Quality Assurance Project Plan

Name of Survey: Grand Traverse Bay Watershed City of Traverse City Resident Survey

Project name: Kids Creek Restoration Project Phase I

Tracking code: #2013-0010

Grantee organization: The Watershed Center Grand Traverse Bay

Survey author and organization: Sarah U'Ren, The Watershed Center Grand Traverse Bay

Date: 2/3/17, Version II

Approvals

Prepared by: Sarah U'Ren 2/6/17

For the grantee: 2-6-2017

Reviewed by: 2/7/2017

NPS Project Administrator: 2/7/2017

For the State: 2/8/2017

Table of Contents

Distribution List

Organization	Name	Phone/Fax/E-mail	Address
DEQ	Robert Sweet	P: (517) 284-5520 sweetr@michigan.gov	Constitution Hall 525 W. Allegan, 3S Lansing, MI 48933
DEQ	Chad Kotke	P: (517) 284-5516 kotkec@michigan.gov	Constitution Hall 525 W. Allegan, 3S Lansing, MI 48933
DEQ	Greg Goudy	P: (231) 876-4472 goudyg@michigan.gov	120 West Chapin St. Cadillac, MI 49601
The Watershed Center Grand Traverse Bay	Sarah U'Ren	P: (231) 935-1514 ext. 2 suren@gtbay.org	13272 S. West Bay Shore Dr. Traverse City, MI 49684
The Watershed Center Grand Traverse Bay	Outreach Coordinator (TBD)	P: (231) 935-1512 ext. 4 EMail: TBD	13272 S. West Bay Shore Dr. Traverse City, MI 49684

Responsibilities and Organization

The table below provides an overview of key persons involved in the project, their respective affiliations and their project role and responsibilities.

Name	Project Role	Organization	Project Responsibilities
Robert Sweet	Social Indicators contact	DEQ	Contact for issues related to social indicators studies, QAPP review and approval
Chad Kotke	Project Administrator	DEQ	Grant oversight, contact for overall project
Greg Goudy	Local Grant Project Technical contact	DEQ	Technical and local contact for overall project
Sarah U'Ren	Local Grant Project Administrator and Project Leader for Social Indicators Survey	The Watershed Center Grand Traverse Bay	Director of social indicators project, including development of survey, QAPP review, supervision of project staff, data interpretation and reporting, QA/QC of data entry
Outreach Coordinator (TBD)	Social Indicators Project Coordinator	The Watershed Center Grand Traverse Bay	Responsible for project tasks including assisting with QAPP, overseeing survey production, mailing and data entry, QA/QC of data collection

The Watershed Center Grand Traverse Bay has a 20-year history of protecting and preserving Grand Traverse Bay and its 1,000-square-mile watershed through on-the-ground restoration projects, public education and advocacy.

Sarah U'Ren, Program Director at The Watershed Center (TWC) will lead the project, assisted by a new Outreach Coordinator expected to be hired by March 2017 at TWC. U'Ren is responsible for assigning work, the final survey design and QAPP, making decisions and resolving any issues that arise, and deciding if issues need to be sent to DEQ for resolution. The Outreach Coordinator will assist with survey design and coordinate the survey production, associated mailings, and data entry, as well as conduct QA/QC for data collection. U'Ren will be responsible for the final data interpretation and reporting of findings as well as QA/QC of data entry.

Problem Definition and Background

As stated in the grant application, the summary for the entire grant project is as follows:

> This project addresses water quality concerns in the 976 square-mile Grand Traverse Bay watershed (50% forest, 19% agriculture). Specifically, water quality in the 303(d) listed waterbody of Kids Creek will be addressed, where the "Other indigenous aquatic life and wildlife" designated use is not being met because of sedimentation, substrate and flow regime alteration, all which relate to excessive stormwater runoff. This project addresses this impairment by installing LID-based BMPs on Tributary A of Kids Creek designed to reduce the amount of stormwater entering the creek. We will also continue our successful education efforts in the watershed by focusing efforts towards issues related to the Kids Creek subwatershed aimed at increasing awareness of how residents can reduce stormwater impacts to the creek and what others are doing to restore the creek. Estimated annual pollutant load reductions are as follows: 7.2 tons sediment, 12 lb P, 82 lb N.

