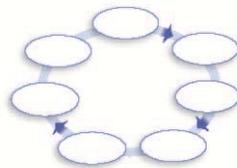


# **The Social Indicator Planning and Evaluation System (SIPES) for Nonpoint Source Management**

**A Handbook for  
Projects in USEPA Region 5**



**Version 2.1**

**January 2010**

**NOTE: This version of the Handbook is written for projects that are using social indicators starting in 2010. Projects using social indicators prior to 2010 should continue to use version 2.0 of the Handbook. This version of the Handbook will be replaced by Version 3.0 when revisions to the Social Indicators Data Management and Analysis (SIDMA) tool are completed in late 2010.**

## Acknowledgments

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This Handbook was edited by Ken Genskow and Linda Prokopy.

Current regional Social Indicators team members include:

Ken Genskow, Ph.D., Co-Leader, University of Wisconsin-Madison  
Linda Prokopy, Ph.D., Co-Leader, Purdue University  
Jeremiah Asher, Michigan State University  
Joe Bonnell, Ph.D., The Ohio State University  
Karlyn Eckman, Ph.D., University of Minnesota  
Kristin Floress, Purdue University  
Glenn O'Neill, Michigan State University  
Rebecca Power, University of Wisconsin-Extension  
Danielle Wood, University of Wisconsin-Madison

Former team members who also contributed towards this project include: Adam Baumgart-Getz, USGS, Shorna Broussard, Ph.D., Cornell University, Jerry Long, Ph.D., Karyn McDermid, Mark Stevens, Ph.D, Rachel Walker, Ph.D. and David White, Ph.D. University of Illinois at Urbana-Champaign.

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Information about the team and development of this Handbook can be found online at <http://www.uwex.edu/ces/regionalwaterquality/Flagships/Indicators.htm>.

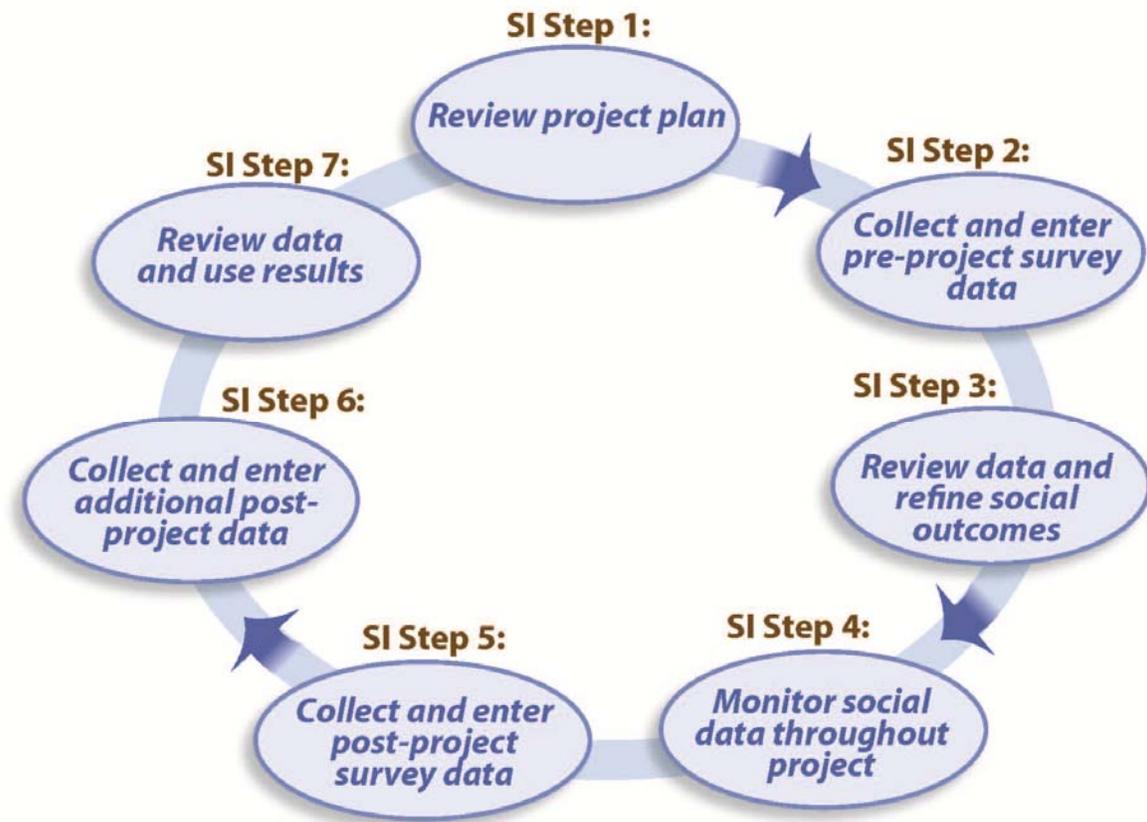
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## Handbook Overview

This Handbook describes a step-by-step system for using social indicators to help you plan, implement and evaluate Nonpoint Source (NPS) management projects. The Social Indicator Planning and Evaluation System (SIPES) is intended to be used by resource managers working in state or regional NPS management programs. The SIPES process and seven steps are illustrated below. These steps begin with a review of project plans and then guide projects through a process to collect, analyze and use social indicators data at the beginning and end of an NPS project.



Lettered handbook sections (A-J) describe the seven steps in greater detail.

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# Introduction: The Social Indicators Planning and Evaluation System (SIPES)

## Why Social Indicators?

Effective management of Nonpoint Source (NPS) water pollution requires addressing both environmental conditions *and* the choices people make that impact the environment. If your state environmental agency has asked you to use this Handbook, your project is likely trying to improve water quality by changing people's behavior. To do this, your project may have to influence people's awareness, skills, attitudes, capacity, or constraints related to water quality improvement. Monitoring social indicators, like monitoring environmental indicators, gives us valuable information about how well our management strategies are working. Using the system outlined in this Handbook can help improve your project planning and evaluation.

Water quality problems have accumulated over many decades and may take decades to amend. Confirming that awareness and attitudes are changing and behaviors are being adopted in a watershed is one way that projects can demonstrate progress toward water quality goals. Social indicators provide consistent measures of social change within a watershed and can be used by managers at local, state, and federal levels to estimate the impacts of their efforts and resources. Figure 1 illustrates the link between social indicators and eventual improvement of water quality.

Social indicators are part of an ongoing effort among state water quality agencies and the USEPA to evaluate and improve their NPS programs. State NPS programs in USEPA Region 5 have agreed to use social indicator data to document progress towards NPS water quality improvement goals. SIPES was developed for USEPA Region 5 to provide standardized, regionally comparable social data that will complement other administrative and environmental data used by state programs.

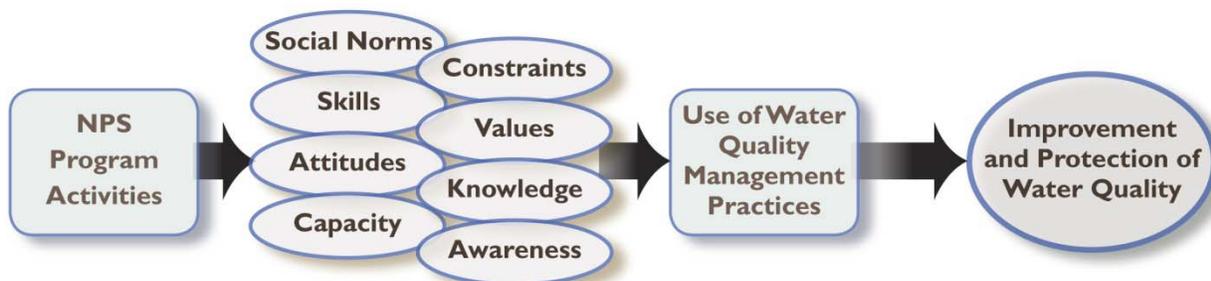


Figure 1: Conceptual model of social indicators and water quality

## What are Social Indicators?

Broadly, *social indicators* are measures that describe the capacity, skills, awareness, knowledge, values, beliefs, and behaviors of individuals, households, organizations, and communities. For the purposes of this Handbook, social indicators for NPS management provide information about

awareness, attitudes, constraints, capacity, and behaviors that are expected to lead to water quality improvement and protection. By measuring these indicators over time, water quality managers can target their project activities and assess whether their projects are accomplishing changes expected to improve and protect water quality.

## **Core Social Indicators**

A list of core social indicators used in SIPES, along with specific project goals and intended outcomes for each type of indicator are included in Table 1. This core set was selected to provide a manageable number of indicators that address important components of the behavior change process. Social indicators will help project staff focus and evaluate their efforts toward the following intended outcomes:

- Increased awareness of relevant technical issues and/or recommended practices in critical areas;
- Changed attitudes to facilitate desired behavior change in critical areas;
- Reduced constraints to behavior change;
- Increased capacity to leverage resources in critical areas;
- Increased capacity to support appropriate practices in critical areas; and
- Increased adoption of practices to maintain or improve water quality in critical areas.

The set of core social indicators (Table 1) is not comprehensive. While some indicators may appear more relevant to some projects than others, all projects using the SIPES system will collect all the core indicators. Other social indicators can also provide important information for planning, implementing, and evaluating NPS projects. The regional web site includes more information about how these core indicators were selected as well as information about supplemental indicators that may be used by NPS projects.

## **Using Social Indicators in NPS Projects**

By focusing on social indicators, this Handbook complements existing planning and implementation processes supported by state and federal NPS programs (for example, USEPA's *Handbook for Developing Watershed Plans To Restore and Protect Our Waters*). Primary users are NPS projects funded through grants from their state NPS programs. As part of the grant application and award process, state NPS programs will consult with individual projects to determine the expectations for each project regarding the use of social indicators. Projects mainly focused on developing a watershed plan or TMDL would have different expectations than projects focused on implementing practices to improve water quality. A project's target audience will also influence the social indicator collection process and methods. Specific information about the steps for using social indicators and information about determining target audiences are found in Section A: *Steps for Using the Social Indicator Planning and Evaluation System*, and Section B: *NPS Project Planning*.

## **SIDMA: Social Indicator Data Management and Analysis**

The Social Indicator Data Management and Analysis (SIDMA) tool is a web-based project management aid that supports SIPES in USEPA Region 5 states. SIDMA will be used by project

coordinators to collect, organize, and use social indicators related to water quality improvements. Section C of this Handbook provides instructions for accessing and getting started with SIDMA. Other task-specific instructions are integrated throughout the Handbook.

**Table 1: Goals, intended outcomes, and core social indicators**

<p><b>Goal 1:</b> Increase target audience awareness</p> <p><b>Awareness <u>Outcome</u> 1:</b> Increase awareness of relevant technical issues and/or recommended practices in critical areas</p> <p><b>Awareness Indicator 1:</b> Awareness of consequences of pollutants to water quality</p> <p><b>Awareness Indicator 2:</b> Awareness of pollutant types impairing water quality</p> <p><b>Awareness Indicator 3:</b> Awareness of pollutant sources impairing water quality</p> <p><b>Awareness Indicator 4:</b> Awareness of appropriate practices to improve water quality</p> <p><b>Goal 2:</b> Change target audience attitudes</p> <p><b>Attitudes <u>Outcome</u> 1:</b> Change attitudes to facilitate desired behavior change in critical area</p> <p><b>Attitudes Indicator 1:</b> General water-quality-related attitudes</p> <p><b>Attitudes Indicator 2:</b> Willingness to take action to improve water quality</p> <p><b>Goal 3:</b> Reduce target audience constraints</p> <p><b>Constraints <u>Outcome</u> 1:</b> Reduce constraints to behavior change</p> <p><b>Constraints Indicator 1:</b> Constraints to behavior change</p> <p><b>Goal 4:</b> Increase organizational capacity</p> <p><b>Capacity <u>Outcome</u> 1:</b> Increase capacity to leverage resources in critical areas</p> <p><b>Capacity Indicator 1:</b> Resources leveraged by grant recipient in the watershed as a result of project funding (including cash and in-kind resources)</p> <p><b>Capacity <u>Outcome</u> 2:</b> Increase capacity to support appropriate practices in critical areas</p> <p><b>Capacity Indicator 2:</b> Funding available to support NPS practices in critical areas</p> <p><b>Capacity Indicator 3:</b> Technical support available for NPS practices in critical areas</p> <p><b>Capacity Indicator 4:</b> Ability to monitor practices in critical areas</p> <p><b>Goal 5:</b> Increase target audience adoption of NPS management practices</p> <p><b>Behavior <u>Outcome</u> 1:</b> Increase adoption of practices to maintain or improve water quality in critical areas</p> <p><b>Behavior Indicator 1:</b> Percentage of critical area receiving treatment</p> <p><b>Behavior Indicator 2:</b> Percentage of target audience implementing practices in critical areas</p> <p><b>Behavior Indicator 3:</b> Ordinances in place that will reduce nonpoint source stressors</p>
---

Eventually, SIDMA will integrate with existing systems already in use for tracking and reporting NPS data. While SIPES is under development, SIDMA will remain separate from those systems. SIDMA currently includes the following features:

- ***Geographic information and mapping tools:*** Provides watershed boundaries and population data;

- **Survey builder:** Provides survey questions to be selected and adapted for use by a watershed project;
- **Mechanism for reporting social indicator data:** Use to report social indicator data to USEPA Region 5; and

After the pilot phase of the project, SIDMA will also have the following features:

- **Data input screens and database:** Use to input and store responses from questionnaires and other social indicator data;
- **Data analysis tools:** Use to generate statistics from survey data;
- **Report writing tools:** Provides assistance for communicating social indicator data

In the short term, many of these features are being supported using Qualtrics survey software.

