



**Macatawa Area  
Coordinating Council**

*A Cooperative Effort Among Units of Government*



Macatawa Area Coordinating Council  
Watershed Report 2014  
September 23, 2014



**Hope** COLLEGE

CARL FROST CENTER FOR  
SOCIAL SCIENCE RESEARCH

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## Executive Summary

The Macatawa Area Coordinating Council (MACC) contracted the Frost Research Center to conduct a survey assessing local residents' knowledge, interest and habits regarding activities affecting area water quality. Four hundred and three respondents completed the telephone survey in July and August of 2014.

Topics in this survey were divided into four subsections:

- Watershed
- Stormwater
- Lawn Care
- Water Quality

General findings regarding each subsection of the survey are as follows:

### Watershed:

- Awareness of watershed and the Macatawa Watershed Project are on the rise.
- Respondents most often use the newspaper as a source of information about local issues and watershed.

### Stormwater:

- Respondents' confidence in defining stormwater has increased and most know that storm drains empty into streams and lakes.

### Lawn Care:

- Lawn Care is important to residents. Eighty-five percent (85%) of respondents take care of a lawn and most do their own lawn care.
- Awareness of the Macatawa Watershed's Seal of Approval for lawn care and landscaping services has decreased in past years.

### Water Quality:

- Residents are more willing than ever before to make some changes that will positively impact water quality.
- Residents are less willing than in past years to pay out of pocket to implement changes that will improve water quality. If funding is provided, residents' willingness increases dramatically.

Water quality and the factors influencing it are important to area residents. Residents are generally more knowledgeable and more willing to make changes that improve and promote water quality in our area than in the past.

## Introduction

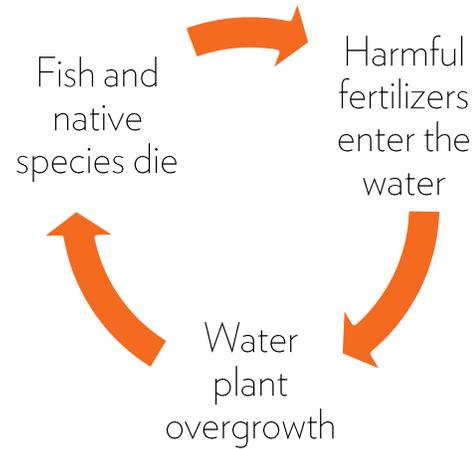
The Frost Research Center was contracted by the Macatawa Area Coordinating Council (MACC) to conduct a survey to assess residents' knowledge and views of watershed issues in the Macatawa area.

The U.S. Environmental Protection Agency defines a watershed as "the area of land where all of the water that is under it or drains off of it goes into the same location." The Macatawa Watershed covers approximately 175 square miles of land and consists of all the land that drains to Lake Macatawa, including all or part of Laketown, Fillmore, Overisel, Holland, Park, Zeeland, Port Sheldon, Olive and Blendon Townships as well as the cities of Holland and Zeeland.



The Macatawa Watershed is experiencing harmful levels of phosphorus, a naturally occurring element present in fertilizer, animal waste, and soils. Excess phosphorus causes too many plants to grow in the water. Plant decay robs the water of oxygen causing fish and plants to die leading to deteriorating water quality.

The Macatawa Watershed Project was created in 1999 with the goal to reduce the amount of phosphorus that enters Lake Macatawa by rain runoff by approximately 70% through public awareness, education, and Best Management Practices.



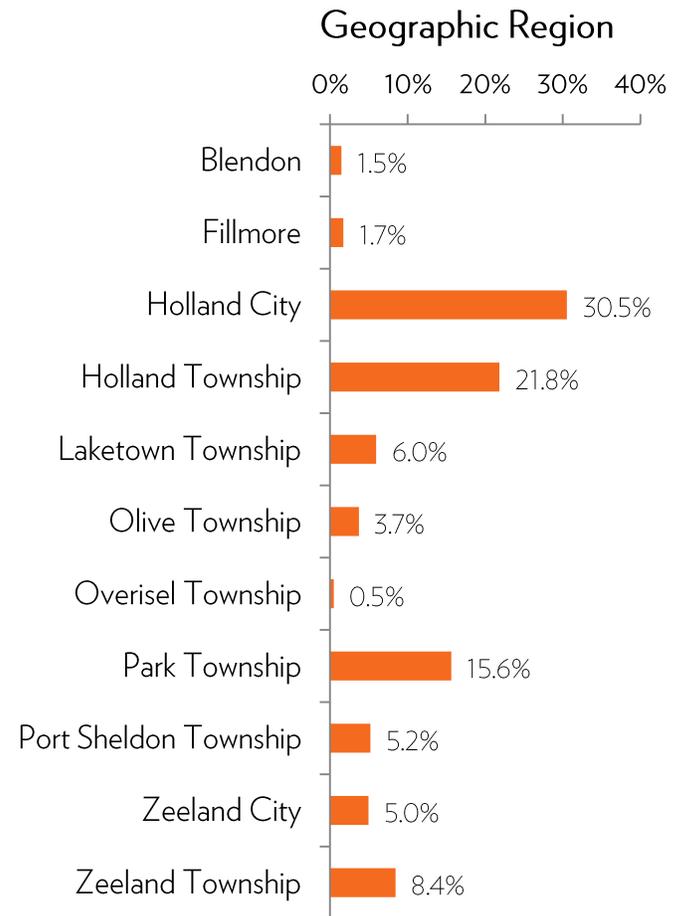
## Methodology

Watershed knowledge and opinions were assessed through a telephone survey. Residents in the Macatawa Watershed area, specifically Blendon Township, Fillmore Township, Holland City, Holland Township, Laketown Township, Olive Township, Overisel Township, Park Township, Port Sheldon Township, Zeeland City, and Zeeland Township participated in the survey.



To reach residents in these areas, two lists of phone numbers were obtained from Survey Sampling Inc.; the first group comprised directory listed numbers whose address fell within the study boundaries, and the second group contained wireless numbers connected to Holland or Zeeland billing centers. Calls were placed by Frost Center staff Monday through Thursday evenings and midday Saturday from July 26, 2014 to September 5, 2014. The survey took approximately five to seven minutes for respondents to complete.

Overall, four hundred and three respondents participated in the survey. All participants lived in the Macatawa Watershed and were divided between the following eleven geographic regions.

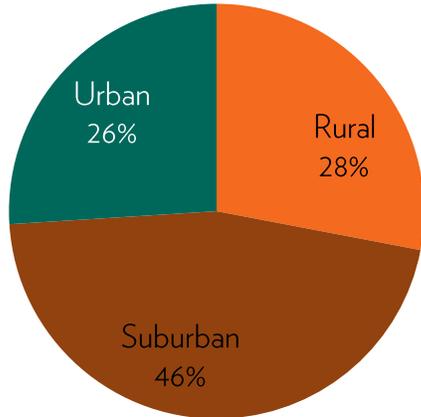


**Figure 1**

The largest percentage (30.5%) of survey respondents reside in the City of Holland. Less than one percent of respondents reside in Overisel Township.