The project involves a task aimed at increasing awareness of issues related to Kids Creek regarding stormwater impacts. This was done using various media including radio, newspaper, magazines, digital signage, and social media. In order to track the effectiveness of that awareness campaign TWC seeks to implement a social survey via mail to assess knowledge of area residents.

Background and History

The Grand Traverse Bay watershed drains 976 square miles, covers major portions of four counties (Antrim, Kalkaska, Grand Traverse, and Leelanau), and contains more than 50 municipalities and townships. The watershed has nine major drainage basins, the two largest being the Elk River Chain of Lakes and the Boardman River. Land use and land cover in the watershed is predominantly forest (50%) and agriculture (19%), followed by: open shrub/grassland (15%), water (6.5%), wetlands (2.5%), and urban (7%). The Grand Traverse Bay Watershed Protection Plan states that sediment and excessive nutrient loading are the two highest ranking priority pollutants that are threatening designated uses in the watershed. Priority tasks identified in the plan include establishing stormwater BMPs, stabilizing streambanks, improving road stream crossings, and assisting local governments to improve water quality. Additionally one of the highest priorities is to continue outreach and education efforts.
A 2-mile portion of Kids Creek (AUID#: 040601050507-01), a major tributary to the Boardman River, is on the State's impaired waters list due to the "Other indigenous aquatic life and

wildlife" designated use not being met because of sedimentation, substrate and flow regime alteration. Sources for this pollution have been identified in the Targeted Water Bodies list as relating to stormwater – "Post-development erosion and sedimentation; urban runoff/ storm sewers; impervious surface/ parking lot runoff."

Defined Purpose

Over the last five years, TWC has worked in the Kids Creek subwatershed implementing a variety of BMPs at sites in Tributary A of Kids Creek that utilize Low Impact Development (LID) and Green Infrastructure (GI) techniques (e.g. rain gardens, green roofs, infiltration planter boxes, pervious pavement, etc.) aimed at reducing the quantity and improving the quality of stormwater entering the creek. In conjunction with these on-the-ground efforts, TWC also implemented an education and outreach campaign in the Grand Traverse region focusing on general stormwater education and awareness, the issues related to Kids Creek, what is being done to restore Kids Creek, and what people can do to reduce their stormwater impact on the creek and the watershed. The outreach campaign included radio, newspaper and magazine advertising, digital and print signage in local hot spots, and posts on social media, including Facebook and Twitter.

This survey will help us evaluate citizens' awareness levels of stormwater and other water quality issues and help us determine the general effectiveness of the advertising/education campaign. Our goal is to evaluate the success of the education and outreach campaign, better understand the public's general awareness of stormwater and water quality issues and also learn what subjects/areas should be addressed in future campaigns.

This survey data will be compared to the 2007 baseline survey to see if attitudes and behavior in respect to water quality have changed as a possible result of the ad campaign. Since the baseline survey in 2007 included the entire watershed and the SIPES system and SIDMA protocols were not in place at that time we cannot definitively compare results from the two surveys. However, we can use this new survey to infer current levels of knowledge regarding watershed issues and our outreach efforts. This means that we cannot fully judge the effectiveness of the outreach campaign using this current survey. However, as an added benefit, this survey will serve as a baseline to measure any future outreach campaigns targeted at this population.

Questions to be answered through this social monitoring effort include:

- Perception of water quality in the area
- How residents use water resources
- What issues/sources affect water quality in the area
- What stormwater is
- What residents do to protect water resources

Monitoring Tasks/Timeline and Sampling Design

The Watershed Center will conduct a mail survey of residents (except non-farm commercial) in the Traverse City area in the Kids Creek subwatershed. The survey will collect information on attitudes and behaviors regarding water quality, as well as demographic information for general comparison to the 2007 Benchmark Survey.

The survey and process follows the protocols outlined in The Social Indicator Planning and Evaluation System (SIPES) for Nonpoint Source Management handbook[1]. The target return rate of the survey will be 40%. A "five wave design" will be used to insure the best possible return rate. The survey will have a 95% confidence level and a sampling error of +/- 5%.