### **Roles for State NPS Programs**

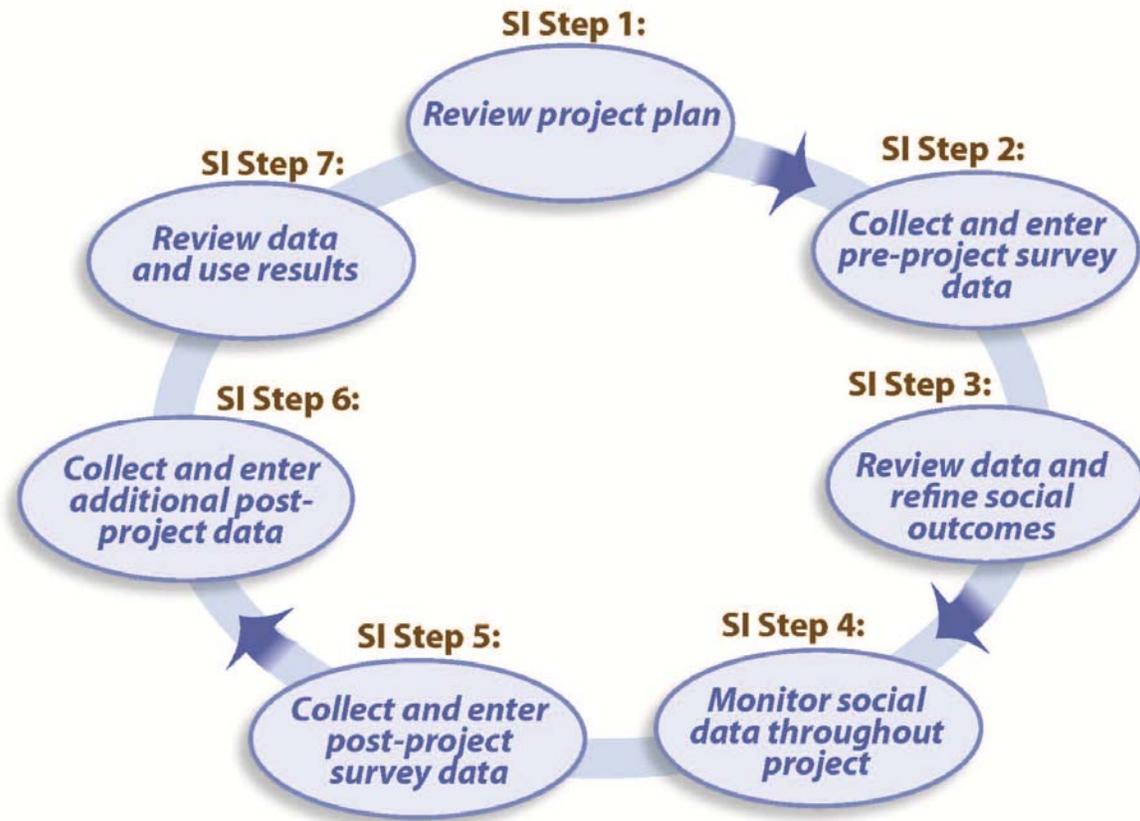
NPS programs within each state have agreed to support social indicators in the following ways:

- Work closely with project staff to help them understand which steps in the SIPES apply to their projects.
- Help project staff determine what types of mid-project evaluations are necessary.
- Help insure that projects collect data using the SIPES protocols.
- Communicate with USEPA and the regional social indicators team on refining and improving SIPES.
- Begin using social indicator data as part of their state program evaluation framework to help identify opportunities to improve program impacts.
- Consider long-term monitoring approaches and opportunities for using social indicators.

State NPS programs may eventually identify additional uses and users for SIPES.

## Section A: Steps for Using the Social Indicator Planning and Evaluation System

The Social Indicators Planning and Evaluation System (SIPES) consists of the seven steps illustrated in Figure A.1 below. This section explains each step and identifies which Handbook section contains detailed information to implement the step.



**Figure A.1: The 7 steps in SIPES**

Steps 1-3 relate mostly to project planning and steps 4-7 relate to project implementation and evaluation. Projects focused solely on developing a watershed plan (or a TMDL planning effort) would complete Steps 1-3 toward the end of their planning process. Most NPS projects focused on plan implementation or education and outreach efforts will complete all seven steps. As a general rule, you will work with your state NPS program to determine which of the steps above relate to your project.

These steps are part of an ongoing process of planning, implementing, evaluating, and adapting your management efforts. The information used in Step 1 emerges from previous work and the results generated in Step 7 can be used in future efforts.



## Step 1: Review Project Plan

Before collecting social data, you need to review your planning materials to answer four questions about your project:

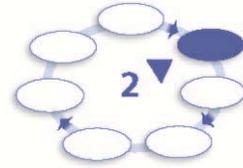
1. What are the specific NPS problem(s) your project is trying to address?
2. What are the critical area(s) that contribute to the problem(s)?
3. Who are the target audiences for the NPS problem(s) your project will address? (Target audiences are the people that influence management decisions for the critical area.)
4. What actions do you want the target audience(s) to take regarding the NPS problems?

The answers to these questions will help set the stage for focusing and evaluating your implementation efforts. Section B of this Handbook provides more information to help you with these questions.

After completing your review, you will need to register your project in SIDMA. Section C of the Handbook walks you through that process. Table A.1 summarizes these activities.

**Table A.1: Step 1 checklist**

	<b>Activity</b>	<b>Handbook Section</b>
<input type="checkbox"/>	Identify NPS problem	Section B
<input type="checkbox"/>	Identify critical area(s) for project focus	Section B
<input type="checkbox"/>	Identify target audiences	Section B
<input type="checkbox"/>	Identify the potential actions you want your target audience to take	Section B
<input type="checkbox"/>	Register your project in SIDMA	Section C



## Step 2: Collect and Enter Pre-Project Survey Data

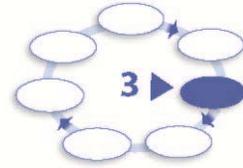
During this step, you will develop a questionnaire to collect data about the NPS awareness, attitudes, constraints, and behaviors of your target audience. SIPES supports using a set of core social indicators, but you can also use this step to collect additional supplemental social indicators to provide additional social data for your project. Section D helps you determine the appropriate survey method for your project.

SIDMA helps you develop a formatted questionnaire by providing pre-developed survey questions for the core indicators and for other supplemental indicators and social data. Some questions must be customized to fit your project. Section E of this handbook provides more instruction on developing the questionnaire.

Section F describes how to administer your data collection method and enter your data. Table A.2 summarizes these activities.

**Table A.2: Step 2 checklist**

	<b>Activity</b>	<b>Handbook Section</b>
<input type="checkbox"/>	Choose method	Section D
<input type="checkbox"/>	Compile contact list(s) for your target audience(s)	Section D
<input type="checkbox"/>	Determine sample size	Section D
<input type="checkbox"/>	Select sample	Section D
<input type="checkbox"/>	Create questionnaire	Section E
<input type="checkbox"/>	Determine dates for administering various pieces of your survey	Section F
<input type="checkbox"/>	Create advance letters, cover letters, and postcards	Section F
<input type="checkbox"/>	Develop Quality Assurance Project Plan (QAPP) if required	Section F
<input type="checkbox"/>	Administer questionnaire	Section F
<input type="checkbox"/>	Enter responses	Section F



### Step 3: Review Data and Refine Social Outcomes

You will be provided a report of your data that will help you refine your social outcomes and your plan for outreach and education activities.

Section G of the Handbook describes how to analyze and interpret your results, establish social outcomes, and develop an outreach and education plan. Table A.3 summarizes these activities.

**Table A.3: Step 3 checklist**

	<b>Activity</b>	<b>Handbook Section</b>
<input type="checkbox"/>	Analyze results	Section G
<input type="checkbox"/>	Interpret results	Section G
<input type="checkbox"/>	Establish social outcomes	Section G
<input type="checkbox"/>	Develop an outreach and education plan	Section G



## Step 4: Monitor Social Data Throughout Project

Most NPS projects using SIPES will continue for several years. Step 4 involves monitoring social data throughout your project to make sure your activities are leading toward the intended social outcomes you established in Step 3.

The general expectation is that you will evaluate your implementation activity at some point over the course of the funding cycle. If your project involves more than one implementation activity, you should evaluate the outcomes of as many of these as time and resources allow. This allows you to assess whether or not the changes you expect to see are actually happening and will provide information that will help you interpret post-project results. In addition, your project may be developing successful approaches that could be used by other projects. The exact expectations for mid-project evaluations should be discussed and agreed upon with your state NPS program office. Section H provides more information about how to do this. Table A.4 summarizes these activities.

**Table A.4: Step 4 checklist**

 <b>Activity</b>	<b>Handbook Section</b>
<input type="checkbox"/> Develop your monitoring plan	Section H
<input type="checkbox"/> Collect data based on plan	Section H
<input type="checkbox"/> Review data based on plan	Section H
<input type="checkbox"/> Adapt project activities as necessary	Section H

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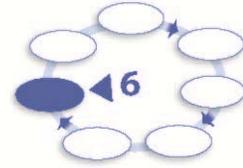
## Step 5: Collect and Enter Post-Project Survey Data

After the completion of the implementation phases of your project, you will resurvey your target audience using the same awareness, attitudes, constraints, and practices questions used in Step 3. By comparing your post-project survey data with your pre-project data, the social impact of your project is measured.

SIDMA allows you to regenerate the same questionnaire that you created and used in Step 3 with additional questions to help evaluate your project activities. To assure consistency, the questionnaire must be administered in the same way as the original. Please note that in some cases you will be resurveying the exact same people that you surveyed in Step 3, and in other cases you may survey a new random sample of your target audience. See Section I of the Handbook for more discussion. The data from your post-project survey is entered in the same manner as earlier for data analysis and reporting. Table A.5 summarizes these activities.

**Table A.5: Step 5 checklist**

 <b>Activity</b>	<b>Handbook Section</b>
<input type="checkbox"/> Create questionnaire (if necessary—may make minor adjustments to questionnaire used in Step 3.)	Section I
<input type="checkbox"/> Update contact list(s) for target audience(s)	Section I
<input type="checkbox"/> Review sample size; modify if necessary	Section I
<input type="checkbox"/> Select new sample if necessary	Section I
<input type="checkbox"/> Determine dates for administering various pieces	Section I
<input type="checkbox"/> Create advance letters, cover letters, and postcards	Section I
<input type="checkbox"/> Administer questionnaire	Section I
<input type="checkbox"/> Enter responses	Section I



## Step 6: Collect and Enter Additional Post-Project Data

At the completion of your project, you will complete a post-project worksheet and enter the responses into SIDMA. The worksheet is found in Section I of this handbook and asks questions related to the capacity indicators, project outcomes, and lessons learned. The end-of-project worksheet should incorporate information from more than just the project coordinator since all involved may have different perspectives.

The first four questions address factors that have supported or hindered your project's accomplishments. In order to answer these questions, it is necessary to incorporate feedback from partners and cooperators. A focus group is the recommended method for gathering this feedback. Focus groups and alternative methods are described in section I of this Handbook. The other questions can be answered with information from project records and opinions of project staff. Table A.6 summarizes these activities.

**Table A.6: Step 6 checklist**

	Activity	Handbook Section
<input type="checkbox"/>	Schedule input session for end-of-project questionnaire	Section I
<input type="checkbox"/>	Invite participants to input session	Section I
<input type="checkbox"/>	Develop questions for input session	Section I
<input type="checkbox"/>	Conduct focus group or other method to gather information from stakeholders	Section I
<input type="checkbox"/>	Complete post-project worksheet	Section I
<input type="checkbox"/>	Enter worksheet information into SIDMA	Section I



## Step 7: Review Data and Use Results

The data that you enter into SIDMA will automatically be reported to your state and regional EPA and/or state NPS programs for their use in reporting progress being made across the state and region in improving NPS water quality. SIDMA will also produce a statistical analysis of your survey data for your use in reporting your project’s success and planning subsequent projects. To help you understand the analysis and data, please refer to Section J of this Handbook.

You may be required to submit a final report for your project to your state EPA or state NPS program and other funding agencies. Since reporting requirements vary from state to state, SIDMA cannot create your final report. However, SIDMA’s tools generate charts and graphs that can aid the process and create more effective reports. You can download data and export the charts and/or graphs into an electronic document or print them to include as part of a progress or project report.

The results will be helpful to future projects in your watershed and will help your state NPS program and USEPA Region 5 learn about the effectiveness of specific NPS project activities. Table A.7 summarizes these activities.

**Table A.7: Step 7 checklist**

 <b>Activity</b>	<b>Handbook Section</b>
<input type="checkbox"/> Review statistical analysis produced by SIDMA	Section J
<input type="checkbox"/> Interpret statistics	Section J
<input type="checkbox"/> Report data	Section J
<input type="checkbox"/> Use knowledge gained to adapt approaches for future projects	Section J

## Section B: NPS Project Planning: Setting the Stage for Working With Target Audiences



### Introduction

Section A led you through an overview of the steps required to use the tools and processes described in this Handbook. Section B will help you relate your project's environmental goals to the social outcomes that will help you achieve them. ***Note that you will need to complete each of the elements of this section before proceeding further with SIPES.***

NPS projects are typically part of a comprehensive watershed plan and are intended to help achieve the goals outlined in that plan. Because solving and preventing most NPS problems requires people to change behaviors and adopt practices that improve water quality, such projects usually benefit from an education or outreach component. In addition, Section 319 nine-element watershed management plans require such a component. Our focus in this section is on planning the education and outreach aspects of your project.

Not every NPS project will be at the same phase of the watershed management cycle; some will be in the early planning stages, while others will be nearing completion. Water quality projects also vary considerably in terms of scale and size of target audiences. You will need to determine the types of activities that are appropriate depending on where you are in the project cycle.

### Context for NPS Project Planning

*Planning* is an iterative and adaptive process that sets goals and organizes people and resources to achieve those goals. When an issue has many stakeholders, planning typically includes a process by which people form a consensus about the nature of a problem, agree about how it should be tackled, and assign responsibility to carry out various activities. In these situations, stakeholders are often involved or informed throughout the entire process. Other elements of a full project cycle include various pre-project assessments or surveys, budgeting, monitoring and evaluation, reporting to the public, and incorporating evaluation information into decisions about an ongoing or later project.