## Demographics

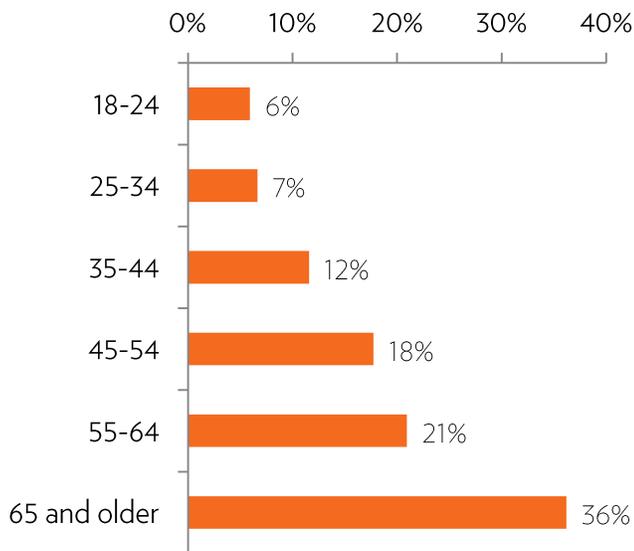
Type of Residential Area



**Figure 2**

Forty-six (46%) of respondents live in a suburban area. Respondents from urban and rural areas made up twenty-six percent (26%) and twenty-eight percent (28%) of survey responses, respectively.

Age

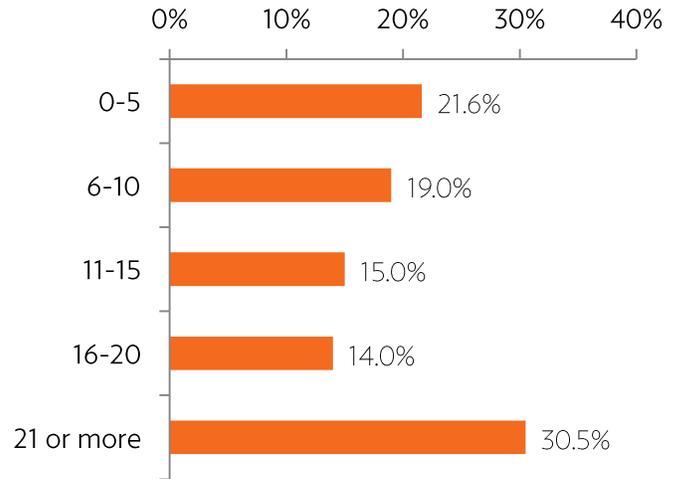


**Figure 3**

Respondents aged 65 and older make up more than a third of survey participants, making this age

group the most common among survey respondents. Six-percent (6%) of respondents were between 18 and 24 years old.

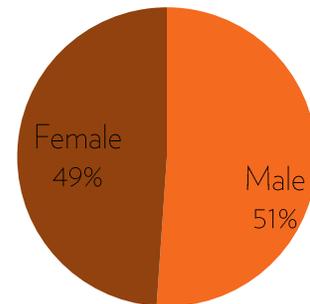
Years in Current Residence



**Figure 4**

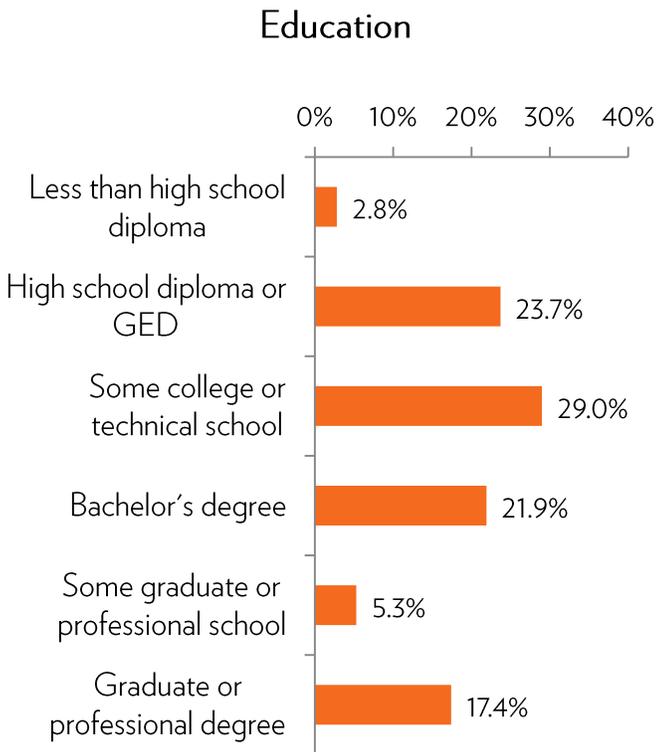
More than thirty-percent (30.5%) of respondents have lived in their current residence 21 years or more. Respondents have lived in their current residence an average of 17 years.

Gender

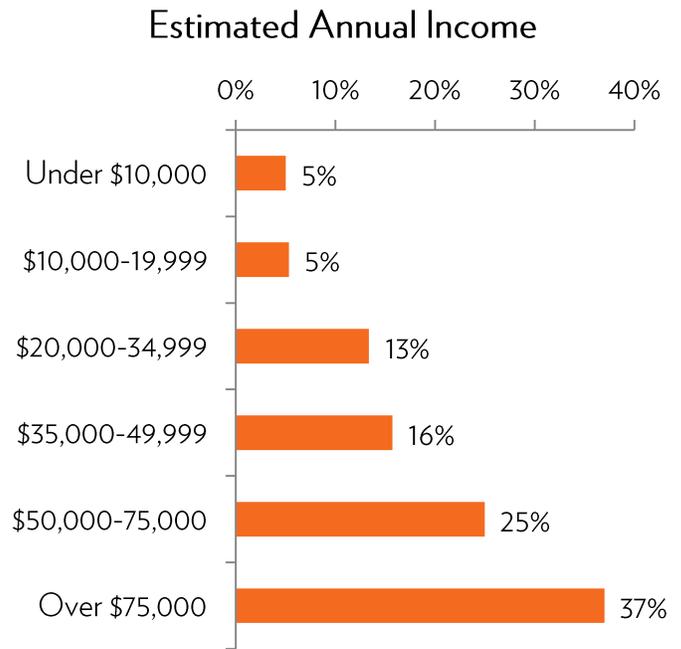


**Figure 5**

A nearly equal amount of males and females completed the survey with males making up fifty-one percent (51%) of respondents and forty-nine percent (49%) being females.



**Figure 6**  
 Survey respondents are well-educated. Seventeen-percent (17.4%) have completed a graduate or professional degree. Twenty-nine (29%) percent of respondents have completed some college or technical school.