Purpose of the monitoring (i.e., the question to be answered):	Evaluate effectiveness of advertising/outreach campaign and establish new baseline using SIPES/SIDMA.		
Survey type (mail, phone, etc.):	Mail		
Survey sample size:	4,305 (residential records in 49684 Traverse City zip code that are in Grand Traverse County)	Expected return rate for mail surveys:	40%
Statistical analyses to be applied to the data:	SIDMA Tool, Chi square, t-test, correlation		

Based on 4,305 records (see table above), the survey should be mailed to 883 households, with 353 returned for 95% confidence. The survey will be mailed to 900 random households in the 49684 zip code of the City of Traverse City in Grand Traverse County (numbers calculated using: http://www.custominsight.com/articles/random-sample-calculator.asp).

Using the five wave design method, a pre-survey postcard will be mailed first. One week later, the survey with a cover letter will be sent to residents. A reminder postcard will be mailed two weeks after the first survey mailing to any resident who has not responded. A second survey with a cover letter will be sent to non-respondents around two weeks after the postcard reminder. A final reminder letter will be sent to the landowners who have not responded, two weeks after the second survey. So that respondents are not sent duplicate surveys, a tracking number will be placed on the corner of every survey. When the survey is returned, the number will be cut off the survey and separated from the survey. This will ensure that the tracking number and survey answers can be entered without being able to associate any survey answers to a respondent (they will remain anonymous).

The survey will have 11 sections total with questions to determine the public's awareness and attitudes toward water quality in the Grand Traverse Bay watershed/Kids Creek subwatershed. Eleven demographic questions are also included. Five original questions were added that relate

[1] Genskow, Ken and Linda Prokopy (eds.). 2011. *The Social Indicator Planning and Evaluation System (SIPES) for Nonpoint Source Management: A Handbook for Watershed Projects.* 3rd Edition. Great Lakes Regional Water Program. (104 pages)

to knowledge of stormwater issues in Kids Creek, the outreach campaign, and full-time residency status. The survey instrument is attached.

Five-Wave Design Timeline:

- Pre-survey postcard: Mailed in early March 2017.
- Survey with cover letter: The survey will be distributed in mid-March, ideally the week of March 20.
- Reminder postcard: To be sent two weeks after the first survey mailing to any resident who has not responded.
- Second Survey with cover letter: A second survey and letter will be sent to non-respondents about two weeks after the postcard reminder.
- Reminder postcard: A final reminder letter will be sent to the landowners who have not responded, two weeks after the second survey.

All survey data will be collected by May 15, 2017.

Goals and Objectives

The goal of this project is to evaluate the success of our education and outreach campaign, better understand the public's general awareness of stormwater and water quality issues and also learn what subjects/areas should be addressed in future campaigns.

The information collected in the survey will find out the respondents' attitudes and behaviors in the following subject areas:

- Rating of water quality
- Water resources
- Water impairments
- Sources of water pollution
- Consequences of poor water quality
- Practices to improve water quality
- Opinions of specific water practices
- Making decisions for my property
- Demographic data (About You section)
- Sources of information from various sources

Most questions have multiple choices of answers from which to choose. There is one opportunity at the end of the survey for written comments. All comments will be transcribed and included with the final project summary.

Selection of survey population

The target population for this survey is residents in the City of Traverse City, Grand Traverse County 49684 zip code, which encompasses most of the Kids Creek subwatershed. There are 4,305 records for this zip code.

A mailhouse database was used to gather these records versus equalization records in order to include Traverse City's population of renters. The mailhouse's consumer datasets are sourced a

variety of ways. They begin with public record sources, such as County Tax Rolls for property tax payments, utility connections, home telephones, court filings such as judgments, liens, bankruptcy, marriage licenses, birth records, drivers' license data etc. From there, they contract with companies that can provide data to enhance the base record (name/address) information they get from the public record sources. This includes things such as lifestyle/interest data, buying behavior, financial attributes related to investments etc.; however, this type of data was not used to produce the list since TWC is not targeting a specific income level or behavior/characteristic, such as boat owners.

Non-farm commercial and multifamily parcels will be removed from the sample, as well as anyone who has lived at their residence 4 years or less (to cover the time of the 3-year outreach campaign). The 900 addresses will be chosen at random from the records provided by the mailhouse and all will receive the same survey. Respondents will remain anonymous through the use of a number code that is removed when a survey is returned.