*Watershed planning* is a systematic effort to identify watershed-based issues, set goals and objectives, and prepare an implementation approach to address those issues. Watershed planning should occur within the context of other state, regional, or local plans or requirements. Local land use plans and zoning, regional transportation planning, and economic development planning are just a few examples of processes that can impact NPS efforts. The ability to achieve both environmental and social goals is affected by broader community planning and decision-making. Consequently, it is essential that NPS project planning be coordinated with these other efforts as much as possible. At a minimum, project managers should be aware of complementary efforts affecting their project area.

There is no shortage of guidance on effective watershed planning; however, most of this guidance overlooks the social component of planning. USEPA's *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*<sup>1</sup> should be your main reference for planning NPS projects. In it, USEPA identifies nine minimum elements for watershed plans:

- a) An identification of the sources that will need to be controlled to achieve load reductions established in the state's nonpoint source TMDL inventory or any other goals identified in the watershed-based plan.
- b) An estimate of the load reductions expected from the management measures prescribed.
- c) A description of the NPS management measures that will need to be implemented to achieve load reduction and identification of the critical areas in which the measures will need to be implemented to achieve the NPS pollution abatement goals.
- d) An estimate of the assistance (financial and technical) and authorities needed for implementation of the plan.
- e) An information and education component, which the state will use to enhance public understanding of the project and encourage public involvement in NPS efforts.
- f) An implementation schedule.
- g) A schedule of interim, measurable milestones for determining whether NPS measures or other control actions are being implemented.
- h) A set of criteria for measuring progress toward water quality standards.
- i) A monitoring component to evaluate how effective the implementation efforts are.

SIPES is designed to complement USEPA's *Handbook*, and is specifically focused on evaluating water quality projects. The social information you collect through the steps outlined in this Handbook contributes to elements d, e, f, g, h, and i of the above list. USEPA's *Handbook* provides an in-depth discussion of this planning process.

Figure B.1 shows how the collection of social indicator data corresponds with the watershed planning process as outlined in USEPA's *Handbook*. Steps 1-2 address the early stages of goal-setting and data collection that provide a foundation for NPS interventions. Step 3 uses social data to refine your project's social outcomes and design education and outreach interventions.

If your project is developing a watershed plan, Step 3 of the SIPES Handbook is as far as you need to go at this time. If your project is building on an existing plan, you'll implement planned activities and monitor the results of those activities in Step 4. In Steps 5-7, you'll collect additional information to determine the progress you made toward project goals and outcomes, and evaluate what worked well and what you might change in future projects.

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<sup>1</sup> *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*. (2008) USEPA (EPA 841-B-08-002). This reference is available at: [http://www.epa.gov/owow/nps/watershed\\_handbook/#contents](http://www.epa.gov/owow/nps/watershed_handbook/#contents)

## EPA Watershed Planning & Implementation Process

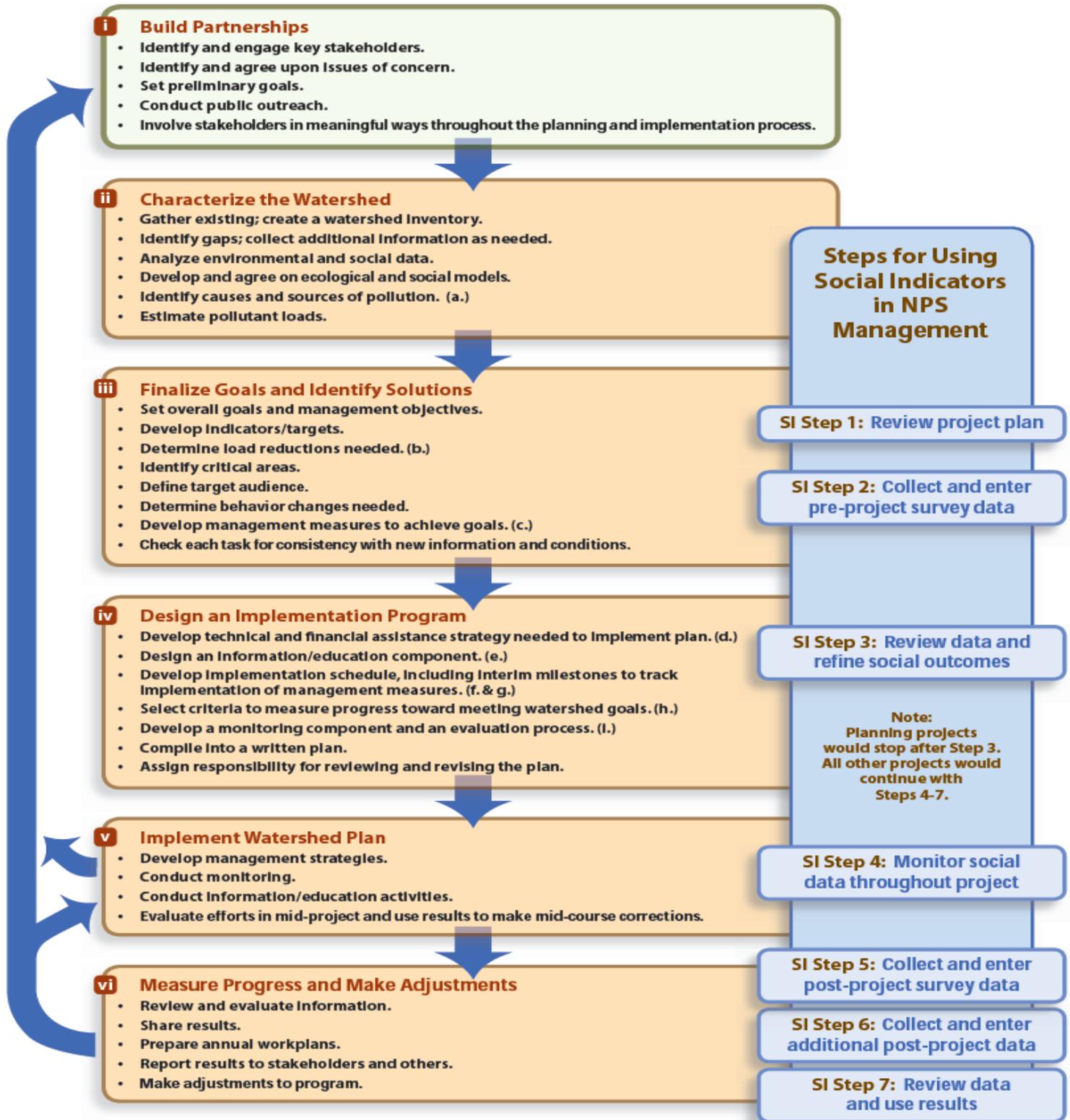


Figure B.1: Relating SIPES steps to the USEPA Handbook.

## Planning NPS Projects Using Social Indicators

SIPES was developed primarily as an evaluation tool for 319 NPS projects to assess changes in a target audience's awareness, attitudes, capacity, constraints, and behavior over time. However, SIPES can also aid in planning NPS projects by collecting valuable information about the target group that will help guide management activities that have an education or outreach component.

Your project's activities should be clearly linked to the specific goals identified in your watershed or other site-specific implementation plan. As with watershed planning itself, there are many different methods and approaches to planning education and outreach interventions. The system outlined in this handbook emphasizes the following four planning activities that will precede your pre-project survey:

- Identifying NPS problem
- Identifying critical areas
- Identifying target audiences
- Identifying potential actions that you want the target audience to take

You will be asked to supply information about each of these issues as you register your project in SIDMA.

### Identifying NPS Problems

Your project was funded to address specific NPS problems affecting or threatening water quality. These problems are identified in your watershed plan or NPS project plan. Specifying the focus of your efforts and selecting critical areas are crucial for determining the target audiences who are expected to be engaged in your project activities, and the actions you want them to take.

### Selecting Critical Areas

NPS projects are most effective when environmental and social activities target the geographic areas that are expected to have the greatest impact on solving or preventing specific water quality problems.

For the purposes of this handbook, **critical areas** are defined both as *lands contributing disproportionately to water quality impairment because they are environmentally vulnerable and/or inappropriately managed based on their environmental vulnerability and consistency with long-range goals of the watershed management plan*. Critical areas may be either highly localized patches or more diffuse areas. Critical areas may be defined for individual pollutants and habitat goals or for combinations of factors.

Developing criteria for identifying critical areas can be an element in your water quality work. The criteria will be based on expected environmental outcomes and the relative contribution specific land areas are expected to make to overall load reductions and water quality protection.

Examples of critical area criteria include:

- Potential contribution to pollutant loads (restoration);
- Contribution to ecosystem services, such as pollutant filtering (e.g. wetlands, existing riparian buffers) (prevention); and
- Contribution to fish or wildlife habitat goals, habitat-related criteria such as the composition and structure of riparian vegetation may also be appropriate (restoration or prevention).

Examples of critical areas frequently include:

- Highly erodible soils and steep slopes close to a lake or stream and actively managed or used (restoration);
- High concentrations of nutrient and pesticide loads on land surface, coupled with high rates of flow and a delivery mechanism (restoration);
- Overgrazed areas or areas where livestock have access to a waterbody (restoration);
- Areas where significant development is planned (prevention); and
- Headwater areas (prevention).

Engaging the public in this process can provide important local information, keep stakeholders informed, and build ownership of the plan. The USEPA publication, *Community Culture and the Environment: A Guide to Understanding a Sense of Place*<sup>2</sup> is a valuable resource for ideas on involving interested groups and citizens. Additional information about identifying critical areas is covered in Chapter 10 of USEPA's *Handbook*.

## Identifying Your Target Audiences

*A target audience is a group of individuals whose awareness, attitudes, capacity, constraints, and behavior must support your project's environmental outcomes.*

The environmental information you've collected as part of your watershed planning will indicate broadly defined groups of people within your project area that are influencing water quality and your ability to achieve environmental outcomes. These are the groups you will survey using the SIPES questionnaire. Examples are "all farmers in a priority subwatershed" or "all households in seven suburban neighborhoods in the project area" or both.

To begin identifying your target audiences, determine who owns or manages land in critical areas, or has an influence on land management. You may find the following resources helpful in completing this task:

- Census data;
- Plat books;
- Register of deeds;
- Homeowners associations;

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<sup>2</sup> *Community Culture and the Environment: A Guide to Understanding a Sense of Place*. (2002) USEPA (EPA 842-B-01-003). This reference is available at: [http://www.epa.gov/air/care/library/community\\_culture.pdf](http://www.epa.gov/air/care/library/community_culture.pdf)

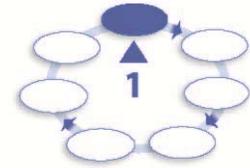
- Mailing lists;
- Zoning classifications;
- Local knowledge (personal communication with other landowners, state agency staff, relevant county or municipal staff, other community members etc.); and
- Information gathered from a social profile or similar method.

In agricultural areas, local knowledge about who manages the land (owners vs. renters) is essential. In suburban and urban areas, mailing lists and zoning classifications can be more effective. Each project area is unique, so carefully think through this task to ensure that you will be reaching the people with the power to make or influence land management decisions.

### **Selecting Potential Actions**

This task is closely related to target audience identification. In addition to identifying *who* needs to take action to improve water quality, you will need to determine *what* you want them to do to reduce or prevent water quality problems. For this Handbook that “what” is the management practices you would like them to adopt. You will need to consider both the ability of a practice to reduce pollutant loading and its potential for adoption to determine which combination of practices is optimal for your situation. For a list of selection criteria for environmental management practices, see Chapter 10 in USEPA’s *Handbook*.

# Section C: Getting Started with SIDMA – the Online Social Indicators Data Management and Analysis Tool



## Creating an Account

The Social Indicators Data Management and Analysis (SIDMA) tool helps organize, analyze, and visualize social indicators related to water quality improvements through spatial relationships.

The home page for SIDMA is <http://35.9.116.206/si/index.asp>

In order to use the website you will need to create a new account.

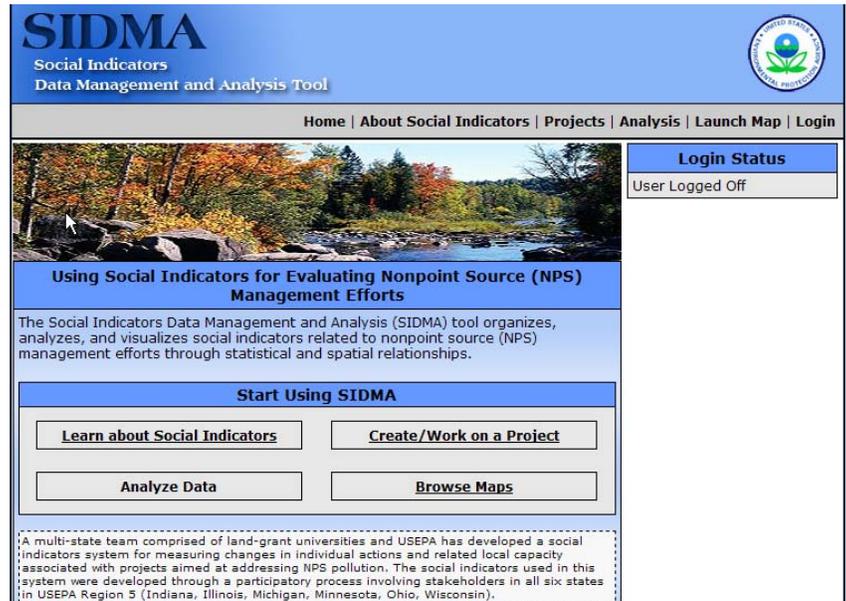


Figure C.1: SIDMA homepage with user logged off

To create a new account:

- Find and click “Login”, located in the top menu bar (see Figure C.1).
- Select “Create New Account”.
- Complete the required information.
- Submit request by sending an e-mail to the Administrator that your id is waiting to be approved: [sidma.msu@gmail.com](mailto:sidma.msu@gmail.com).
- Test login; once the administrator gives you the go ahead, try logging in.

You should see on the home page in the Login status that you are logged on (see Figure C.2).