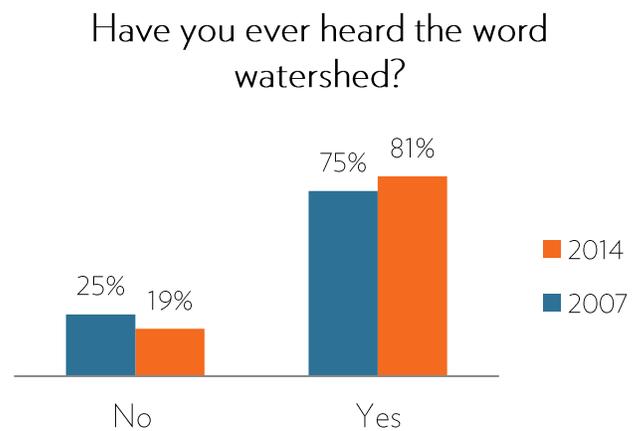


**Figure 7**  
 Well over a third of survey respondents have an estimated annual household income of more than \$75,000. Only ten-percent (10%) earn less than \$20,000 per year.

## Findings

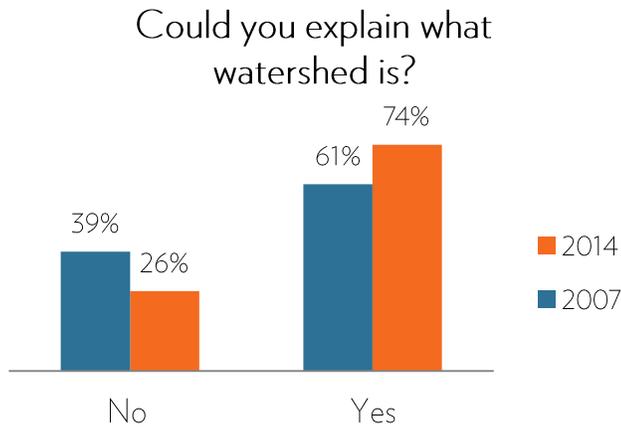
### Watershed

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**Figure 8**  
 More than eighty-percent (80%) of survey respondents have heard of the term “watershed.” This has risen since 2007 when seventy-five

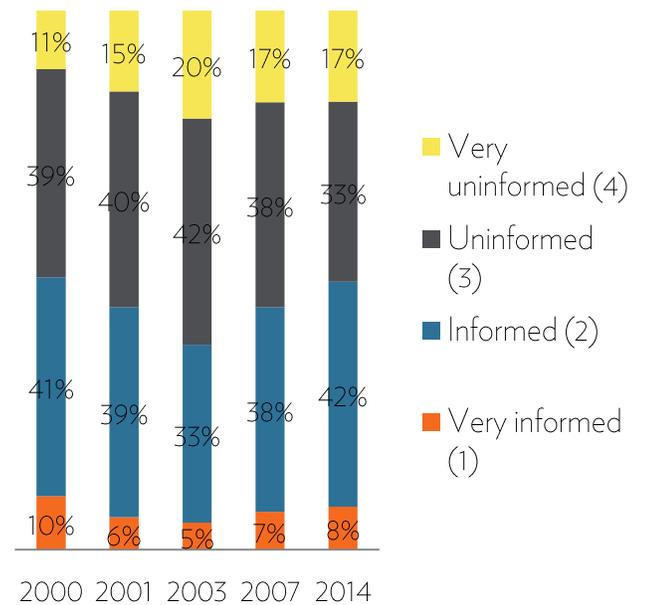
percent (75%) of respondents were familiar with the word.



**Figure 9**

Respondents' confidence in explaining watershed has risen since 2007. Seventy-four percent (74%) of survey respondents feel they could explain what watershed is compared to only sixty-one percent (61%) in 2007. An analysis of respondents' definitions shows the majority (46%) of respondents define watershed correctly, with thirty-five percent (35%) defining it partially correctly and seventeen percent (17%) giving an incorrect definition.

How informed do you consider yourself regarding watershed issues?

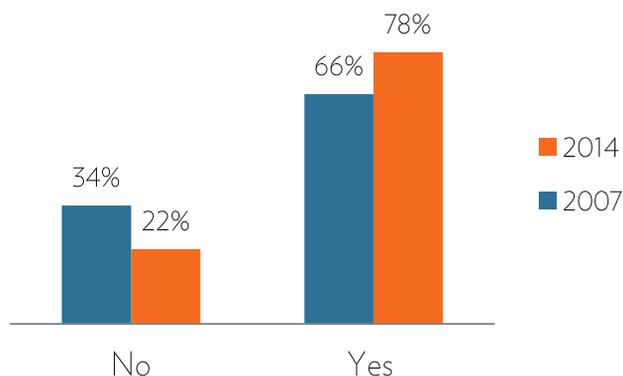


**Figure 10**

Respondents feel more informed about watershed issues now than in past editions of the survey. Respondents considering themselves “informed” or “very informed” have been on the rise since 2003 with 38%, 45%, and 50% with each survey edition identifying as such. The average responses corroborate this. The means for each year are in the table below. The decreasing mean suggests respondents currently feel more informed about watershed than in the past, with the exception of 2000.

Year	Mean
2000	2.52
2001	2.64
2003	2.77
2007	2.65
2014	2.60

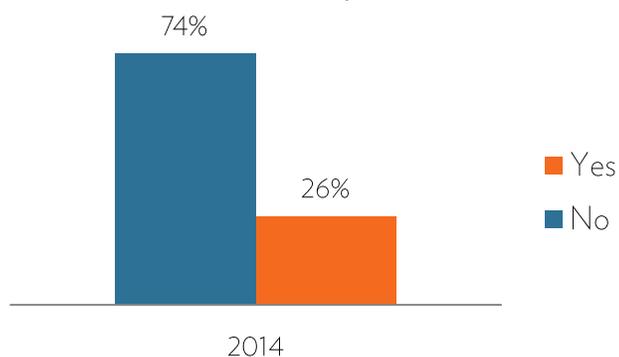
### Have you heard of the Macatawa Watershed Project?



**Figure 11**

Respondents' familiarity with the Macatawa Watershed Project has increased dramatically since 2007. Nearly eighty-percent (78%) of survey respondents had heard of the Project, an increase of 12% points since 2007.