A "five wave design" will be used to achieve the best return rate. A stamped return envelope addressed to The Watershed Center will accompany all surveys. The survey will be distributed in the mid-March 2017. All survey data will be collected by May 15, 2017.

Although not specifically designed as a follow up or comparison to the data collected in the 2007 Benchmark Survey (designed prior to SIDMA and conducted watershed-wide via telephone), we will compare similar questions and answers to infer any change in awareness and/or behavior.

Special Training or Certification

The Watershed Center staff involved in this project have viewed the online SIPES/SIDMA training videos/tutorials as related to this project. Staff or volunteers involved in the data entry portion of the project will receive basic training on the data entry elements of the projects prior to beginning that portion of the project.

Quality Control, Data Management and Analysis

Two members of TWC staff have reviewed all of the questions and draft survey. These members will also write and review the cover letter and other introductory information.

The survey return rate goal is 40%. If that rate is not achieved, we will consult with Robert Sweet, Social Indicators contact for this project, about next steps to take. The SIPES handbook suggests phone interviews of non-respondents until the targeted response rate is reached. However, our records only include approximately 200 phone numbers, so we may randomly select additional addresses from the original list, and send those households a survey, repeating the process until an acceptable confidence and error levels are reached (using this website: http://www.custominsight.com/articles/random-sample-calculator.asp).

Partially completed surveys will be included unless a survey is substantially incomplete, meaning that only 10% of content questions and no demographic questions are completed.

Surveys with uncertain responses will be set aside and reinterpreted if the targeted number of valid surveys is not reached. If reinterpreted, responses between categories on Likert scale questions will be randomly assigned to the category on either side. Reponses on individual surveys will not be tallied for other questions where the intent cannot be determined.

Coding quality will be assessed by randomly selecting one of every 20 of the tallied surveys and rechecking the coding. If systematic errors greater than 5% are found, the entire group will be rechecked.

The responses from the returned questionnaires will be reviewed and input into SIDMA by TWC staff or a volunteer. Standard descriptive statistics will be generated by SIDMA (counts, mean, median, mode, standard deviation). In addition, tests for differences and similarities between demographic categories (Chi square, t-test, correlation) will be completed as appropriate for selected questions. Sarah U'Ren, Program Director with The Watershed Center, will complete the analysis.

Data and Document Management and Reporting Procedures

Final project products include:

- Approved QAPP
- Pre-survey postcard
- Survey instrument with cover letter
- Reminder postcard
- Reminder letter for second survey
- Final reminder postcard
- Summary report of survey results.

MSU will maintain the SIDMA surveys and data electronically. Hard surveys, analysis and reports will be securely maintained by The Watershed Center for five years post grant.

Survey Instruments and Notification

Survey instructions will be included in the cover letter that accompanies all surveys mailed. Draft letters, post cards and other materials used in the five wave design will be submitted at a later date for approval prior to distribution.

Kids Creek - Stormwater Awareness Survey

This survey should take about 10-15 minutes to complete.
Thank you for your time and interest!

Rating of Water Quality

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

	Poor	Okay	Good	Don't Know
1. For canoeing / kayaking / other boating	( )	( )	( )	( )
2. For eating locally caught fish	( )	( )	( )	( )
3. For swimming	( )	( )	( )	( )
4. For picnicking and family activities	( )	( )	( )	( )
5. For fish habitat	( )	( )	( )	( )
6. For scenic beauty	( )	( )	( )	( )

Your Water Resources

1. Of these activities, which is the most important to you?

( ) Ccanoeing / kayaking / other boating

( ) Eating locally caught fish

( ) Swimming

( ) Picnicking and family activities

( ) Fish habitat

( ) Scenic beauty

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

( ) No

( ) Yes

3. If you answered 'Yes' above, where does your rain water drain to?

4. Are you aware that Kids Creek is listed on the State's Impaired Waters List because of issues related to stormwater runoff?

( ) No

( ) Yes

5. Are you aware that The Watershed Center has been working on a large-scale restoration project to remove Kids Creek from the States Impaired Waters List?