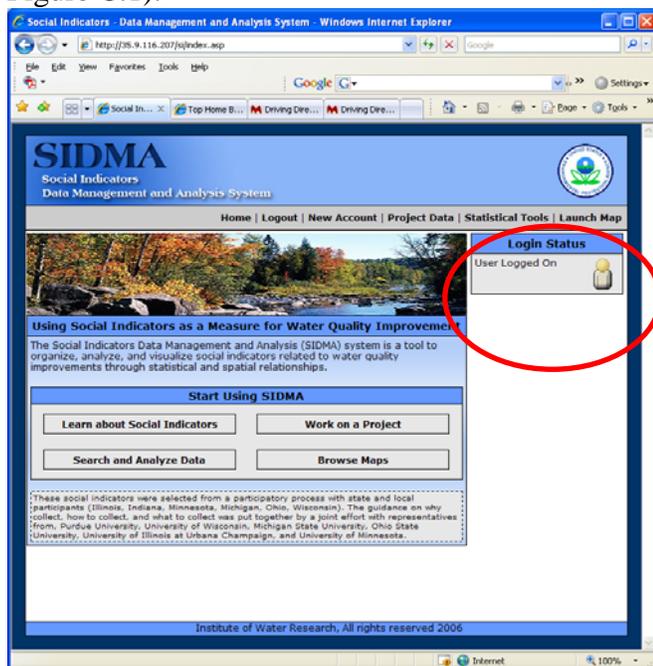


Figure C.2: Illustration of user logged on

## **Creating a Project in SIDMA**

Once you have successfully logged in, you can create your own project or review other projects in the system. To do this from the home page, select "Projects". This will take you to a page that will allow you to create your own or view existing projects.

To create a new project simply click "Create a new project" and fill in the relevant information. (The identifier field is optional for those states that have unique ID numbers for their projects and would like to track them that way.) When you have entered all the required information, select "Save project form". You will see a summary of the project you just created. Section E describes how to create your SIPES questionnaire using SIDMA.

Note: You will only be able to edit or create surveys for projects you create; however, you can browse and look at surveys and survey results from other projects. You can see all the editable projects you have created by clicking the "My Projects" button from the Search Projects Page.

## **Answering the Planning Questions from Section B**

Before you begin working in SIDMA, you should answer the four questions about the focus of your project:

1. Have you identified the specific NPS problem(s) your project is trying to address?
2. Have you identified the critical area(s) that contribute to the problem(s)?
3. Have you identified target audiences for the NPS problem(s) your project will address?
4. Have you identified the actions you want the target audience(s) to take to address the NPS problems?

SIDMA provides space for you to describe your NPS problems, critical areas, target audiences, and actions you would like the audiences to take.

## **Additional SIDMA Information**

Additional information about using SIDMA is provided throughout this Handbook. Most notably Section E (Developing Your Social Indicators Questionnaire) contains valuable information about SIDMA.

If SIDMA is malfunctioning, please contact Jeremiah Asher at Michigan State University, [asherjer@msu.edu](mailto:asherjer@msu.edu). If you are having difficulties getting logged on, please contact Cyd Curtis at USEPA, [Curtis.Cynthia@epa.gov](mailto:Curtis.Cynthia@epa.gov) or Ken Genskow at the University of Wisconsin-Madison, [kgenskow@wisc.edu](mailto:kgenskow@wisc.edu).

## Section D: Choosing a Survey Method and Sample Size



This section describes methods for choosing a survey method and the appropriate sample size for your survey. In the following section, Section E, you will learn how to create project-specific questionnaires in SIDMA. In Section F, you will learn how to administer the survey you have created. This section contains an overview of different types of surveys – mail, e-mail, in-person, group setting, and telephone. Each methodology has advantages and disadvantages and may only be appropriate in specific situations (see text below and Table D.1). After you select the type of survey you will conduct, you will need to gather contact information for your target audience. Depending on your target audience size, you may need to select a random sample of people to survey.

### Mail Surveys

In most cases, projects will conduct a mail survey. The mail survey is relatively easy to administer by following a “five-wave design” which consists of five separate mailings to survey respondents. A mail survey is lower in cost than in-person or phone surveys when the sample size is large. Usually it is easier to obtain a representative sample for a mail survey than for an e-mail or phone survey. The portion of your target audience that has access to reliable e-mail with an e-mail address that you can obtain is likely to be low. Similarly, fewer and fewer households have landlines each year and so a phone survey may not be reflective of the larger target audience. There are several drawbacks associated with conducting a mail survey. One of the drawbacks is a potentially low response rate, but this can be mediated by using the methods detailed later in this section. Another disadvantage of the mail survey is bias created when illiterate or semi-literate respondents cannot complete the survey.

### Telephone Surveys

Telephone survey software has the capacity to dial random phone numbers within specified parameters to conduct a random sample; however, this software is costly and it is often not possible to know if residents reside in your watershed. It is recommended that you only use phone surveys with small populations for which you have contact information and will not need to use telephone survey software. The exact size of population you can use for phone surveys will vary for different groups based on staff capacity to make the calls at various times of the day and evening.

Phone surveys are gradually becoming less capable of accurately representing an entire community as increasing numbers of people switch from landlines to cell phones. There is not yet a reliable way to locate cell phone numbers for geographically targeted respondents. An additional disadvantage of the phone survey is determining the best time to contact people. You may need to call during times other than business hours, which might be difficult for staffing purposes. Unless your sample size is small, phone surveys require a great deal of staff time which is expensive and detracts from other work duties.

## **In-person Surveys**

In-person surveys can enable us to collect high quality data but are very labor and time intensive. There are also concerns about reliability as each interviewer may have a distinct style that could bias results. One of the advantages of in-person surveys is that response rates are generally higher than for other types. Individuals who are conducting the survey must be trained. If you have a small target population and a handful of well-trained interviewers, this could be a very useful methodology. Other times to consider using in-person surveys are when you have a target audience that is unlikely to respond to mail surveys or other non-personal forms of interaction. A final consideration that is unique to in-person surveys is the need to ensure the safety of the interviewers.

## **E-mail Surveys**

For the purposes of this Handbook, e-mail surveys are surveys that participants are invited to respond to via an e-mail that links to a website. E-mail surveys can be useful for specific purposes; however, challenges involved in obtaining reliable lists of e-mail address and limited access for some people make them problematic for general use. Even if a good list of e-mail addresses is obtained, spam filters often do not allow e-mails to be received from unknown senders or from bulk mailings. For the most part, e-mail surveys will not be appropriate for collecting social indicator data and there are criteria that need to be met for e-mail surveys to be effective. You need to have working e-mail addresses for your target audience and you must be confident that everyone has functional Internet access. Usually, you will only be able to conduct an e-mail survey when the population is small.

## **Group Surveys**

A group survey is one that is administered to individuals in a group setting. This is appropriate only for very small groups that are likely to be gathered in one place at the same time. The exact group size will differ based upon context, but it needs to be small enough that you can ensure everyone will attend the meeting. Advantages include an assured response rate and the ability to work with the group on other issues related to your watershed project after they complete the survey. A caveat of administering a survey this way is that it is very important that people not influence each other's responses during the survey and that the people running the group not bias the answers in any way.

## **Hybrid Approaches**

It is possible to combine different survey methodologies. For example, a mailed survey can also include an Internet address enabling respondents to reply either by mail or on the Internet. Future versions of SIDMA will allow you to conduct your survey this way. However, if you choose to combine methodologies using this version of the Handbook and SIDMA, you should consult with a survey professional to avoid potential risks associated with this type of approach, such as response bias.

**Table D.1: Advantages and disadvantages of different survey types**

Survey Type	Advantages	Disadvantages	Other Considerations
Mail	<ul style="list-style-type: none"> <li>• Relatively easy to administer</li> <li>• Lower cost than phone/in-person except for small groups</li> <li>• Usually easier to obtain a representative sample</li> </ul>	<ul style="list-style-type: none"> <li>• Gathering appropriate addresses</li> <li>• Data comes in over a period of time</li> <li>• Literacy levels</li> <li>• Response rates</li> <li>• Not certain who actually completes the questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>• Following the five-wave design</li> <li>• Cost about \$9 per address on mailing list (includes cost of all five waves).</li> <li>• Costs may increase if responses are low and have to do followup phone surveys</li> </ul>
E-mail	<ul style="list-style-type: none"> <li>• Inexpensive</li> <li>• Appropriate for a finite population for whom you have all e-mail addresses</li> </ul>	<ul style="list-style-type: none"> <li>• Not representative</li> <li>• Gathering e-mail addresses</li> <li>• Respondents with slow Internet connections will have difficulties</li> </ul>	<ul style="list-style-type: none"> <li>• Appropriate software</li> <li>• Costs negligible</li> </ul>
In-person	<ul style="list-style-type: none"> <li>• High response rates</li> <li>• Interviewer can explain questions</li> </ul>	<ul style="list-style-type: none"> <li>• Higher cost due to labor and time</li> <li>• Need to train interviewer</li> <li>• Can be difficult to schedule</li> <li>• Interviewer bias</li> <li>• Potential concerns about interviewer safety</li> </ul>	<ul style="list-style-type: none"> <li>• Presentation of interviewer</li> <li>• Establishing rapport</li> <li>• Gaining trust</li> <li>• Recording interview data</li> <li>• Useful to survey small target populations</li> <li>• Costs incurred are primarily to train or hire competent interviewers and for data entry of responses</li> </ul>
Group	<ul style="list-style-type: none"> <li>• Data is gathered all at once</li> <li>• Gathering people together allows for discussion of other topics</li> </ul>	<ul style="list-style-type: none"> <li>• Can only be used with very small populations</li> <li>• Scheduling survey time may be difficult</li> <li>• Bias can be introduced by attendees and group leaders</li> </ul>	<ul style="list-style-type: none"> <li>• Costs will include printing of questionnaires and data entry</li> </ul>
Telephone	<ul style="list-style-type: none"> <li>• Relatively low cost for small samples</li> <li>• Quick data collection</li> <li>• Good response rates</li> </ul>	<ul style="list-style-type: none"> <li>• Need to train interviewers</li> <li>• Miss people in population due to cell phones, not having phone service, and unlisted landline numbers</li> <li>• Determining optimum contact times</li> <li>• Generally more expensive than mail surveys</li> </ul>	<ul style="list-style-type: none"> <li>• Usually need appropriate software</li> <li>• Cost averages about \$30 per completed questionnaire if use a non-profit firm; less if volunteers from the watershed group conduct the surveys.</li> </ul>

## Census and Samples

If you are working with a relatively small target audience of roughly 535 or fewer, you should include the entire target-audience population in your survey. This is called taking a *census* of the

population versus a sample. In this case, it is important to try to get as many people to respond as possible since you will not be relying on statistics to generalize to a larger population. The methods for conducting a census are the same as for a sample, but you may consider using more personalized forms of surveys such as in-person or phone contact. When you cannot do a census because your target audience is too large, it is important to recognize that tools for statistical analysis rely on random samples, and without a random sample, results do not generalize to a larger population. While it is important to survey people who are most active in project-related activities, responses solely from these people are not likely to be representative of the larger population you are targeting.

## Sample Size

The **sample size** is the number of returned questionnaires needed to accurately represent your entire population. Since you can't expect all of the questionnaires to be returned, you will need to send more questionnaires than the sample size. It is standard to assume that 10 percent of the questionnaires will be undeliverable due to incomplete or inaccurate contact information, or for other reasons. It is also standard to assume that 10 percent of the returned questionnaires received will be incomplete or unusable. While formulas and tables exist to allow for the calculation of sample sizes, you will not need to do this work. Table D.2 provides guidelines for the number of surveys you need to mail to get the appropriate sample size to represent your population. This table provides the number of questionnaires to mail for a sampling error of +/- 5 percent.

**Table D.2: Sample size**

Size of Target Audience	Target Number of Responses Needed	Number of Questionnaires to Mail
<535	217	Use all names (conduct a census)
750	254	627
1,000	278	686
2,500	333	822
5,000	357	881
10,000	370	914
25,000	378	933
50,000	381	941
100,000	383	946
1,000,000	384	948
100,000,000	384	948

\*Number of questionnaires to mail is based upon a 95% confidence level and a sampling error of +/- 5%.  
Table adapted from Dillman.<sup>3</sup>

Once you have determined your sample size, you will need to draw a random sample of addresses from your target audience mailing list. To do this using Microsoft Excel:

<sup>3</sup> Dillman, D.A.(2000) Mail and Internet Surveys: The Tailored Design Method. 2<sup>nd</sup> Ed. New York, NY: John Wiley and Sons.

1. Insert two columns at the beginning of a spreadsheet containing the names and addresses of your target audience.
2. Fill the first column with randomly generated numbers using “=RAND()”. There should be nothing entered in the parentheses.
3. Copy the numbers from the column and paste them into the second column using “paste special” and “values.”
4. Sort in either ascending or descending order and select the number of addresses you need from the top of the table.

## Section E: Developing Your Social Indicators Questionnaire



### Introduction

This section provides detailed instructions on how to create a questionnaire for collecting social indicator data. You will create your survey through a survey system called Qualtrics. Please contact Cindy Salazar, [salazarc@purdue.edu](mailto:salazarc@purdue.edu), for detailed information about how to do this. This section describes how to select and customize questions and how to create and print the questionnaire.

In order to develop your questionnaire, you will first need to enter your log-in information and create your project in SIDMA. These instructions can be found in Section C of the Handbook.

### Selecting and Customizing Questions

Below, you will find instructions for each set of questions in the social indicator questionnaire.

#### Rating of Water Quality

This question is required in its entirety. Essentially, this is a “warm-up” question for the survey respondent that prompts their thinking about water quality issues and orients them to the subject matter. This question also measures your target audience’s awareness of water quality problems in your watershed.

#### Your Water Use

Like *Rating of Water Quality*, this question also gets respondents thinking about the issue and is required in its entirety. It will also give you some basic information regarding how your target audience uses local water resources and if they know where rain water goes.

#### Your Opinions

This question is required in its entirety. It provides data regarding the attitudes of your target audience about general water quality issues. The responses from the questions in this table will be scored together as an index to create one overall attitudinal score.

#### Water Impairments

This question provides a measure of your target audience’s awareness about water impairments. This question is required, but the options within it are customizable for your watershed. On the hardcopy of your questionnaire, select no less than three (3) and no more than ten (10) impairments that are applicable in your watershed. This information should be available in your watershed plan or preliminary planning materials.

