2	23.9	7.3	32.9	2.37 (0.93)
g. Hazardous waste	105	22.7	10.7	6.4	5.2	54.9	1.87 (1.05)
h. Waste storage/storage tank leaks (underground)	99	16.7	12.9	8.2	4.7	57.5	2.02 (1.02)
i. Streambank or shoreline modification/destabilization	175	11.5	17.9	31.5	13.6	25.5	2.63 (0.95)
j. Drainage/filling of wetlands	147	14.7	15.9	19.4	13.4	36.6	2.5 (1.07)
k. Groundwater withdrawal	37	21.2	12.5	8.8	3.8	53.8	1.89 (0.99)
l. Outputs from marinas and/or recreational boats	169	14	28.4	26.2	5.2	26.2	2.31 (0.86)
m. Fueling of boats	175	17.2	28.8	24.5	4.7	24.9	2.22 (0.87)
n. Spills	143	18.4	19.7	16.7	6.4	38.9	2.18 (0.98)
o. Contaminated sediments	102	12.8	11.5	13.7	5.6	56.4	2.27 (1.03)

Consequences of Poor Water Quality

Poor water quality can lead to a variety of consequences for communities. In your opinion, how much of a problem are the following issues in your area?

	N	Not a Problem (1)	Slight Problem (2)	Moderate Problem (3)	Severe Problem (4)	Don't Know	Mean (SD)
a. Beach closures	204	64.7	11.9	7.7	2.6	13.2	1.4 (0.77)
b. Contaminated fish	165	38.7	17.4	6.8	7.2	29.8	1.75 (1)
c. Loss of desirable fish species	166	21.5	15	23.2	11.6	28.8	2.35 (1.08)
d. Reduced beauty of lakes or streams	219	53.7	24.7	10	6.5	5.2	1.68 (0.92)
e. Reduced opportunities for water recreation	213	63.4	16.2	6.8	4.3	9.4	1.47 (0.83)
f. Excessive aquatic plants or algae	204	21.3	34.5	21.3	9.8	13.2	2.23 (0.95)

Practices to Improve Water Quality

Please indicate which statement most accurately describes your level of experience with each practice listed below.

	N	Not relevant for my property	Never Heard Of It (1)	Somewhat familiar with it (2)	Know how to use it; not using it (3)	Currently Use It (4)	Mean (SD)
a. Create a rain garden	172	26.2	25.3	23.6	16.3	8.6	2.11 (1.01)
b. Follow pesticide application instructions for lawn and garden	183	20.4	0.9	10	17	51.7	3.5 (0.76)
c. Use phosphate free fertilizer	181	21.6	9.1	11.7	16.9	40.7	3.14 (1.06)
d. Properly dispose of pet waste	142	39.6	3.4	4.3	7.7	45.1	3.56 (0.85)
e. Properly dispose of household waste (chemicals, batteries, florescent light bulbs, etc.)	214	8.2	0.9	5.6	4.3	81.1	3.8 (0.58)
f. Protect streambanks and/or shorelines with vegetation	191	17.7	2.6	13.8	10.3	55.6	3.45 (0.88)
g. Protect streambanks and/or shorelines with structures	163	30.3	9	9	12.8	38.9	3.17 (1.09)

Your Opinions about Specific Practices

Follow Fertilizer instructions: Following the manufacturer's instructions when fertilizing lawn or garden

1. How familiar are you with this practice? N=222

- 17.60% Not relevant
- 1.80% Never heard of it
- 8.10% Somewhat familiar with it
- 14.40% Know how to use it; not using it
- 58.10% Currently using it

2. If the practice is not relevant, please explain why.

3. Are you willing to try this practice? N=183

- 85.80% Yes or already do.
- 8.20% Maybe
- 6% No

<i>How much do the following factors limit your ability to implement this practice?</i>	N	Not at All (4)	A little (3)	Same (2)	A lot (1)	Don't Know	Mean (SD)
a. Don't know how to do it	135	83.7	0.7	5.4	2	8.2	3.81 (0.64)
b. Time required	135	79.9	4	6	0.7	9.4	3.8 (0.58)
c. Cost	136	68	11.3	7.3	4	9.3	3.58 (0.82)
d. The features of my property make it difficult	138	75.2	8.1	4.7	4.7	7.4	3.66 (0.8)
e. Insufficient proof of water quality benefit	130	76.2	6.1	4.1	2	11.6	3.77 (0.64)
f. Desire to keep things the way they are	138	71.6	9.5	6.8	5.4	6.8	3.58 (0.86)
g. Physical or health limitations	137	81	5.4	3.4	3.4	6.8	3.76 (0.69)
h. Hard to use with my farming system	136	81.9	4	4	1.3	8.7	3.82 (0.57)
i. Lack of equipment	140	83.3	6.7	0.7	2.7	6.7	3.83 (0.57)

Vegetated Riparian Buffer: Establishing vegetation to function as a buffer to water bodies and water courses.