( ) No

( ) Yes

6. If you answered Yes above, please tell us what you think of the project.

Your Opinions

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

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. The way that I care for my lawn and yard can influence water quality in local streams and lakes.	( )	( )	( )	( )	( )
2. It is my personal responsibility to help protect water quality.	( )	( )	( )	( )	( )
3. It is important to protect water quality even if it affects economic development.	( )	( )	( )	( )	( )
4. My actions have an impact on water quality.	( )	( )	( )	( )	( )
5. I would be willing to pay more to improve water quality (for example: though local taxes or fees)	( )	( )	( )	( )	( )
6. I would be willing to change the way I care for my lawn and yard to improve water quality.	( )	( )	( )	( )	( )
7. The quality of life in my community depends on good water quality in local streams, rivers and lakes.	( )	( )	( )	( )	( )

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?

	Not a Problem	Slight Problem	Moderate Problem	Severe Problem	Don't Know
1. Sedimentation (dirt and soil) in the water	( )	( )	( )	( )	( )
2. Phosphorus (Nutrients)	( )	( )	( )	( )	( )
3. Bacteria and viruses in the water (such as E.coli / coliform)	( )	( )	( )	( )	( )
4. Trash or debris in the water	( )	( )	( )	( )	( )
5. Salt / TDS / Chlorides in the water	( )	( )	( )	( )	( )
6. Oil and grease in the water	( )	( )	( )	( )	( )
7. Toxic materials in the water	( )	( )	( )	( )	( )
8. Algae in the water	( )	( )	( )	( )	( )
9. Invasive aquatic plants and animals	( )	( )	( )	( )	( )
10. Flow Alteration	( )	( )	( )	( )	( )

11. Habitat alteration harming local fish	( )	( )	( )	( )	( )

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?

	Not a Problem	Slight Problem	Moderate Problem	Severe Problem	Don't Know
1. Soil erosion from shorelines and/or streambanks	( )	( )	( )	( )	( )
2. Excessive use of lawn fertilizers and/or pesticides	( )	( )	( )	( )	( )
3. Grass clippings and leaves entering storm drains	( )	( )	( )	( )	( )
4. Street salt and sand	( )	( )	( )	( )	( )
5. Droppings from geese, ducks and other waterfowl	( )	( )	( )	( )	( )
6. Waste material from pets	( )	( )	( )	( )	( )
7. Land development or redevelopment	( )	( )	( )	( )	( )
8. Urban stormwater runoff	( )	( )	( )	( )	( )
9. Residential stormwater runoff	( )	( )	( )	( )	( )
10. Post-development erosion and sedimentation	( )	( )	( )	( )	( )
11. Flow regulation/modification	( )	( )	( )	( )	( )
12. Removal of riparian vegetation	( )	( )	( )	( )	( )

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?

	Not a Problem	Slight Problem	Moderate Problem	Severe Problem	Don't Know
1. Contaminated drinking water	( )	( )	( )	( )	( )
2. Beach closures	( )	( )	( )	( )	( )
3. Polluted swimming areas	( )	( )	( )	( )	( )
4. Contaminated fish	( )	( )	( )	( )	( )
5. Loss of desirable fish species	( )	( )	( )	( )	( )
6. Reduced beauty of lakes or streams	( )	( )	( )	( )	( )
7. Reduced opportunities for water recreation	( )	( )	( )	( )	( )
8. Reduced quality of water recreation activities	( )	( )	( )	( )	( )
9. Excessive aquatic plants or algae	( )	( )	( )	( )	( )
10. Fish kills	( )	( )	( )	( )	( )
11. Lower property values	( )	( )	( )	( )	( )

Practices to Improve Water Quality

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

	Not relevant for my property	Never heard of it	Somewhat familiar with it	Know how to use it; not using it	Currently use it
1. Following the manufacturer's instructions when fertilizing lawn or garden	( )	( )	( )	( )	( )
2. Create a rain garden	( )	( )	( )	( )	( )
3. Use a mulching lawn mower	( )	( )	( )	( )	( )
4. Follow pesticide application instructions for lawn and garden	( )	( )	( )	( )	( )
5. Use phosphate free fertilizer	( )	( )	( )	( )	( )
6. Recycle automotive oil	( )	( )	( )	( )	( )
7. Properly dispose of household waste (chemicals, batteries, florescent light bulbs, etc.)	( )	( )	( )	( )	( )
8. Use rain barrels	( )	( )	( )	( )	( )
9. Restore native plant communities	( )	( )	( )	( )	( )
10. Restore/enhance wetland	( )	( )	( )	( )	( )
11. Maintain riparian buffer	( )	( )	( )	( )	( )
12. Protect streambanks and/or shorelines with vegetation	( )	( )	( )	( )	( )