In some cases, the impairment options may not be consistent with the terminology that you are using in your watershed. If this is the case, select the options that most closely match the impairments in your watershed, and refer to the section below on formatting your survey after downloading the questionnaire to the word processing program on your computer.

### **Sources of Water Pollutants**

This question provides information about your target audience's awareness about the causes of water quality impairments. This question is required, but the options should be customized for your watershed. On the hardcopy of your survey, select no less than three (3) and no more than eighteen (18) sources that are applicable in your watershed.

### **Consequences of Poor Water Quality**

This question is intended to measure your target audience's awareness of what happens as a result of poor water quality. This question is required, but the options should be customized for your watershed. On the hardcopy of your survey, select no less than three (3) and no more than twelve (12) sources that are applicable in your watershed.

### **Practices to Improve Water Quality**

This question is required. It is intended to measure overall awareness, experience, and willingness to use practices tied to improved water quality. The maximum number of practices that you can choose is around 12-17; the exact number will depend upon the number of words in the practice descriptions that you choose. You will need to select 4 of these practices that you would like detailed information about – your final survey will include more questions about these practices as shown in figure E.1.

### **Making Decisions about My Property**

This set of questions is required in its entirety and is designed to collect information regarding the constraints individuals have for implementing practices to improve water quality.

### **About You/About Your Agricultural Operation**

These sections are required and include demographic, household, and/or agricultural operation characteristics. This type of information will be helpful for you when targeting your management education efforts. For example, you may find out that the lowest levels of awareness and adoption are present in one demographic segment of your target audience. The questions that are included (both required and optional) have been shown in research to be related to adoption decisions.

The *About You* questions differ for the agricultural operation and non-agricultural questionnaires. Both provide information to help you better understand the people you will be working with. Each set of questions is discussed separately.

**Cover Crops**  
Cover crops include grasses, legumes and forbs for seasonal cover and other conservation purposes.

1. Do you use or have you ever used cover crops either annually or on a rotational basis?  
 Currently use (go directly to table below)  
 Don't currently use (go to question 3)  
 Never used (go to question 2)

2. How familiar are you with cover crops?  
 Never heard of it  
 Somewhat familiar with  
 Know how to use it; not using

3. Are you willing to try cover crops during the next field season?  
 Yes  
 Maybe  
 No

4. On a scale of 1-5, indicate how much of a problem each statement below is for either starting or continuing use of cover crops?

	Not a problem ←————→ Major problem				
	1	2	3	4	5
Lack of skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Doesn't fit with current practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Too much time required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My views about farming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prior personal experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does not apply to my farm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure E.1: Sample of Format for Survey Questions about 4 Key Practices

**About You: Non-Agricultural**

The following questions are required:

- Do you make the home and lawn care decisions in your household?
- What is your gender?
- In what year were you born?
- What is the highest grade in school you have completed?
- What is the approximate size of your residential lot?
- Do you own or rent your home?
- How long have you lived at your current residence?
- Do you use a professional lawn care service?

The remaining questions are optional but may provide important information relevant to your project. You should select those that meet your needs.

**About Your Agricultural Operation**

The following questions are required:

- Which of the following best describes your position as an agricultural operator?
- Please estimate the tillable acreage of your agricultural operation this year.

The remaining questions in *About Your Agricultural Operation* are optional and may provide important information relevant to your project. You should select those questions that meet your needs.

### **About You: Agricultural**

The following questions are required:

- What is your gender?
- In what year were you born?
- What is the highest grade in school you have completed?

The remaining questions are optional and can be used in both Agricultural and Non-Agricultural surveys. You should select those questions that meet the needs of your project.

### **Septic Systems**

The section pertaining to septic systems is optional. If on-site septic systems will be addressed by your project, or if you would like to quantify information about the potential extent of septic management issues in your watershed, you should consider using some or all of these questions in your questionnaire.

### **Information Sources**

The question pertaining to information sources is optional. If you are interested in understanding where your audience gets information regarding water quality issues in order to better target your information and outreach activities, you may want to include this question. Select and customize the information sources that are of interest to your project.

### **Comments Page**

The comments page is required, and will automatically be included with your questionnaire. This section leaves a space for respondents to leave open-ended comments.

### **Creating Your Own Questions**

The survey questions provided have been extensively pre-tested and reviewed and will produce sufficient information for you to use social indicators in your project. If you would like to include additional questions, this should be done through consultation with experienced survey developers.

### **Finalizing Your Questionnaire**

You will work with Cindy Salazar at Purdue University to finalize your questionnaire. After you have adjusted the language and formatting, print a test copy. Check carefully to be sure the questions are all readable and that no part of the questionnaire has been cut off. You also want to make sure that all questions are contained on one page.

To produce your survey cover, insert the appropriate title, map (or other suitable image), and instructional language. The back page of your survey should include a space for survey respondents to add comments.

After you have printed a draft version of your questionnaire, you should check with your state funding agency for information regarding possible questionnaire review procedures in your state.

## Printing Your Questionnaire for Mailed, In-Person, and Group Surveys

You should expect your questionnaire to be approximately 12 pages long, including a cover page. Try not to exceed this number. If you do not select any optional questions, you may be able to get your questionnaire to fit on 8 pages. If you are printing your questionnaire as an 8.5 inch by 11 inch booklet, we recommend using folded sheets of 17 inch by 11 inch paper. By printing on front and back, each folded sheet of paper will provide 4 pages for your survey. The booklet would then be saddle stitched or stapled in the center of the sheets. You can find an example of this type of questionnaire in Figure E.2. For mailing purposes and presentation, it is best not to fold the questionnaire to fit in a smaller envelope.

Even if there are only a few dozen individuals on your mailing list, you should consider having the questionnaire printed by a professional print shop for a polished look. If your local project sponsor has printing capability in-house, this can also be a viable option. The final survey does not need to be in color but should be very readable and appealing to the respondents. Remember, the design and look of your questionnaire will impact your response rate.

**3. General Water Quality Attitudes**

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

	Strongly disagree	Disagree	Neutral/No opinion	Agree	Strongly agree
1. Individual households have the potential to improve water quality.	<input type="checkbox"/>				
2. Taking action to improve water quality is too expensive for me.	<input type="checkbox"/>				
3. The economic activity of my community depends upon good water quality.	<input type="checkbox"/>				
4. The loss of your fish habitat is equal to the loss of your income.	<input type="checkbox"/>				
5. The time of year that income received is applied to them helps ensure water quality.	<input type="checkbox"/>				
6. If it is important to protect water quality, water quality economic development.	<input type="checkbox"/>				
7. It is the responsibility of the government to help protect water quality.	<input type="checkbox"/>				
8. Investing in water quality protection adds the benefit of an economic development.	<input type="checkbox"/>				
9. It is the responsibility of the government to promote economic development.	<input type="checkbox"/>				
10. Most fish and wildlife habitat needs attention to maintain water quality.	<input type="checkbox"/>				
11. The amount of habitat that is used on farms helps improve water quality.	<input type="checkbox"/>				
12. Investment in water quality protection is a cost to the area.	<input type="checkbox"/>				
13. My actions have an impact on water quality.	<input type="checkbox"/>				
14. I would be willing to pay more to improve water quality in my area. (range from \$0 to \$1000)	<input type="checkbox"/>				
15. I would be willing to change management practices to improve water quality.	<input type="checkbox"/>				

**4. Types of Water Pollutants**

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

	Not a problem	Minor problem	Major problem	Very serious problem	Not a problem
1. Landfill in streams	<input type="checkbox"/>				
2. Discharges in streams	<input type="checkbox"/>				
3. Dumping in streams	<input type="checkbox"/>				
4. Discharges in wetlands	<input type="checkbox"/>				
5. Oil in streams	<input type="checkbox"/>				

**5. Sources of Water Pollutants**

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

	Not a problem	Minor problem	Major problem	Very serious problem	Not a problem
1. The farm uses herbicide like Roundup	<input type="checkbox"/>				
2. The farm uses insecticide like DDT	<input type="checkbox"/>				
3. The farm uses fertilizer like urea	<input type="checkbox"/>				
4. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
5. The farm uses insecticide like DDT	<input type="checkbox"/>				
6. The farm uses fertilizer like urea	<input type="checkbox"/>				
7. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
8. The farm uses insecticide like DDT	<input type="checkbox"/>				
9. The farm uses fertilizer like urea	<input type="checkbox"/>				
10. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
11. The farm uses insecticide like DDT	<input type="checkbox"/>				
12. The farm uses fertilizer like urea	<input type="checkbox"/>				
13. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
14. The farm uses insecticide like DDT	<input type="checkbox"/>				
15. The farm uses fertilizer like urea	<input type="checkbox"/>				
16. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
17. The farm uses insecticide like DDT	<input type="checkbox"/>				
18. The farm uses fertilizer like urea	<input type="checkbox"/>				
19. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
20. The farm uses insecticide like DDT	<input type="checkbox"/>				
21. The farm uses fertilizer like urea	<input type="checkbox"/>				
22. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
23. The farm uses insecticide like DDT	<input type="checkbox"/>				
24. The farm uses fertilizer like urea	<input type="checkbox"/>				
25. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
26. The farm uses insecticide like DDT	<input type="checkbox"/>				
27. The farm uses fertilizer like urea	<input type="checkbox"/>				
28. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
29. The farm uses insecticide like DDT	<input type="checkbox"/>				
30. The farm uses fertilizer like urea	<input type="checkbox"/>				
31. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
32. The farm uses insecticide like DDT	<input type="checkbox"/>				
33. The farm uses fertilizer like urea	<input type="checkbox"/>				
34. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
35. The farm uses insecticide like DDT	<input type="checkbox"/>				
36. The farm uses fertilizer like urea	<input type="checkbox"/>				
37. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
38. The farm uses insecticide like DDT	<input type="checkbox"/>				
39. The farm uses fertilizer like urea	<input type="checkbox"/>				
40. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
41. The farm uses insecticide like DDT	<input type="checkbox"/>				
42. The farm uses fertilizer like urea	<input type="checkbox"/>				
43. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
44. The farm uses insecticide like DDT	<input type="checkbox"/>				
45. The farm uses fertilizer like urea	<input type="checkbox"/>				
46. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
47. The farm uses insecticide like DDT	<input type="checkbox"/>				
48. The farm uses fertilizer like urea	<input type="checkbox"/>				
49. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
50. The farm uses insecticide like DDT	<input type="checkbox"/>				
51. The farm uses fertilizer like urea	<input type="checkbox"/>				
52. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
53. The farm uses insecticide like DDT	<input type="checkbox"/>				
54. The farm uses fertilizer like urea	<input type="checkbox"/>				
55. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
56. The farm uses insecticide like DDT	<input type="checkbox"/>				
57. The farm uses fertilizer like urea	<input type="checkbox"/>				
58. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
59. The farm uses insecticide like DDT	<input type="checkbox"/>				
60. The farm uses fertilizer like urea	<input type="checkbox"/>				
61. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
62. The farm uses insecticide like DDT	<input type="checkbox"/>				
63. The farm uses fertilizer like urea	<input type="checkbox"/>				
64. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
65. The farm uses insecticide like DDT	<input type="checkbox"/>				
66. The farm uses fertilizer like urea	<input type="checkbox"/>				
67. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
68. The farm uses insecticide like DDT	<input type="checkbox"/>				
69. The farm uses fertilizer like urea	<input type="checkbox"/>				
70. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
71. The farm uses insecticide like DDT	<input type="checkbox"/>				
72. The farm uses fertilizer like urea	<input type="checkbox"/>				
73. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
74. The farm uses insecticide like DDT	<input type="checkbox"/>				
75. The farm uses fertilizer like urea	<input type="checkbox"/>				
76. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
77. The farm uses insecticide like DDT	<input type="checkbox"/>				
78. The farm uses fertilizer like urea	<input type="checkbox"/>				
79. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
80. The farm uses insecticide like DDT	<input type="checkbox"/>				
81. The farm uses fertilizer like urea	<input type="checkbox"/>				
82. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
83. The farm uses insecticide like DDT	<input type="checkbox"/>				
84. The farm uses fertilizer like urea	<input type="checkbox"/>				
85. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
86. The farm uses insecticide like DDT	<input type="checkbox"/>				
87. The farm uses fertilizer like urea	<input type="checkbox"/>				
88. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
89. The farm uses insecticide like DDT	<input type="checkbox"/>				
90. The farm uses fertilizer like urea	<input type="checkbox"/>				
91. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
92. The farm uses insecticide like DDT	<input type="checkbox"/>				
93. The farm uses fertilizer like urea	<input type="checkbox"/>				
94. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
95. The farm uses insecticide like DDT	<input type="checkbox"/>				
96. The farm uses fertilizer like urea	<input type="checkbox"/>				
97. The farm uses herbicide like glyphosate	<input type="checkbox"/>				
98. The farm uses insecticide like DDT	<input type="checkbox"/>				
99. The farm uses fertilizer like urea	<input type="checkbox"/>				
100. The farm uses herbicide like glyphosate	<input type="checkbox"/>				

Figure E.2: Image of booklet survey

Sample cover pages can be seen in Figure E.3.

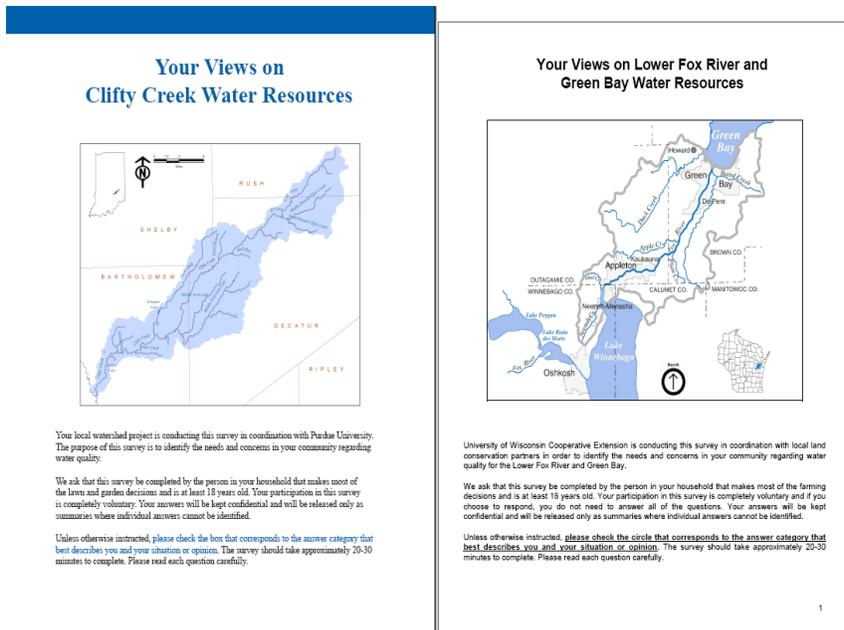


Figure E.3: Images of covers for questionnaires

## Modifying and Printing Your Questionnaire for a Phone Survey

At this point, if you are planning to conduct a phone survey, you will need to produce paper questionnaires that phone interviewers will complete by hand based on responses of the person they have called. Questions read to respondents over the phone will follow a slightly different script than those sent in the mail. Also, phone surveys do not need the same type of formatting or a cover with a map image.