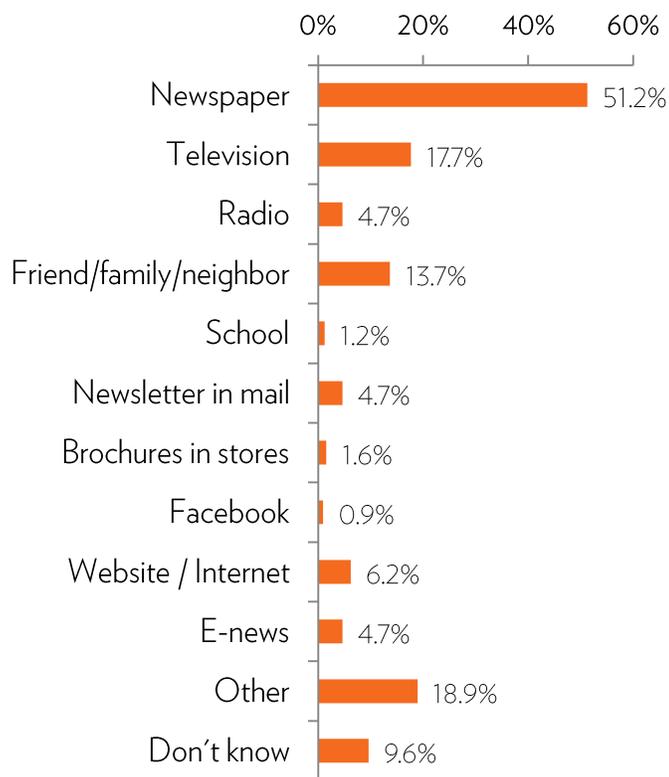
### Have you heard of Project Clarity?



**Figure 12**

Much fewer respondents were aware of Project Clarity. A mere twenty-six percent (26%) of respondents recognized this name.

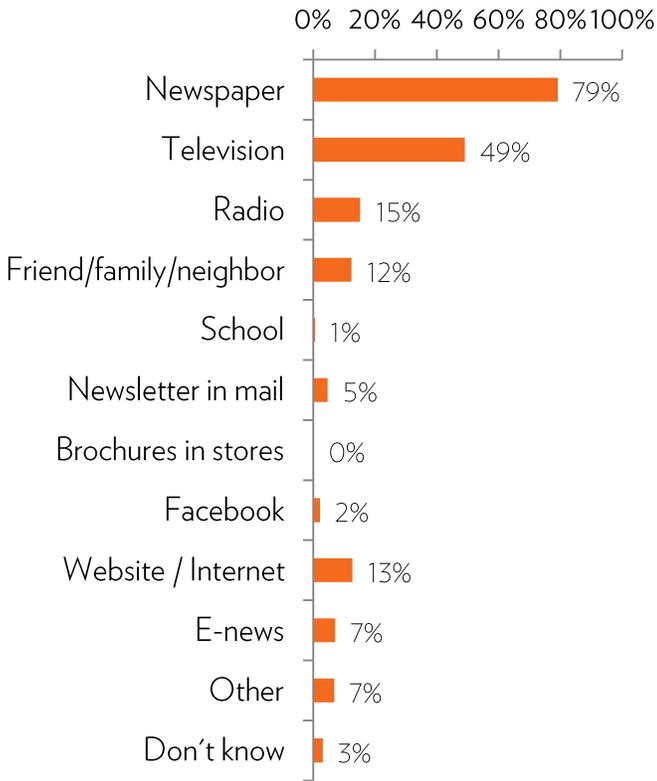
### Where do you get information about the watershed?



**Figure 13**

The newspaper is cited most often as respondents' source of information about watershed issues. Other sources of information respondents listed include workplace, community centers or agencies (MACC, Outdoor Discovery Center) and public education events in the area. Web-based sources about watershed were not highly utilized. However, we must keep sample demographics in mind as more than a third of respondents were aged 65 and older.

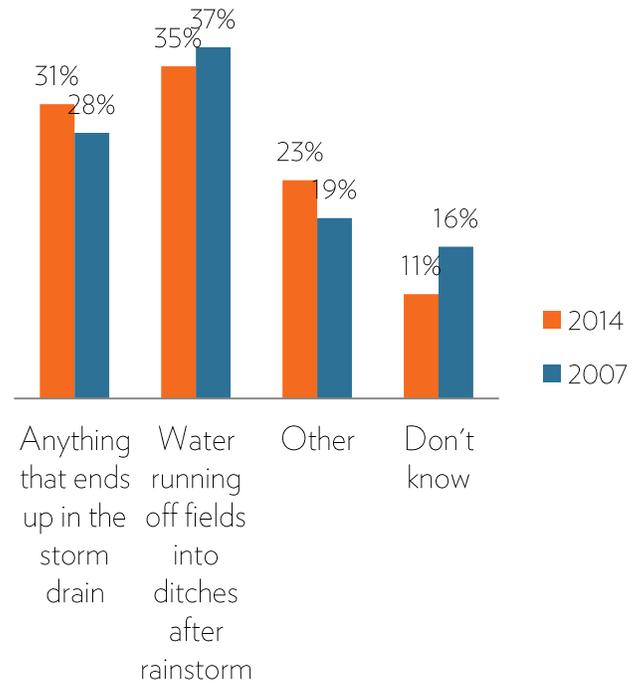
Where do you get information about local issues?



**Figure 14**

Respondents report receiving most of their information regarding local issues from the newspaper (79%) and television (49%). Fifteen-percent (15%) and thirteen-percent (13%) of respondents reported the radio and the internet as being a source of information about local issues.

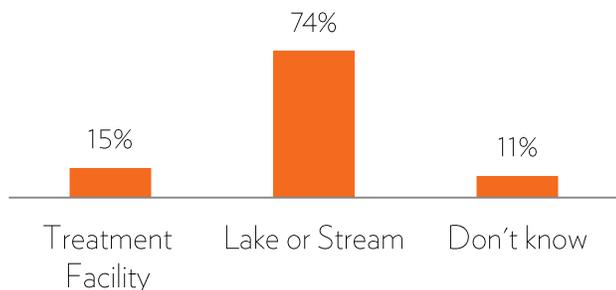
How would you define "stormwater"?



**Figure 15**

Most survey respondents defined "stormwater" as "water running off fields into ditches after a rainstorm." The percentage of respondents that answered this way fell two percentage points (2%) from 2007. Thirty-one percent (31%) of respondents answered "anything that ends up in the storm drain," an increase from twenty-eight percent (28%) in 2007. Frequent other definitions include "water from a storm," "rain water" and "drainage water."

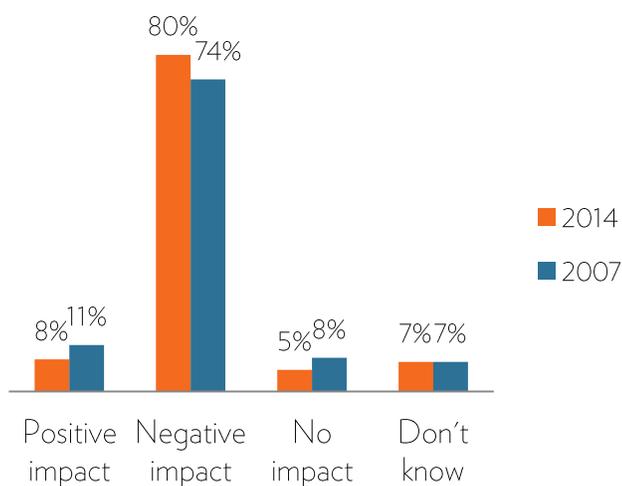
### Where does rain or snowmelt go after it enters a storm drain?