2. If the practice is not relevant, please explain why.

1. How familiar are you with this practice?
 N=224
 9.80% Not relevant
 16.10% Never heard of it
 26.30% Somewhat familiar with it
 6.70% Know how to use it; not using it
 41.10% Currently using it

3. Are you willing to try this practice? N=199
 57.80% Yes or already do
 30.20% Maybe
 12.10% No

<i>How much do the following factors limit your ability to regularly service your septic system (or limit, if you already do)?</i>	N	Not at All (4)	A little (3)	Some (2)	A lot (1)	Don't Know	Mean (SD)
a. Don't know how to do it	139	60.9	8.3	14.1	5.8	10.9	3.4 (0.98)
b. Time required	136	63	10.4	12.3	2.6	11.7	3.51 (0.84)
c. Cost	136	60.6	7.1	12.9	7.1	12.3	3.38 (1.01)
d. The features of my property make it difficult	139	54	8.7	12.4	11.2	13.7	3.22 (1.12)
e. Insufficient proof of water quality benefit	129	67.1	5.8	8.4	1.9	16.8	3.66 (0.76)
f. Desire to keep things the way they are	145	62	8.2	10.8	10.8	8.2	3.32 (1.08)
g. Physical or health limitations	142	77.6	5.8	5.8	1.9	9	3.75 (0.67)
h. Hard to use with my farming system	134	67.7	5.7	8.2	3.2	15.2	3.63 (0.81)
i. Lack of equipment	137	66.5	7.6	8.2	4.4	13.3	3.57 (0.86)

Making Decisions for my Property

In general, how much does each of these issues limit your ability to change your water management practices?

	N	Not at All (4)	A little (3)	Some (2)	A lot (1)	Don't Know	Mean (SD)
a. Personal out-of-pocket expense	204	40.1	17	28.3	10.8	3.8	2.9 (1.08)
b. My own physical abilities	206	56.9	16.6	17.1	7.1	2.4	3.26 (0.99)
c. Not having access to the equipment that I need	200	51	19.7	15.4	10.1	3.8	3.16 (1.04)
d. Lack of available information about a practice	196	48.5	19.9	16.5	10.2	4.9	3.12 (1.05)
e. No one else I know is implementing the practice	171	55.2	11.9	11.9	6	14.9	3.37 (0.97)
f. Approval of my neighbors	187	72.4	9.4	6.4	3.9	7.9	3.63 (0.79)
g. Don't know where to get information and/or assistance about those practices	187	54.5	19.3	11.4	7.4	7.4	3.3 (0.97)
h. Environmental damage caused by practice	139	54.2	8.9	5.8	4.2	26.8	3.55 (0.87)
i. Legal restrictions on my property	164	66.2	5	5.5	5	18.4	3.62 (0.86)
j. Concerns about resale value	184	69.8	7.4	9.4	4.5	8.9	3.57 (0.87)
k. Not being able to see a demonstration of the practice before I decide	179	57.1	11.6	16.2	5.6	9.6	3.33 (0.98)
l. The need to learn new skills or techniques	182	50.3	15.1	21.1	5	8.5	3.21 (0.98)