## Writing the Script for Your Questionnaire

### Phone Introduction

Hello, my name is \_\_\_\_\_ and I am calling on behalf of the <insert name> watershed group. A while ago we sent you a letter briefly explaining our project. I am happy to read you the letter if you didn't receive it or don't remember the details. (Re-read letter if they wish)

I am calling you to ask you some questions about your views on water resources in the <insert name> watershed. Your answers will be strictly confidential. If now is not convenient, I am happy to re-schedule at your convenience.

Do you have 20-30 minutes right now?

(If yes, proceed with interview)

(If no): When would be a convenient time to call back?

(If they refuse to participate): Thank you for your time, and have a nice (evening, afternoon).

## **Your Watershed**

(Rating of Water Quality):

First, how would you rate the water quality in your area for the following issues. Please respond with Good, OK, Poor, or You Don't Know.

(Your Water Use)

I am going to list several activities. Please tell me which is the most important to you (read activities). Do you know where the rain water goes when it runs off of your property. (If they answer, yes, where does it go?).

## **Your Opinions**

I am going to read several statements. Please tell me your level of agreement with each by responding: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, or Strongly Disagree. (Read items and record answers. Repeat response categories if necessary.)

## **Water Impairments**

I am going to read a list of water pollutants that are present in water bodies to some extent. The pollutants become a problem when present in excessive amounts. In your opinion, how much of a threat to water quality are the following pollutants in your area, from: Not a Problem, Slight Problem, Moderate Problem, Severe Problem, or you Don't Know.

## **Sources of Water Pollutants**

I am going to read a list of sources of water quality pollution across the country. Please tell me how much each pollution source is a problem in your area. Please respond: Not a Problem, Slight Problem, Moderate Problem, Severe Problem, or you Don't Know.

## **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? Please tell me whether it is: Not a Problem, a Slight Problem, a Moderate Problem, a Severe Problem, or you Don't Know.

## **Practices to Improve Water Quality**

Now we will discuss (HOUSEHOLD or FARM) practices that have the potential to improve water quality.

(Interviewer: Preface each practice with, "Have you heard of (practice)"?)

If yes: Do you currently use this practice?

If No: would you say you are somewhat familiar with this practice or you know how to use it but are not using it?

### **Making Decisions for My Property**

I will read a list of issues believed to limit people's ability to change their household and lawn care [or agricultural] practices. Please tell me whether each issue is not at all limiting for you, a little limiting, somewhat limiting or a lot limiting. If you don't know you can say "don't know".

### **Constraints for Specific Practices**

Read the name of the first practice and the definition. Do you have or have you ever had this practice? How familiar are you with this practice? Are you willing to try to use this practice? How much do the following factors limit your ability to build this practice (or limited, if you already have one)? Answer options are not at all, a little, some, a lot or don't know.

### **About You (For Non-farm surveys)**

Now, I am going to ask you a series of questions about your household. Please remember that all responses are confidential.

(Interviewer: Read each question followed by response options.)

### **About Your Farm Operation (For producer surveys)**

Now, I am going to ask you a series of questions about your farm operation. Please remember that all responses are confidential.

(Interviewer: Read each question followed by response options.)

### **About You/Farm**

Now, I am going to ask you a few questions about you. Please remember that all responses are confidential.

(Interviewer: Read each question followed by response options.)

### **Septic Systems**

Do you have a septic system?

If yes: Continue through the septic questions by reading the question. If no, skip septic questions.

### **Information Sources**

People get information about water quality issues from a variety of sources. I am going to read a list of several organizations. For each organization, please tell me how important they are to you as a source of information: not at all important, somewhat important, you are undecided, important, or very important.

### **Comments Page**

Thank you so much for your time. Would you like me to record any comments you have about this survey or the issues in the survey? Interviewer: legibly handwrite comments; if they do not have comments, finish with: Again, thank you. If you have any questions about this project, you can contact (Name) at (phone number).

### **Printing your Phone Questionnaire**

Once you have finalized the language for introducing each question, print off copies for the interviewers conducting the phone survey on a regular office printer.

### **Modifications for E-mail Surveys and Hybrid Approaches**

If you would like to send people a link to an online version of your survey please talk to Cindy Salazar.

## Section F: Administering the Social Indicators Questionnaire



By this point of the Handbook, you should have chosen the type of survey you will conduct, and you should have created your survey. In this section, we provide detailed instructions for administering or conducting your questionnaire. We start out with general information that pertains to all types of survey methods and then focus in on specifics related to different survey methods. You only need to read the instructions for the type of survey you have chosen to conduct. Finally, the regional website contains many detailed examples to support your efforts. After you have developed all the components for your selected data collection method, you may need to file a Quality Assurance Project Plan (QAPP) with your state NPS program. To find out if you need to file a QAPP, please consult your state NPS program.

### Privacy Issues

Regardless of the type of survey that you conduct, you need to consider how you will protect the privacy of your survey respondents. **It is essential that the collected data are never associated with any individual respondent.**

Once you have created your sample list, you should assign an identification number to each participant. Each questionnaire should include an identification number on the front or back cover. If you are doing a mail survey, be sure to match the questionnaire's identification number to the identification number of the participant on the mailing label. To track who has responded to the survey and to record survey responses, you will use the identification number and not the individual's name. This ensures confidentiality for your respondent and limits bias as respondents are more comfortable providing truthful answers. As questionnaires are returned, you will record that they have been received so you will not mail those respondents a second and/or third questionnaire.

You will want to keep the spreadsheet with names and identification numbers for the duration of your project as you will need to use it again to conduct your post-project survey. This spreadsheet should be kept in a secure location – preferably only accessible to people with a password. You should never try to link the data back to the individual. Similarly, you should never report who has and has not responded to the survey – even this is a violation of someone's privacy.

If you are using a form of data collection that involves staff talking to respondents, such as phone surveys or in-person surveys, it is essential that the staff be trained to not disclose anything they learned during the interview to anyone other than the interviewee.

### **What if people aren't responding to your survey?**

Low response rates raise concerns about how much your results reflect the actual situation in your project area. By the end of your process, your response rate should be higher than 40 percent.

Monitoring your response rates throughout the survey delivery process allows you make adjustments if necessary. Following the process described in this section, you should expect to see a 20-percent or higher response after your first reminder. If you don't you should review your process:

- Is the cover letter clear?
- Was your cover letter printed on recognizable local letterhead and signed by someone from the area?
- Did you use real stamps on the survey packet and on the return envelope?
- Is the return address local?
- Is the questionnaire too cluttered?

### **Don't wait until the process is completed—make adjustments along the way to increase your response rate.**

If you followed all the correct procedures and you still have a low response rate, it will be important to compare those who responded and those that did not. Showing that a small group of respondents closely resembles the large group of non-respondents increases confidence that the responses reflect the larger group. In agricultural settings, you may have access to measures of farm and/or herd size. In other settings, you might look at Census information such education levels, length of time at current address, or other characteristics that describe your group. You can compare your respondents to the larger population using these measures.

Whatever your final response rate, make sure to disclose the response rate and any additional measures that compare respondents and non-respondents.

## **Determining Contact Information for Target Audience**

After you select your method of survey delivery, you must next identify every member of your target audience. This is often the most difficult part of conducting a survey. It is one thing to say that your target audience is everyone living in a certain geographical or political boundary, but it is much more difficult to personally identify each of these people. For the purposes of conducting a survey, it is recommended that you think in terms of households instead of individuals. In most cases, you will want one adult living in the household to respond. So, in essence, you are searching for addresses, phone numbers, or e-mail addresses within your target area. We provide information for each type of survey method about how to determine contact information.

## Calculating Response Rates

To calculate the response rate for mail and e-mail surveys, use the following formula:

$$\frac{\text{number returned completed}}{(\text{number delivered}) - (\text{number returned as undeliverable})}$$

The response rate should be reported on all documents that summarize survey results.

For other types of surveys, the response rate calculation is similar. For phone and in-person surveys, the response rate is based on the number of people willing to complete the survey divided by the number of people reached by phone or in-person. For group surveys, the response rate is based on the number of people who attended the meeting and completed the survey divided by the total number of people invited.

## Data Entry for Project Surveys

As soon as the questionnaires are returned, the responses should be entered. These data will be transferred into SIDMA for you after SIDMA has been finalized.

## Data Cleaning

The familiar adage “garbage in, garbage out” is an appropriate one when dealing with survey data. It is important that the numbers that are entered into either SIDMA or a different analysis package are correct. After you receive your data from Cindy Salazar you should randomly select 5% of your surveys and check if they have been entered correctly. Cindy can send you a copy of your survey with the codes written in to facilitate this process. As you do this, you should look for systematic issues related to a particular question or a particular person doing data entry. If there are systematic issues you should fix throughout the entire dataset. If you have questions about this process, you should contact Cindy.

You should keep the paper copies of the survey until your project is complete.

## Mail Surveys

### Acquiring Addresses

Techniques for gathering addresses for a mail survey differ according to your target audience. The general division is between urban and rural audiences. However, within the rural audience, there might be both agricultural producers and rural non-agricultural residents.

In **urban areas**, there are several options for gathering addresses. If you have a well-defined target audience it can be beneficial to work with local agencies, utilities, or businesses that can supply addresses. If the county you are working within has a public GIS function on their website, addresses can be obtained through this method. By referring to the map, you can create a watershed-specific list of addresses. You may need to type the addresses into a separate file,

which can be time-consuming. Generally, these records will be for home owners; if the owner has rented the property to someone else, then the respondent name won't match the address.

If you are unable to work with local entities to gather addresses, it is possible to purchase a mailing list from a survey sampling company. You can use an Internet search engine to find such a company. The advantage of this method is that it is very easy, though it may be somewhat expensive. The major disadvantage to consider is that survey sampling companies cannot provide addresses based on watershed boundaries. Purchasing addresses can be a useful tool when you have a well-defined target area in the watershed. Most survey sampling companies use a variety of sources (such as phone listings, utility bills) for their addresses to provide the most complete list possible.

If you are working with a **rural agricultural population**, often the best method for gathering addresses is through the local Soil and Water Conservation District, the Natural Resources Conservation Service (NRCS), and/or the Farm Service Agency (FSA). These agencies often send mailed communication to area producers, and therefore may already have a mail list. A disadvantage with this method is that often times, the agricultural producers on these lists are limited to those that have received cost-share assistance (or provided their contact information for other purposes) through the particular agency in the past.

If your local FSA branch is unable to give you the addresses due to the increasing stringency of federal laws, you have the right to submit a FOIA (Freedom of Information Act) request. If you choose to submit a FOIA request, you will need to do so through your state contact for FSA; you can ask your local FSA to provide you with these contacts. The process of gathering addresses through a FOIA request can take several months, so be sure to allow this time for a response. You will want to specify in your request that you want names and addresses in electronic format. It is advisable to let your local FSA know you are doing this and why to ensure you do not compromise your relationship with the local FSA. You will find a sample request letter at the end of this section. The process of filing a FOIA request is different within each agency but is mostly similar for both FSA and NRCS. Please note that state agencies may not need to conform to FOIA requests.

You may also consult with the local county clerk's office. Their offices maintain landowner lists for property tax purposes. If you can find the range of property tax id numbers for your critical area, the county clerk's office should be able to match these numbers to landowners and provide you a mailing list. Please note that not all counties will have this information in digital form. This method works best when your critical area boundaries are closely related to county or township boundaries.

**Rural non-farming residents** may be one of the more difficult audiences for which you might need to develop an address list. Consulting the county GIS website, if one is available, or plat maps are two options. Plat maps are available for every county from the county land registration office or the county clerk. They contain information about who owns each piece of land. If plat maps are not digitized (and sometimes even if they are), it can take considerable time to gather names and addresses associated with parcels in your critical area. First, you would overlay your critical area boundaries with the plat map (making sure that your maps are of a similar scale).

Plat maps typically show only landowner names, so after you have identified the names within your critical area, you would still have to search white page listings – which are now online - for their mailing addresses. Obtaining a mailing list from the county clerk’s office, as described above, is another method to use for a rural non-farming target audience.

### **Details of Conducting a Mail Survey**

One of the drawbacks of mail surveys is the potential for low response rates. High response rates are important for quality social data because they ensure that the responses will reflect more than a small minority of the group. For these types of surveys, your goal should be a 40–60 percent response rate. Response rates that drop below this range are assumed not to accurately characterize the target audience.

The “five-wave design” that we suggest using for mail surveys in the handbook consists of the following five mailings:

1. Pre-notice about the survey; this is a letter sent in advance of the survey informing the respondent about the purpose of the survey. This letter is sent about one week before the survey.
2. A cover letter included with the actual survey. This cover letter contains similar information to the advance letter.
3. A letter or postcard thanking/reminding the respondent is sent about two weeks after the first survey mailing.
4. A second survey with a cover letter is sent to non-respondents about 1-2 weeks after the postcard reminder.
5. A third survey with cover letter or a reminder letter or postcard is sent to non-respondents about 1-2 weeks after the second survey.