**Figure 16**

Most participants (74%) know that rain and snowmelt run to a lake or stream after it enters a storm drain. A smaller proportion of respondents (15%) answered that it travels to a treatment facility after entering a storm drain.

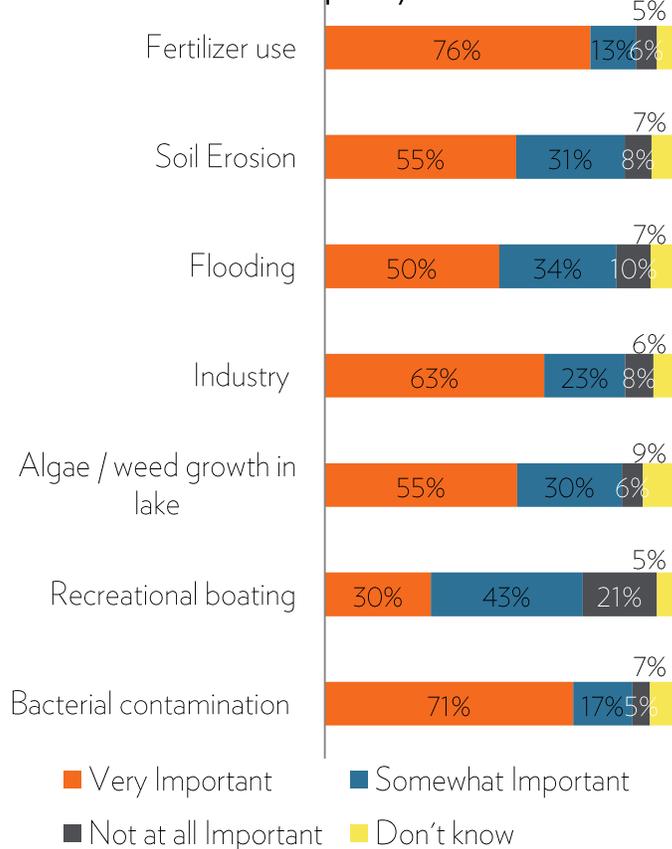
### Impact of impervious surfaces on water quality



**Figure 17**

Respondents were given an explanation of impervious surfaces and asked their effects. Most (74%) answered that impervious surfaces had a negative impact on water quality. Only eight percent (8%) thought these surfaces had a positive effect on water quality. Overall, survey respondents were more educated about these surfaces' impacts on water quality than in 2007.

### How important to Macatawa water quality is...

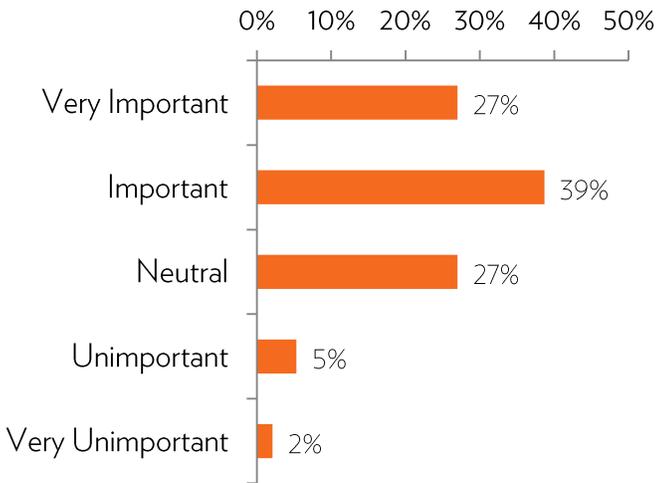


**Figure 18**

Respondents most often cited fertilizer use (89%) and bacterial contamination (88%) as being “very important” and “somewhat important” in their impact on water quality of Lake Macatawa and its tributary river. A much smaller percentage (73%) felt that recreational boating is important to water quality.

## Lawn Care

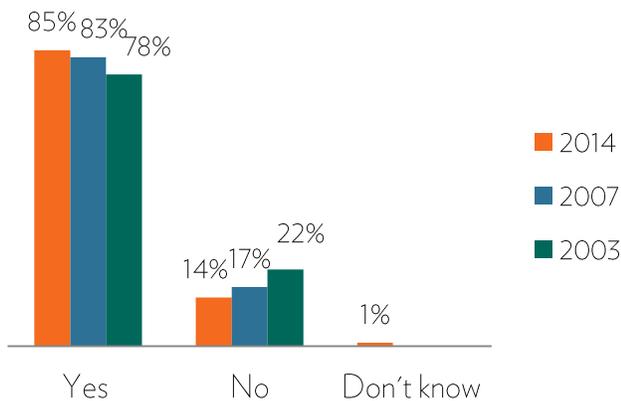
How important is lawn care to you?



**Figure 19**

Survey respondents find their lawns and lawn care important. Two-thirds of respondents rated lawn care as “very important” or “important.”

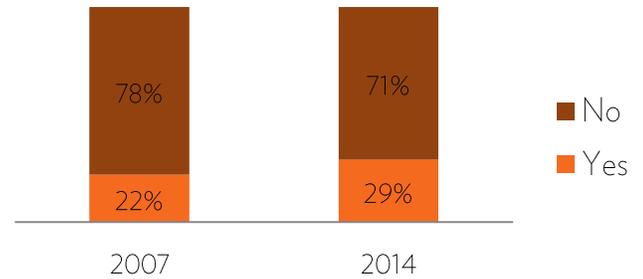
Do you have a lawn that you or your family maintain, or pay to have maintained?



**Figure 20**

A greater proportion of respondents currently have lawns that they maintain or pay to have maintained compared to 2007 and 2003. Only fourteen-percent (14%) of respondents do not have a lawn they are responsible for maintaining.

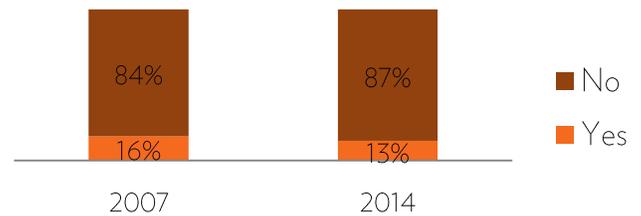
Do you use a lawn care service?



**Figure 21**

Lawn care service use has grown by seven-percent (7%) among respondents that are responsible for their own lawn care since 2007. The majority, however, continue not to use a service.

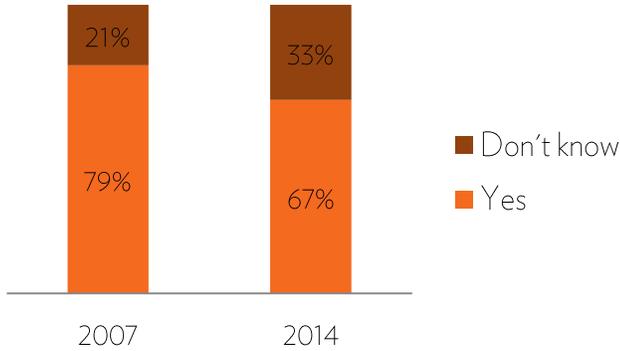
Are you familiar with the Macatawa Watershed Project’s Seal of Approval Program for lawn care and landscaping service companies?