Specific Constraints of Practices

Grass Clipping Management: Keep grass clippings and leaves out of the roads, ditches, and gutters

1. How familiar are you with this practice?
( ) Not relevant
( ) Never heard of it
( ) Somewhat familiar with it
( ) Know how to use it; not using it
( ) Currently use it

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

3. Are you willing to try this practice?
( ) Yes or already do
( ) Maybe
( ) No

4. How much do the following factors limit your ability to implement this practice?

	Not at all	A little	Some	A lot	Don't Know
1. Don't know how to do it	( )	( )	( )	( )	( )
2. Time required	( )	( )	( )	( )	( )
3. Cost	( )	( )	( )	( )	( )
4. The features of my property make it difficult	( )	( )	( )	( )	( )
5. Insufficient proof of water quality benefit	( )	( )	( )	( )	( )
6. Desire to keep things the way they are	( )	( )	( )	( )	( )
7. Physical or health limitations	( )	( )	( )	( )	( )
8. Hard to use with my farming system	( )	( )	( )	( )	( )
9. Lack of equipment	( )	( )	( )	( )	( )

Proper Pet Waste Disposal (including horses): Disposing of pet waste in a manner that prevents runoff to local waterways.

1. How familiar are you with this practice?

( ) Not relevant

( ) Never heard of it

( ) Somewhat familiar with it

( ) Know how to use it; not using it

( ) Currently use it

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

3. Are you willing to try this practice?

( ) Yes or already do

( ) Maybe

( ) No

4. How much do the following factors limit your ability to implement this practice?

	Not at all	A little	Some	A lot	Don't Know
1. Don't know how to do it	( )	( )	( )	( )	( )
2. Time required	( )	( )	( )	( )	( )
3. Cost	( )	( )	( )	( )	( )
4. The features of my property make it difficult	( )	( )	( )	( )	( )
4. Insufficient proof of water quality benefit	( )	( )	( )	( )	( )
6. Desire to keep things the way they are	( )	( )	( )	( )	( )
7. Physical or health limitations	( )	( )	( )	( )	( )
8. Hard to use with my farming system	( )	( )	( )	( )	( )

9. Lack of equipment	( )	( )	( )	( )	( )

Tree/Shrub Planting: Planting trees and shrubs to maintain or improve forest health.

1. How familiar are you with this practice?
( ) Not relevant
( ) Never heard of it
( ) Somewhat familiar with it
( ) Know how to use it; not using it
( ) Currently use it

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

3. Are you willing to try this practice?
( ) Yes or already do
( ) Maybe
( ) No

4. How much do the following factors limit your ability to implement this practice?

	Not at all	**A little**	**Some**	**A lot**	**Don't Know**
1. Don't know how to do it	( )	( )	( )	( )	( )
2. Time required	( )	( )	( )	( )	( )
3. Cost	( )	( )	( )	( )	( )
4. The features of my property make it difficult	( )	( )	( )	( )	( )
5. Insufficient proof of water quality benefit	( )	( )	( )	( )	( )
6. Desire to keep things the way they are	( )	( )	( )	( )	( )
7. Physical or health limitations	( )	( )	( )	( )	( )
8. Hard to use with my farming system	( )	( )	( )	( )	( )
9. Lack of equipment	( )	( )	( )	( )	( )

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

1. How familiar are you with this practice?
( ) Not relevant
( ) Never heard of it
( ) Somewhat familiar with it
( ) Know how to use it; not using it
( ) Currently use it

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

3. Are you willing to try this practice?

( ) Yes or already do

( ) Maybe

( ) No

4. How much do the following factors limit your ability to implement this practice?

	Not at all	A little	Some	A lot	Don't Know
1. Don't know how to do it	( )	( )	( )	( )	( )
2. Time required	( )	( )	( )	( )	( )
3. Cost	( )	( )	( )	( )	( )
4. The features of my property make it difficult	( )	( )	( )	( )	( )
5. Insufficient proof of water quality benefit	( )	( )	( )	( )	( )
6. Desire to keep things the way they are	( )	( )	( )	( )	( )
7. Physical or health limitations	( )	( )	( )	( )	( )
8. Hard to use with my farming system	( )	( )	( )	( )	( )
9. Lack of equipment	( )	( )	( )	( )	( )

Making Decisions for my Property

In general, how much does each issue limit your ability to change your management practices?