(modified from Dillman 2000)

As the above schedule indicates, it takes about two months from the time the advance letter is mailed until the final survey is mailed. As you plan your mailing schedule, you will want to carefully consider major events that will occur during these two months. You want to avoid holidays as much as possible; November and December are generally bad times to do survey mailings as people are often over-extended with activities at this time of year. You also need to be sensitive to your target audience’s busy-times. For example, it is never a good idea to survey row crop agricultural producers during either planting or harvest season.

The regional website contains samples of all the different letters and postcards that are used in the five-wave design. These should be modified to fit the needs of a particular project.

An additional consideration related to the five-wave design is the printing of surveys. Once you determine your sample size, you will need to determine how many questionnaires to print. After your first mailing, it is common to expect that 20 percent of the questionnaires will be returned to you within three weeks. After that, you will begin subsequent mailings of additional copies of the questionnaires to non-respondents. Since half or more of the people on your mailing list will receive a second copy of the questionnaire, you should print roughly twice the number of

questionnaires that the sample size formula tells you that you need. You should print even more than this if you plan to mail the survey three times.

Additional considerations for achieving an acceptable response rate by mail, include:

(1) Respondent-friendly questionnaire.

There are techniques such as color, font style and size, pictures, well-designed questions (which we have provided), and white space that can all help improve response rate. When reviewing a draft questionnaire, be sure that it is of appropriate length (takes less than 20 minutes to complete), is visually appealing, and interesting to the respondent.

(2) Return envelopes with real first-class stamps instead of machine generated postage or bulk-mail stamps.

It has been found that people are more likely to respond to surveys that are personally addressed (instead of “To the Household”) and have first-class stamps. This increases the respondents’ perception that they are not part of a bulk mailing and that the survey is not junk mail. You should always include a pre-addressed postage-paid envelope for the respondent to use when mailing the questionnaire back to you.

(3) Personalization of correspondence

The initial contact letter is extremely important. It should be personalized and avoid the look of a form letter. If possible, it should contain an original ink signature. The wording of the cover letter should describe:

- a) why you are contacting them,
- b) how you obtained their contact information,
- c) an explanation about the project/study,
- d) why the project/study is important,
- e) why it is important for them to respond,
- f) how you will use the data,
- g) your confidentiality policy,
- h) your contact information in case they have questions, and
- i) a thank-you.

That’s a lot of information for a one-page letter. Again, you can find sample letters on the regional website.

(Modified from Dillman 2000)

If after using the “five-wave design”, your mail survey has not produced at least a 40 percent response rate, you will need to randomly call non-respondents to complete the questionnaire over the telephone. Once you have reached enough people to comprise a 40 percent response rate, you may stop calling.

## **Phone Surveys**

### **Acquiring Phone Numbers**

If you choose to do a phone survey with a large target audience, you can follow the steps above for mail surveys to gather names and then use the white pages (which are now available online) to find phone numbers.

### **Details of Conducting a Phone Survey**

The language of the phone survey will need to be slightly different than that used in a mail survey. As respondents will not be reading the questions but will rather be answering a question that is read to them, directions will need to be embedded into the questions. We have included some example script in section 5.

The people conducting the phone survey need to be trained in how to talk to respondents in a way that treats them with respect and does not bias the answers. One of the main considerations with phone surveys is how to reach people who do not answer their telephone. The best approach for reaching a truly representative audience is to call each person at least 3 different times at different times of the day and on different days of the week. If you have addresses in addition to phone numbers, sending an advance letter will help increase the response rate.

Phone surveyors generally continue calling those on a list until the target number of responses is obtained.

## **E-mail Surveys**

### **Acquiring E-mail Addresses**

There are many issues associated with obtaining a list of e-mail addresses that accurately represents your target audience. Households may have several e-mail addresses, and they may change frequently. For the purposes of the SIPES survey, you should only consider conducting a survey via e-mail if you are confident that you have a complete and current list of e-mail addresses for your target audience and that all members of your target audience or sample have access to reliable Internet service.

### **Details of Conducting an E-mail Survey**

If you choose to conduct the SIPES survey by e-mail, you can use the Qualtrics survey provided to you.

- Successful administration of an e-mail survey involves the following principles: (1) Use a multiple contact strategy much like that used for regular mail surveys; you can also consider sending a letter via U.S. mail before sending e-mail notices; and (2)
- Personalize e-mail contacts so that none are part of a mass mailing.

## **In-Person Surveys**

### **Details of Conducting an In-Person Survey**

Conducting an in-person survey requires some of the same considerations as conducting a phone survey. The interviewer needs to be trained and needs to be personable. It is very important that questions are asked the same way every time and in the same order. To actually conduct the survey, you can print out the survey you created and interviewers will write the answers in as they ask the questions. If people are not home on the first visit, it will be necessary to revisit homes. The interviewer(s) needs to be someone the respondents will identify with or feel comfortable with, e.g. Amish agricultural producers are unlikely to agree to be interviewed by a female interviewer. It is advisable to send an advance letter similar to one that could be sent for a mail survey informing the respondent about the purpose of the interviews and when an interviewer is expected to stop by.

### **Surveys in a Group Setting**

#### **Details of Conducting Surveys in a Group Setting**

It is important to collect this information in as consistent a manner as possible. It is fine for participants to introduce themselves to each other at the beginning of the meeting if they don't know each other already. The following protocol for group administration of a questionnaire can be used:

**Introduction:** a nearly identical introduction is provided to all groups consisting of these elements:

- Expression of appreciation
- Brief description of the task
- Provide summary of the steps
  - Read the cover letter
  - Take the questionnaire out of the envelope
  - Complete the questionnaire
  - Immediately put the questionnaire in the envelope and seal it for data entry.

**Special instructions:** These special instructions are typically offered:

- This is not a test with right or wrong answers. Please think of it as being a questionnaire sent to your apartment or home and fill it out just like you would if we sent it there.
- As soon as you have answered the last question, please be sure that you put the questionnaire immediately into the envelope, seal it, and wait for additional instructions.

**Distribution:** Each respondent is given a packet consisting of the questionnaire inside an unsealed envelope, which will double as a return envelope, and a cover letter clipped to the front of the envelope. They are told they can start when they receive it.

**Retrieval:** Questionnaires are passed in when everyone is done or picked up from where each respondent is sitting.

**Debriefing:** More information about the questionnaire and its purpose may be provided. Appreciation is expressed once again to respondents.

(From Dillman 2000)



## Section G: Using Survey Results to Develop Education and Outreach Strategies

At this point you have gone through the process of identifying your target audiences and the management practices they might implement. You have also completed your pre-project social indicators survey. At this point, you will receive a report of your data and review your results. This section outlines a process for understanding and using your results to develop your education and outreach strategy. Results will allow you to:

- Familiarize yourself with the frequencies and averages presented in “questionnaire” form.
- Use your analysis to refine your target audiences, finalize the management practices you will promote, and develop social outcomes. These are the last steps in identifying a combination of environmental and social conditions that will allow you to most effectively accomplish (or make progress toward) your environmental goals and social outcomes.
- Develop your outreach and implementation strategies based on your environmental goals and social outcomes.
- Identify the characteristics of your population that will either facilitate or impede practice adoption. Find out how much the population knows about the practices you hope to get installed, as well as identify the barriers to practice adoption.
- 

If you have the capacity, you can also examine the following relationships:

- The number of people that have adopted or may be willing to adopt practices that would reduce priority pollutant loads as well as their awareness of those practices.
- The relationships between willingness to adopt practices and *constraints* to practice adoption.
- The relationships between willingness to adopt practices and *awareness* of practices.
- The demographic characteristics associated with willingness to adopt practices, constraints to practice adoption, and awareness of practices.

### Frequencies and Averages Presented In Questionnaire Form

The report presents the frequency of results and the averages for each survey question. Average values for each question provide a quick and easy way to understand how respondents answered each question. For example in Table G.1 for the question about discharges from industry, the average score is 2.92 which tells us that, on average, respondents think this is a slight to moderate problem. The report allows you to get an idea of the overall strengths and weaknesses of your watershed. Are people familiar with the practices you are hoping to have installed? Does the population as a whole understand the sources and consequences of the pollutants of concern? These are the sorts of questions answered by frequency and average data.

**Table G.1: Example of initial frequency and averages for survey question:**  
*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 (NA)	Mean (N;SD)
a. Discharges from industry	166	6.0	18.1	39.2	23.5	13.3	2.92 (144; .870)
b. Discharges from sewage treatment plants.	165	12.0	21.1	34.3	14.5	17.5	2.63 (136; .942)
c. Soil erosion from construction sites.	165	14.5	52.4	18.7	2.4	11.4	2.10 (146; .692)
d. Soil erosion from farm fields.	166	18.1	55.4	18.7	1.2	6.6	2.03 (155; .669)
e. Soil erosion from shorelines and/or stream banks.	166	16.9	46.4	17.5	5.4	13.9	2.13 (143; .798)
f. Excessive use of lawn fertilizers and pesticides.	166	3.6	21.1	32.5	33.1	9.6	3.05 (150; .873)
g. Improper disposal of used motor oil and anti-freeze.	166	19.3	28.9	16.3	10.2	25.3	2.23 (124; .989)
h. Improperly maintained septic systems	166	20.5	28.0	18.7	4.2	18.7	2.08 (135; .829)
i. Storm water runoff from urban areas	165	11.4	36.1	26.5	12.7	12.7	2.47 (144; .900)
j. Droppings from geese, ducks, and other waterfowl.	166	18.1	32.5	21.1	14.5	13.9	2.37 (143; .998)
k. Littering/Illegal dumping of trash	164	10.8	40.4	24.1	12.0	11.4	2.43 (145; .880)
l. Runoff of pesticides from farm fields	166	24.1	52.4	12.0	0.6	10.2	1.88 (148; .648)
m. Land applied wastes (industrial, municipal, septic wastes)	166	21.7	39.2	16.3	4.8	18.1	2.05 (136; 2.05)
n. Land application of animal waste	166	27.1	50.6	15.1	1.2	6.0	1.90 (156; .702)
o. Runoff from animal feedlots	166	23.5	55.4	10.8	1.8	8.4	1.90 (152; .669)
p. Milk house waste	166	38.6	44.0	6.6	0.0	10.8	1.64 (148; .617)
q. Silage runoff from bunker silos	166	32.5	40.4	10.2	4.8	12.0	1.86 (146; .830)

## Relationships Among Responses

While the averages can help you identify characteristics that can facilitate or impede practice adoption for your watershed, it may miss important trends that can help you focus your efforts.

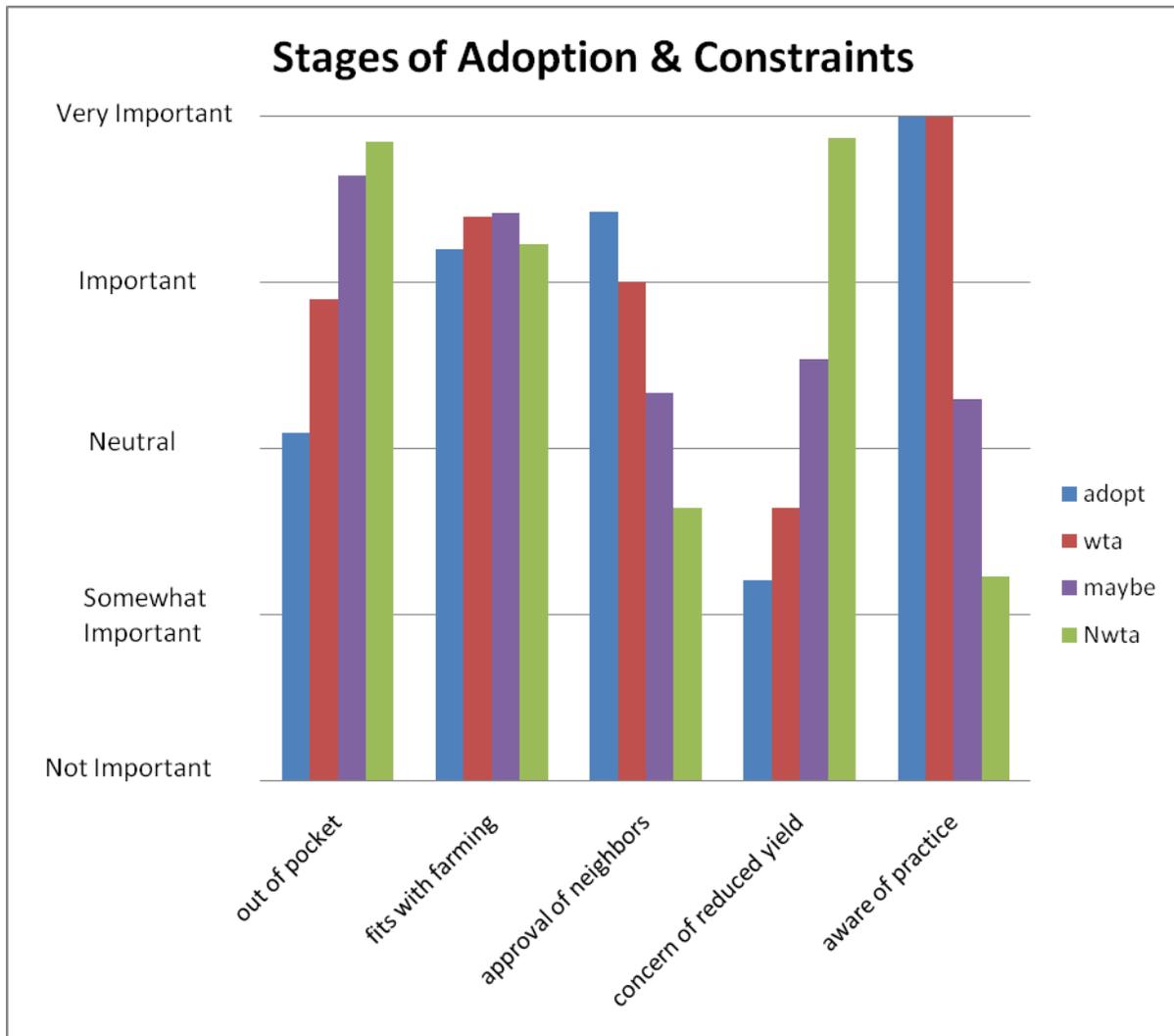
If you have the capacity, you can think about examining the results for those who have already adopted a given practice. This analysis helps you identify the key traits of respondents who overcame barriers to practice adoption. You can also compare those who have adopted a practice to those who are willing to adopt (wta) a practice, those who will consider adoption (maybe) and respondents not willing to adopt a practice (Nwta).