**Figure 22**

Of those that use a lawn care service, eighty-seven percent (87%) were not aware of the Macatawa Watershed Project’s Seal of Approval Program for lawn and landscaping companies.

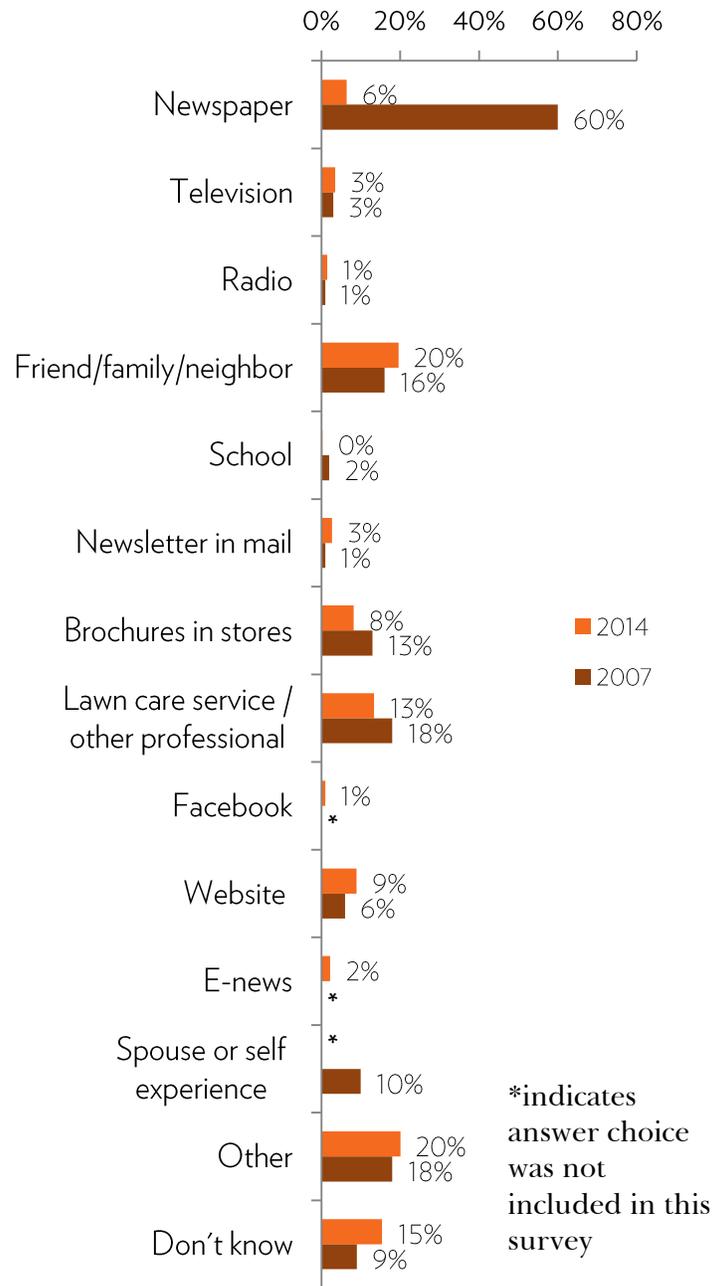
### Is your lawn care service certified by the Seal of Approval Program?



**Figure 23**

Of the respondents who do use a lawn care company and are aware of the Macatawa Watershed Project’s Seal of Approval Program for lawn care and landscaping service companies, sixty-seven percent (67%) verified that their lawn care service has received this seal of approval. This percentage has decreased from seventy-nine percent (79%) in 2007.

### What is your main source of information on lawn care?



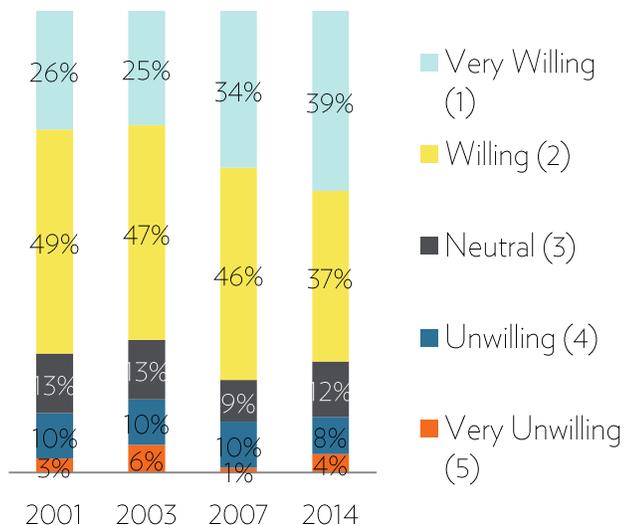
**Figure 24**

Respondents identified their main sources of lawn care information at similar rates from 2007 to 2014. The most dramatic difference was newspaper. In 2007, sixty percent (60%) of respondents identified the newspaper as a main

source of lawn care information and only six-percent (6%) did so in 2014.

## Water Quality

Willingness to regularly clean the curb and gutter area near house.

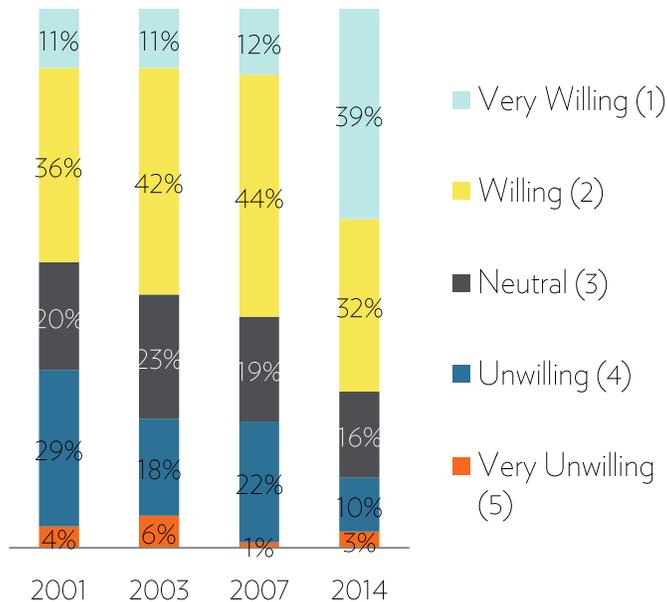


**Figure 25**

Respondents' willingness to clean the curb and gutter area near their home remained fairly constant. In 2001, 2003, 2007, and 2014, the percentage of respondents "very willing" or "willing" to reduce lawn fertilization frequency was seventy-five percent (75%), seventy-two percent (72%), eighty-percent (80%), and seventy-six (76%), respectively. The means for each year are in the table below. Means closer to one (1) signify respondents being more willing to make this change. Means closer to five (5) suggests respondents are less willing to do so.