About You

1. Do you make the home and lawn care decisions in your household?

N=230

92.2 Male

7.8 Female

2. What is your gender?

N=225

68.9 Male

31.1 Female

3. What is your age?

N=215

37 – 90 Range

68.07 Average

4. What is the *highest grade* in school you have completed?

N=224

0.0 Some formal schooling

1.8 High school diploma / GED

8.9 Some college

5.8 2 year college degree

34.4 4 year college degree

49.1 Post-graduate degree

5. What is the approximate size of your residential lot?

N=227

20.3 ¼ acre or less

28.2 More than ¼ acre but less than 1 acre

36.6 1 acre to less than 5 acres

15.0 5 acres or more

6. Do you own or rent your home?

N=231

100.0 Yes

0.0 No

7. How long have you lived at your current residence (years)?

N=226

0 – 118 Range

26.10 Mean

8. Which of the following best describes where you live?

N=221

31.2 In a town, village, or city

41.2 In an isolated, rural, non-farm residence

26.7 Rural subdivision or development

0.9 On a farm

9. Do you use a professional lawn care service?

N=225

20.4 Yes, just for mowing

8.0 Yes, for mowing and fertilizing

9.8 Yes, just for fertilizing and pest control

8.4 Yes, for mowing, fertilizing, and pest control

53.3 No

10. Where are you likely to seek information about soil and water conservation issues? (Check all that apply)?

N=226

73.5 Newsletters/brochure/factsheet

53.5 Internet

4.4 Radio

25.2 Workshops/demonstrations/meetings

48.2 Conversations with others

18.6 Trade publications/magazines

4.9 None of the Above

11. What type of residence do you own/rent on your shoreline property?

N=229

40.2 Primary residence

59.8 Secondary (seasonal)

12. What portion of the year do you live on your shoreline property?

N=228

24.6 Year round

19.3 6 – 11 months

26.3 3 – 5 months

20.6 Less than 3 months

9.2 Occasionally

13. Do you have a seawall on your shoreline?

N=227

37.0 Yes

58.6 No

4.4 Not sure

14. How long is your shoreline?

N=206

0 – 2800 Range

165.19 Average

Information Sources

People get information about water quality from a number of different sources. To what extent do you trust those listed below as a source of information about soil and water?

	N	Not at All (1)	Slightly (2)	Moderately (3)	Very much (4)	Am not familiar	Mean (SD)
a. Lake Charlevoix Watershed Project	204	2.2	4	12.6	72.6	8.5	3.7 (0.67)
b. Lake Charlevoix Association	210	2.3	4.1	15.3	73	5.4	3.68 (0.67)
c. Michigan State University Extension	186	9.2	8.3	14.7	53.2	14.7	3.31 (1.03)
d. Little Traverse Conservancy-Grand Traverse Regional Land Conservancy	191	6.4	5	16.4	59.4	12.8	3.48 (0.9)
e. Tip of the Mitt Watershed Council	205	3.2	4.1	17.6	67.9	7.2	3.62 (0.73)
f. Michigan Department of Natural Resources	208	6.9	14.7	24.3	49.5	4.6	3.22 (0.96)
g. Charlevoix Conservation District	157	10.2	8.8	17.1	36.6	27.3	3.1 (1.09)
h. County Health Department	189	12.4	12.8	23.4	38.1	13.3	3.01 (1.08)
i. Local government	60	22.7	24.2	31.8	12.1	9.1	2.37 (1.01)
j. Michigan Department of Agriculture and Rural Development	155	15	16.4	19.2	22	27.6	2.66 (1.12)
k. Conservation organizations	179	9.7	13	30.6	29.6	17.1	2.97 (0.99)
l. Michigan Department of Environmental Quality	185	12	18.1	23.6	31.9	14.4	2.88 (1.07)
m. U.S. Environmental Protection Agency {USEPA}	177	18	19.4	23.7	22.7	16.1	2.61 (1.1)
n. Neighbors-friends	217	9	31.2	39.4	18.6	1.8	2.69 (0.88)
o. Environmental groups	204	17.3	26.9	36.5	17.3	1.9	2.55 (0.98)
p. Local garden center	190	24.2	29.3	24.7	10.2	11.6	2.24 (0.98)
q. Local community leader	179	24.5	33	21.7	5.2	15.6	2.09 (0.89)
r. Lawn care company	195	34.3	24.5	20.4	11.1	9.7	2.09 (1.05)
s. Tribal Governments	133	35	10.7	10.3	6.1	37.9	1.8 (1.04)

Septic Systems

1. Do you have a septic system?

N=226

16.4 No

0.4 Don't Know

83.2 Yes

2. If you answered 'yes' to the previous question, what year was it installed?

N=143

1914 – 2019 Range

1992 Average

3. Within the last five years, have you had any of the following problems? (Check all that apply)

N=213

4.7 Slow Drains

2.3 Sewage backup in house

4.7 Bad smells near tank or drain field

2.8 Sewage on the surface

0.5 Sewage flowing to ditch

1.9 Frozen septic

2.3 Other

84.5 None

2.3 Don't know

4. In the future, would you like a reminder from your local health department regarding inspection/maintenance of your septic system?