	Not at all	A little	Some	A lot	Don't Know
1. Personal out-of-pocket expense	( )	( )	( )	( )	( )
2. My own physical abilities	( )	( )	( )	( )	( )
3. Not having access to the equipment that I need	( )	( )	( )	( )	( )
4. Lack of available information about a practice	( )	( )	( )	( )	( )
5. No one else I know is implementing the practice	( )	( )	( )	( )	( )
6. Approval of my neighbors	( )	( )	( )	( )	( )
7. Don't know where to get information and/or assistance about those practices	( )	( )	( )	( )	( )
8. Environmental damage caused by practice	( )	( )	( )	( )	( )
9. Legal restrictions on my property	( )	( )	( )	( )	( )
10. Concerns about resale value	( )	( )	( )	( )	( )
11. Not being able to see a demonstration of the practice before I decide	( )	( )	( )	( )	( )

12. The need to learn new skills or techniques	( )	( )	( )	( )	( )

About You

1. Do you make the home and lawn care decisions in your household?
( ) Yes
( ) No

2. What is your gender?
( ) Male
( ) Female

3. What is your age?

4. What is the highest grade in school you have completed?
( ) Some formal schooling
( ) High school diploma/GED
( ) Some college
( ) 2 year college degree
( ) 4 year college degree
( ) Post-graduate degree

5. What is the approximate size of your residential lot?
( ) 1/4 acre or less
( ) More than 1/4 acre but less than 1 acre
( ) 1 acre to less than 5 acres
( ) 5 acres or more

6. Do you own or rent your home?
( ) Own
( ) Rent

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

8. Which of the following best describes where you live?
( ) In a town, village, or city
( ) In an isolated, rural, non-farm residence
( ) Rural subdivision or development
( ) On a farm

9. Do you use a professional lawn care service?
( ) Yes, just for mowing

( ) Yes, for mowing and fertilizing
( ) Yes, just for fertilizing and pest control
( ) Yes, for mowing, fertilizing, and pest control
( ) No

10. Where are you likely to seek information about water quality issues?
[ ] Newsletters/brochure/fact sheet
[ ] Internet
[ ] Radio
[ ] Newspapers/magazines
[ ] Workshops/demonstrations/meetings
[ ] Conversations with others
[ ] None of the above

11. Are you a full-time resident?
[ ] Yes
[ ] No

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?

	Not at all	Slightly	Moderately	Very much	Am not familiar
1. Local watershed project	( )	( )	( )	( )	( )
2. Local government	( )	( )	( )	( )	( )
3. U.S. Environmental Protection Agency	( )	( )	( )	( )	( )
4. University Extension	( )	( )	( )	( )	( )
5. State agricultural agency	( )	( )	( )	( )	( )
6. State environmental agency	( )	( )	( )	( )	( )
7. Environmental groups	( )	( )	( )	( )	( )
8. Local garden center	( )	( )	( )	( )	( )
9. Lawn care company	( )	( )	( )	( )	( )
10. Local community leader	( )	( )	( )	( )	( )
11. Neighbors / friends	( )	( )	( )	( )	( )
12. State natural resources agency	( )	( )	( )	( )	( )
13. County Health department	( )	( )	( )	( )	( )
14. Land trust	( )	( )	( )	( )	( )

15. Do you recall seeing or hearing any advertising or educational outreach about stormwater runoff, its effect on water quality and actions homeowners can take to improve water quality?

( ) Yes

( ) No

16. In general, has your knowledge of stormwater runoff and actions homeowners can take to improve water quality increased over time?

( ) Yes

( ) No

Thank You

1. Please use the space below for any additional comments about this survey or water resources in your community.