Year	Mean
2001	2.15
2003	3.72
2007	3.70
2014	2.01

Willingness to reduce lawn fertilization frequency.

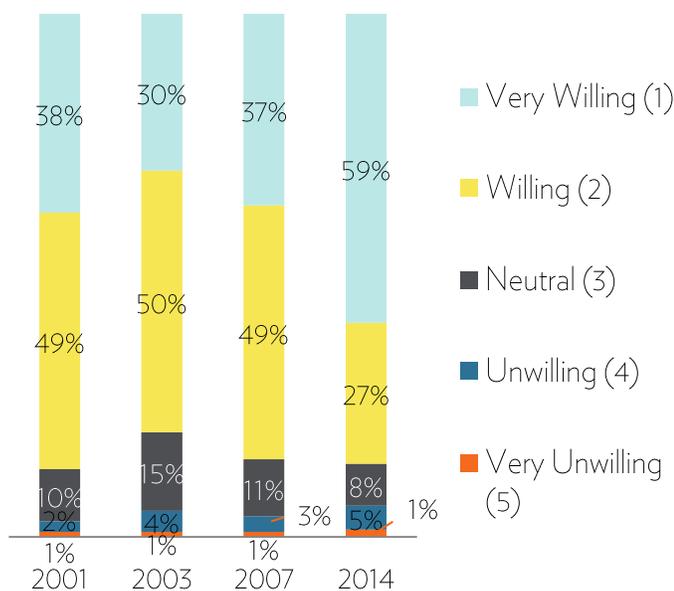


**Figure 26**

Respondents' willingness to reduce lawn fertilization frequency increased steadily from 2001. Seventy-one percent (71%) state they are "very willing" or "willing" to reduce fertilizer use. The mean also shows respondents' increased willingness to decrease fertilizer use.

Year	Mean
2001	2.79
2003	2.63
2007	2.60
2014	2.07

### Willingness to use low or no phosphorous fertilizer.

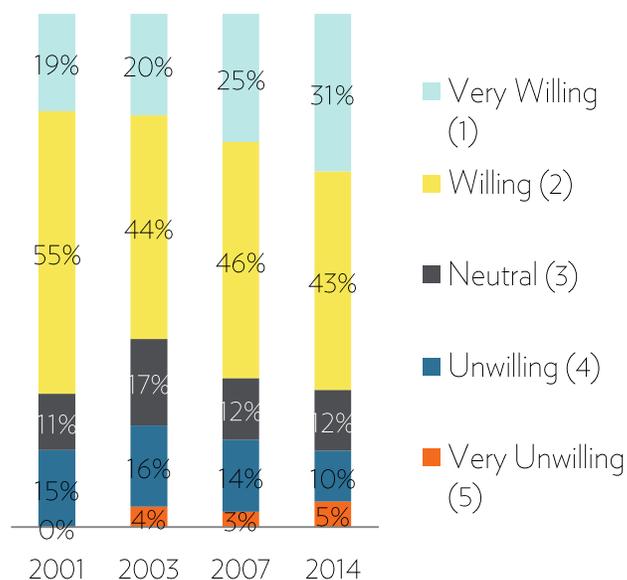


**Figure 27**

Respondents indicating they are “very willing” to use low or no phosphorous has increased steadily. The mean of 1.63 indicates that respondents are more willing to make these changes than in past years.

Year	Mean
2001	1.79
2003	1.96
2007	1.84
2014	1.63

### Willingness to do a soil test on your lawn.

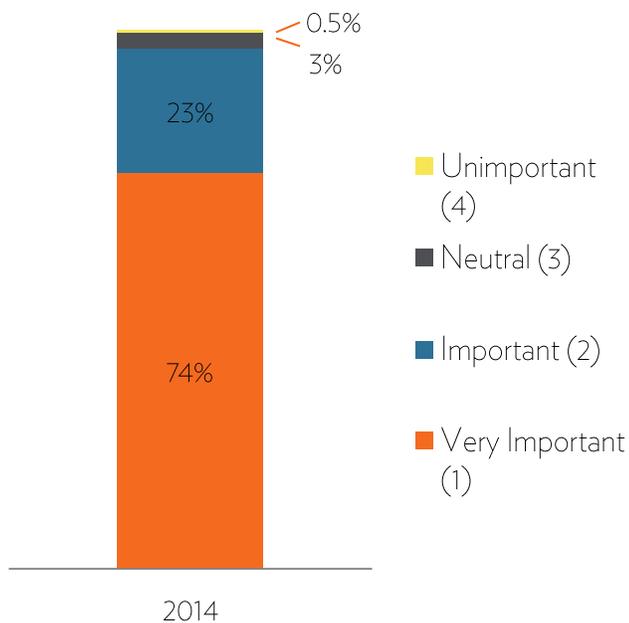


**Figure 28**

More respondents (31%) are “very willing” to do a soil test on their lawn than in previous years. The means table shows that participants’ willingness to make these changes has increased steadily since 2001. However, respondents are least willing to make this change compared to other changes described previously.

Year	Mean
2001	2.24
2003	2.4
2007	2.24
2014	2.14

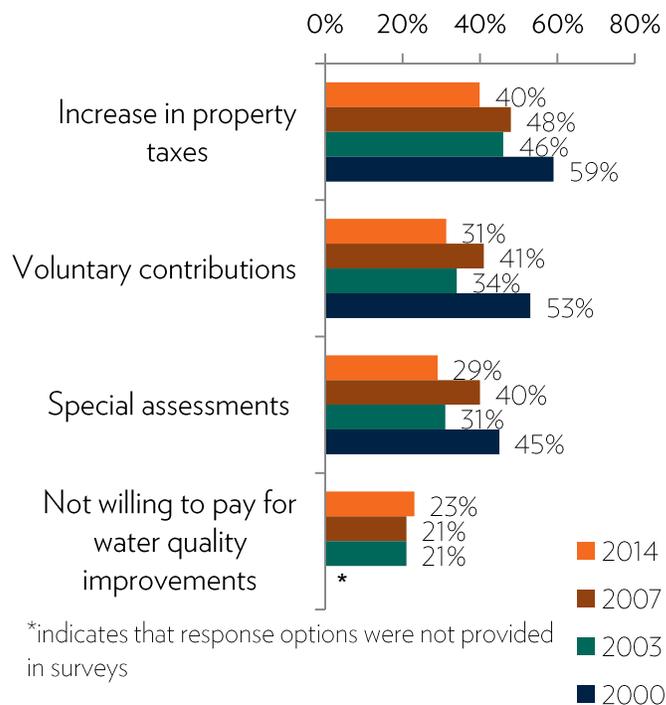
How important is water quality to you?