N=210

26.7 Yes

64.3 No

9.0 Don't know

5. Do you have a garbage disposal?

N=223

22.4 Yes, I use it daily

41.3 Yes, I use it occasionally

7.2 Yes, but I don't use it

29.1 No

6. Does your septic system have an absorption field (finger system)?

N=200

61.0 Yes

6.0 No

33.0 Don't Know

7. Is your septic system designed to treat sewage or get rid of waste?

N=195

13.8 Treat Sewage

21.0 Get rid of waste

25.6 Both

5.6 Neither

33.8 Don't Know

8. Do you know the location of your septic tank and drainfield?

N=199

95.5 Yes

2.0 No

2.5 Do not know

9. Do you have a septic system permit on file with the Health Department?

N=199

65.3 Yes

2.5 No

32.2 Do not know

10. Do you pump out your system regularly?

N=200

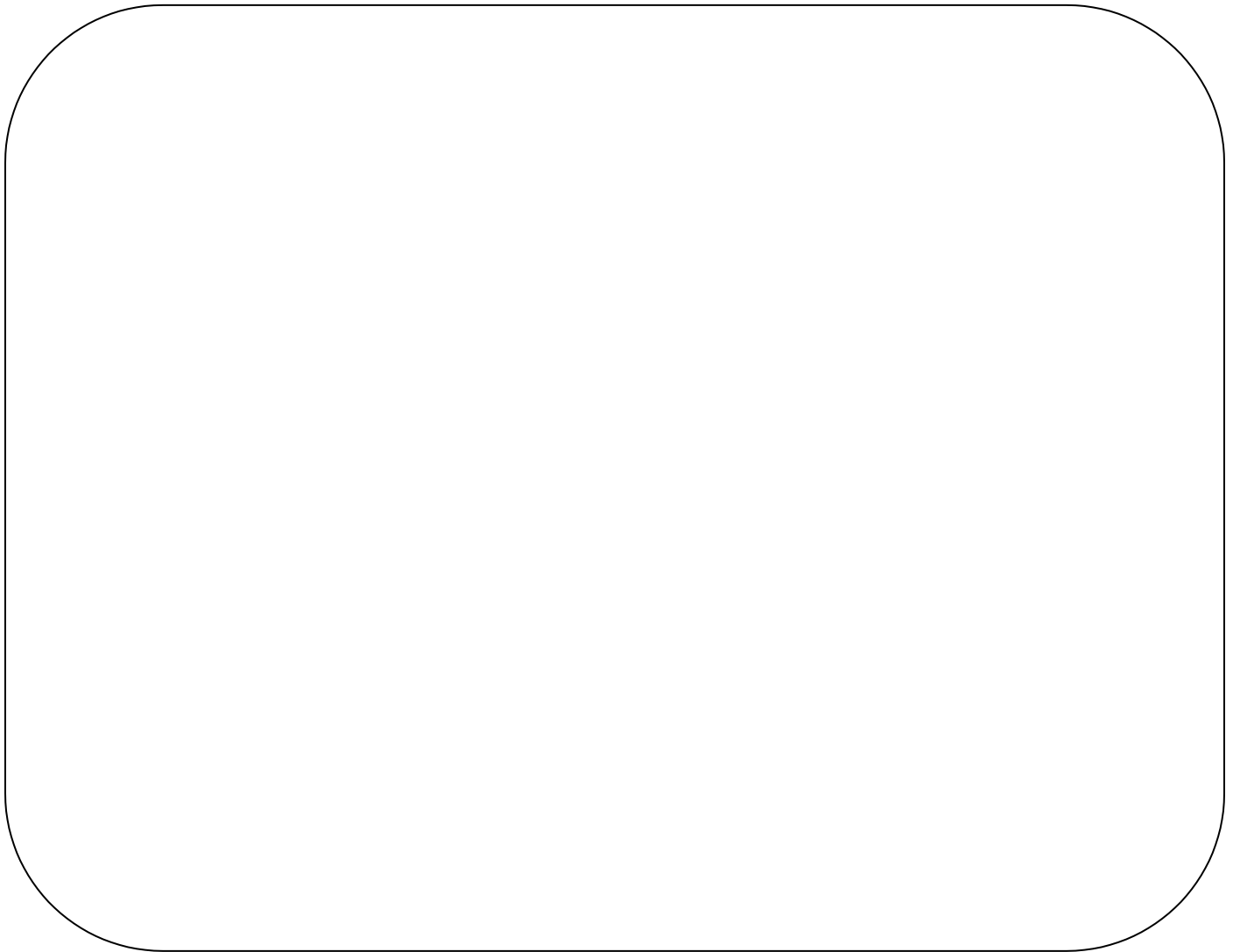
82.0 Yes

14.0 No

4.0 Don't Know

Thank you for your time and assistance!

Please return your completed survey in the postage-paid envelope provided. Please use the space below for any additional comments about this survey or water resource issues in your community.



Project Coordinator:

Grenetta Thomassey

Tip of the Mitt Watershed Council

Phone: (231) 347-1181

Email: grenetta@watershedcouncil.org