**Figure 29**

Nearly all respondents rated water quality as “very important” or “important.” This question has a mean of 1.30.

Would you be willing to pay for water quality improvements by:

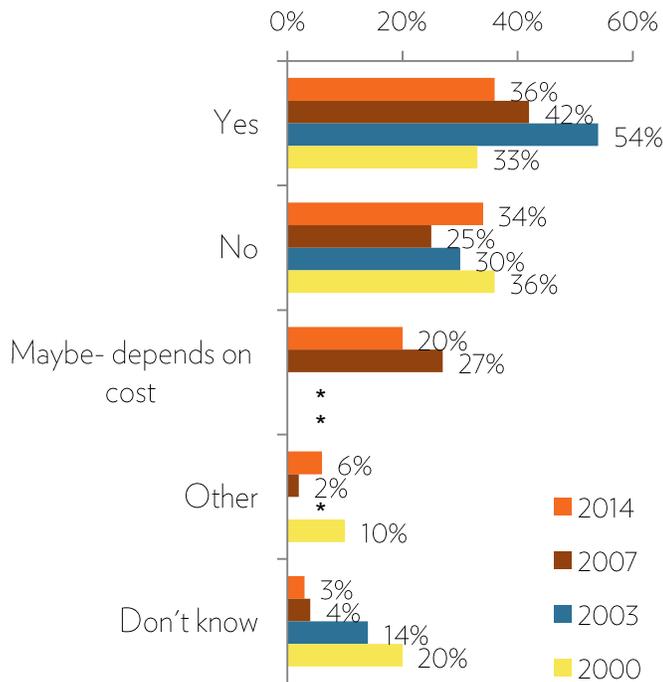


**Figure 30**

Survey respondents are less willing to pay for any water quality improvements than in past years. Paying for these improvements through an increase in property taxes continues to be the option selected most frequently.

The Macatawa Watershed Project has identified several activities that, if implemented in residential areas, would help improve water quality in the Macatawa Watershed. These include green infrastructure practices like planting native vegetation, and using natural landscaping techniques such as rain gardens, eliminating hard surfaces to allow water to infiltrate into the ground and other related types of activities.

Would you be willing to pay out of pocket to implement these types of practices on your property?

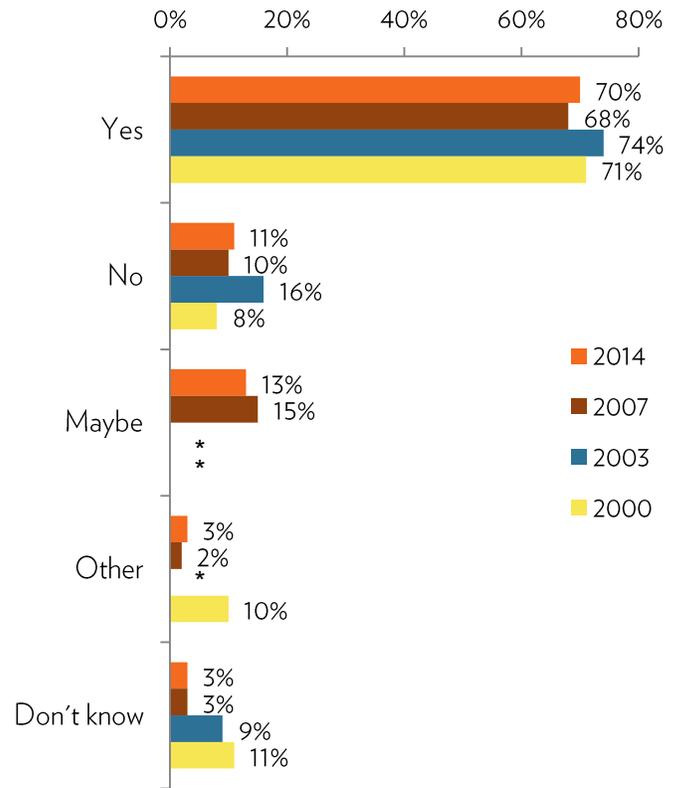


\*indicates that response options were not provided in surveys.

**Figure 31**

Respondents are less willing to pay out of pocket to implement practices to improve water quality than in past years. Data suggests that cost is a big factor in many respondents' decisions.

Would you be willing to implement any of these practices on your property if funding was provided for you?

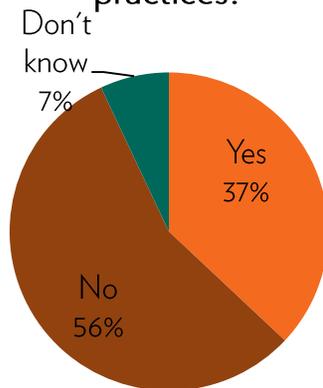


\* indicates that response options were not provided in surveys.

**Figure 32**

Respondents' willingness to implement practices to improve water quality increases significantly when funding is provided. Seventy-percent (70%) of respondents indicated they would be willing to make these changes if it did not require their own monetary contribution.

Would you be interested in attending a meeting or workshop to learn more about these practices?



**Figure 33**

Most respondents would not be willing to attend a meeting or workshop to learn more about these practices. However, more than a third indicated they would be interested.

## Final Thoughts

Respondents' final comments were coded to determine the most common themes and topics. Most frequently, these comments expressed a need to clean up Lake Macatawa and concern about the lake's water quality or water quality in general. Many of the respondents were willing to help by donating time or money. Respondents also frequently offered praise for MACC and the Lake Macatawa clean-up efforts. Comments also frequently focused on a need for more public education and marketing of specific projects regarding these issues.

## Conclusion

Public knowledge about watershed, storm water, and lawn care is important to local water quality. The Macatawa Watershed Project aims to

increase resident knowledge and improve water quality through education and outreach efforts specifically targeted to reduce phosphorus entering Lake Macatawa.

A telephone survey of residents living in the Macatawa Watershed reveals that respondents are more educated and aware of watershed, water quality, and stormwater than in past years. However, many residents are not knowledgeable about specific programs and projects such as Project Clarity or the lawn service Seal of Approval.

Respondents most often find their information on these topics in the newspaper, websites or other online resources, and informal sources such as conversations with friends or family.

Residents' willingness to make simple lifestyle changes to improve water quality such as using low or no phosphorus fertilizer or cleaning curb or gutter areas has increased over the years with the majority of respondents answering they are "very willing" or "willing" to make such changes.

Although respondents' knowledge about and willingness to make simple changes to improve water quality has increased, their inclination towards paying out of pocket, increasing property taxes, or voluntary monetary contributions for funding projects or activities to improve water quality has decreased.

An analysis of survey respondent comments reveals citizens' concerns over water quality and the inclination to clean up Lake Macatawa. Most respondents have praise for MACC and the recent improvements in water quality, with some expressing a desire to become involved. Survey comments often focused on the need for more public education and campaigns about these important issues.