Since this part compares different stages of adoption (adopted, wta, maybe, & Nwta) it answers different questions. Is there an identifiable group that is more likely to adopt a given practice (such as farmers with more acreage)? Do those who have already adopted a riparian buffer believe financial assistance is more or less important than those who have not adopted one

already? By comparing these different groups we get a picture of which factors are most likely to lead to adoption. The results could be presented in both table form (Table G.2 below) as well as a graph (Figure G.1 below). Both the table and graph present the averages for each variable.

**Table G.2: Constraints for riparian buffers**

Variable		Average
Out of pocket	<b>Overall</b>	3.125
	adopt	2.1
	wta	2.9
	maybe	3.65
	Nwta	3.85
Fits with farming	<b>Overall</b>	3.3125
	adopt	3.2
	wta	3.4
	maybe	3.42
	Nwta	3.23
Approval of neighbors	<b>Overall</b>	2.6075
	adopt	3.43
	wta	3.01
	maybe	2.34
	Nwta	1.65
Concern of reduced yield	<b>Overall</b>	2.3175
	adopt	1.21
	wta	1.65
	maybe	2.54
	Nwta	3.87
Aware of practice	<b>Overall</b>	2.8825
	adopt	4
	wta	4
	maybe	2.3
	Nwta	1.23



**Figure G.1: Relative importance of constraints for riparian buffers**

You could also use the Pearson’s Chi-square test to look at the relationship between two different variables. Briefly, this test examines if one variable exerts an influence on another variable. For example, are larger farms more or less concerned about practice cost than smaller farms? Are longer-term residents more or less knowledgeable about a practice of interest? Pearson’s chi-square test can help us answer these types of questions. If you want to know more about this test any good introductory level statistics book can provide information about it.

If there is a specific relationship you wish to see, you can work with the data to see additional tables and figures. Figure G.2 is an example of how familiarity of riparian buffers can vary based on years at residence.

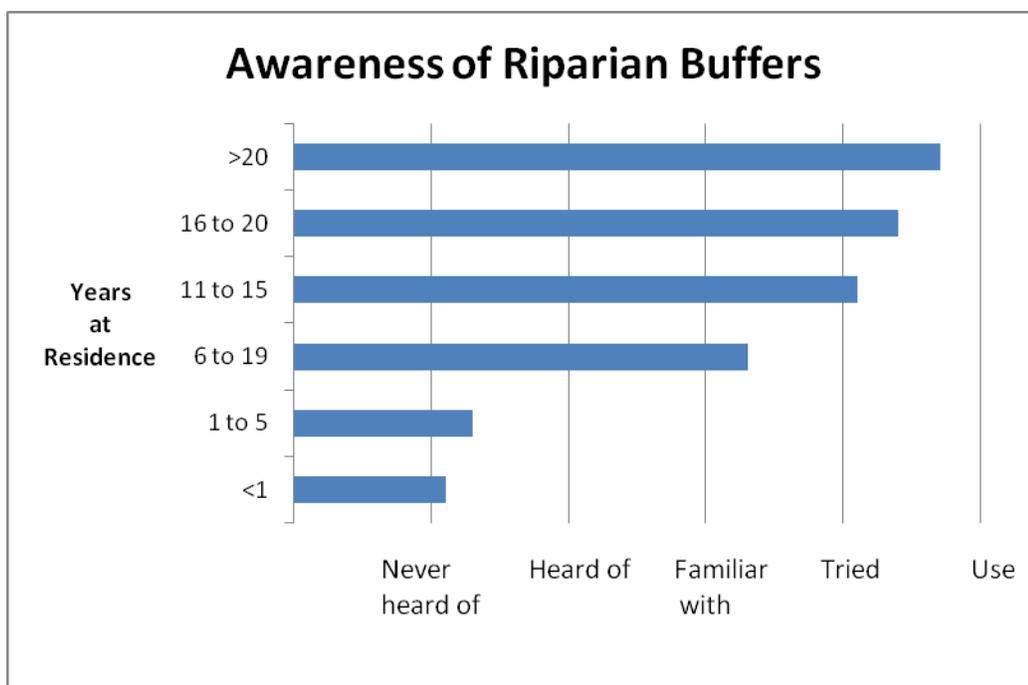


Figure G.2: Years of residency vs. familiarity with riparian buffers

### Focusing Your Outreach Strategy

Section B defined a **target audience** as a group of individuals whose awareness, attitudes, capacity, constraints, and behavior change are required to achieve your project’s environmental goals and desired outcomes. Focusing on subgroups within your target audience can lead to outreach strategies that meet specific needs.

For example, Snow White River watershed has seven neighborhoods with associations that manage lakeshore property. Phosphorus runoff is the primary pollutant of concern, and you’ve designated the entire lakeshore as a critical area because your environmental data is not detailed enough to distinguish differences among neighborhoods. Therefore, you have selected all of the households in all seven neighborhoods around the lake as your target audience and collected SIPES pre-project survey data from them. The results of your survey indicate longer-term residents have much more interest in installing native plant (riparian) buffers than the other residents (Figure G.3). These residents, a subset of your target audience, might become the focus of one component of your outreach strategy.

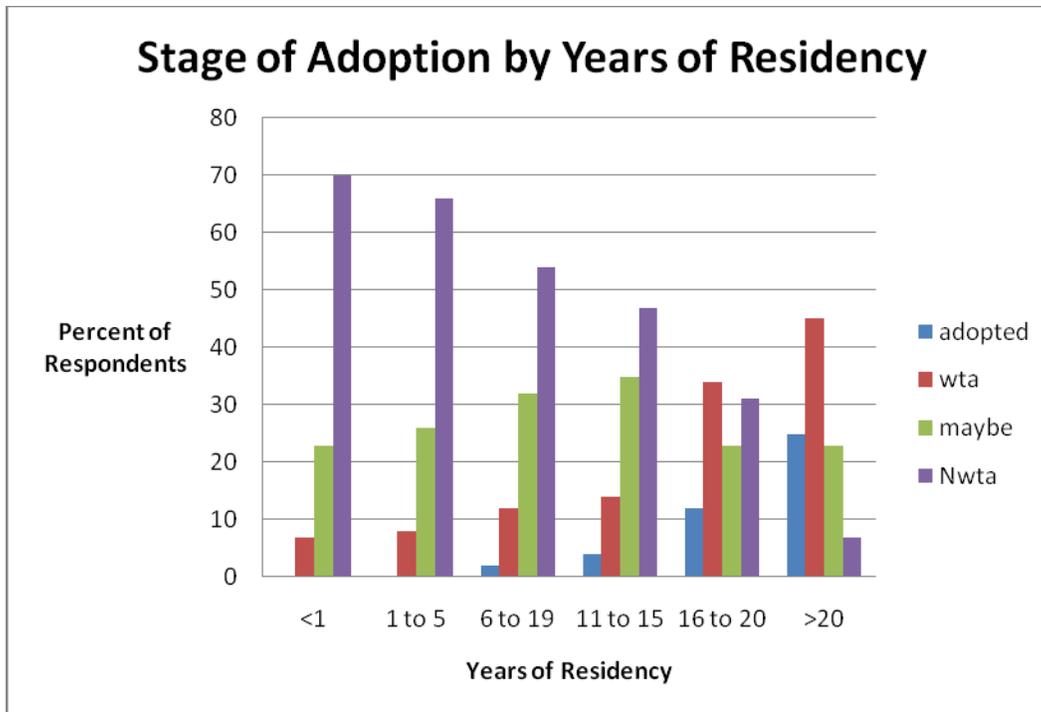


Figure G.3: Time of Residency vs. Stage of Adoption

## Using Pre-Project Survey Results to Establish Social Outcomes

You will use your pre-project survey results to establish social outcomes. **Social outcomes** are broadly defined as *the social changes needed to bring about and sustain the environmental conditions you are trying to achieve in your project area*. These outcomes will address the changes in awareness, attitudes, capacity, constraints, and behaviors that will help achieve your project’s environmental goals and management objectives.

These social changes are outcomes that project activities are expected to achieve. Social outcomes that provide the foundation for the social indicators in this Handbook are listed in the Handbook Introduction. Social outcomes include:

- Increase awareness of relevant technical issues and/or recommended practices in critical areas;
- Change attitudes to facilitate desired behavior change in critical areas;
- Reduce constraints to behavior change;
- Increase capacity to leverage resources in critical areas;
- Increase capacity to support appropriate practices in critical areas; and
- Increase adoption of practices to maintain or improve water quality in critical areas.

To develop social outcomes for your project, first determine the types of social changes your project would like to achieve. Based on your project goals, do you expect that you will need to increase awareness of the type of pollutants impacting your watershed, the impacts of those

pollutants or both? Are your target audiences ready to adopt practices? Are you trying to change a behavior? You can tailor the outcomes above to fit the specifics of your project and develop others as needed. While there is no hard and fast formula for developing social outcomes for your project, they will typically address who, what, where, and when components of what you are trying to achieve. The “who” will often correspond to your target audience. The “what” will often be the necessary management practices or knowledge gaps you’ve identified through your pre-project survey. A social outcome for the Snow White River example could be: 75% of Snow White River riparian property owners use phosphorus-free lawn fertilizer (up from 25% baseline).

## Designing Your Outreach Strategies

Now that you’ve analyzed your SIPES pre-project survey data and developed social outcomes, the next step is to design your outreach strategies. The National Extension Water Outreach and Education website houses extensive information on outreach approaches organized by project goal and target audience. A Best Education Practices (BEP) decision tree (<http://wateroutreach.uwex.edu/use/DecisionTreestart.cfm>) can help you think through your approach. Getting Your Feet Wet With Social Marketing (<http://ag.utah.gov/conservation/GettingYourFeetWet1.pdf>), USEPA’s Getting In Step (<http://www.epa.gov/nps/toolbox/print/getnstepguide.pdf>) and NPS Outreach Toolbox (<http://www.epa.gov/nps/toolbox/>) also offer valuable guidance on using marketing approaches to achieving behavior change.

A good first step is to determine which types of outreach strategies are best suited to accomplishing your social outcomes. Table G.3 compares the SIPES social outcome categories to the types of outreach activities that are most appropriate for addressing them. Note that this is not an exhaustive list. Your options are only limited by your own creativity. However, it should orient you to *a way of thinking* about selecting activities that will have the best chance of success.

**Table G.3: The relationship between social outcomes and types of outreach activities**

	Workshop	Field Day	Informational Meetings	Websites	Brochures Fact Sheets	Newsletters	Informational Signage	Media	Incentives
<b>Outcome: Increase Awareness</b>	✓	✓	✓	✓	✓	✓	✓	✓	
<b>Outcome: Increase Technical Knowledge</b>	✓	✓	✓						
<b>Outcome: Increase Skills</b>	✓	✓							
<b>Outcome: Reduce constraints</b>	✓	✓							✓
<b>Outcome: Change Attitudes</b>	✓	✓	✓					✓	✓

Table G.4 below provides an example of how a variety of activities might be applied toward the social outcome, “Residents of Oak Creek watershed will increase rain barrel use by 30%.”

**Table G.4: Application of selected types of outreach activities to a rain barrel adoption project**

Activity	Example application
Workshop	Provide information regarding how to install rain barrel
Field Day	Show a rain barrel in place
Informational Meetings	Announce that organization is installing rain barrels in this area or ask how should we deal with urban runoff?
Newsletters	Communicate what a rain barrel is, how one is used, or announce new rain barrel installation.
Brochures and Fact Sheets	Provide information regarding how to install rain barrel – essentially an overview of a workshop experience
Websites	Provide details regarding rain barrel installation to a group of organization members
Informational Signage	Identifying a rain barrel and project in a particularly or highly trafficked area with signage.
Mass Media	Announce a rain barrel workshop or place an article in the paper regarding the value of rain barrel.
Incentives	Provide some resource in exchange for rain barrel installation. The resource could be a price break on the barrel, free tickets to a local community event, etc.

## Appropriate Uses and Expectations for Different Outreach Activities

### 1. Workshops, field days, and informational meetings

Workshops, field days, and informational meetings are all opportunities to interact with groups of stakeholders, members of your target audience and your community. Your communication or educational objective will help you to determine which will be appropriate to use and when. For NPS projects, these activities are typically used in the following ways:

- Workshops are useful for presenting information and teaching skills that can help people improve water quality. They provide opportunities to interact on a personal level and can vary in length and duration – as single events, components of multiple-day conferences, or parts of long-term training programs. Workshops can potentially raise awareness, increase skills, and support an ultimate change in behavior.
- Field days typically involve demonstrations of specific practices at an accessible location, and they may last all or part of a day. Generally, they are used to demonstrate or create awareness of a new technology, address questions and concerns about management practices, and build relationships with the target audience.
- Informational meetings are generally intended to provide details about a local water quality project and to receive input and feedback from participants. They may include presentations, public discussion, open-house viewing of posters and displays, individual questions and answers, or a combination of those. They may be expected to raise awareness of relevant issues or identify potential barriers or concerns related to management options.

## **2. Newsletters**

Newsletters provide a means for basic communication with stakeholders. They are most useful for sharing general information about a project and related issues, announcing events, making people aware of resources, and reinforcing messages provided through other communication activities. Detailed or technical information, however, is best communicated in a different medium.

Newsletters on their own would not be expected to bring about adoption of new practices. They can, however, provide information that could assist someone with an interest. For example, a project that has the objective of increasing inspection and maintenance of on-site septic tanks could use a newsletter to provide a few key pieces of information. This might include watching for potential problems, planting grass cover, and keeping trees from growing over the tank, as well as provide contact information for local septic services.

Before using a newsletter, ask yourself the following questions:

- Are the objectives you have reasonable? For example, if you are trying to change behavior with unmotivated audiences, you will most likely not reach that goal. Your objectives should be modified and either a different outreach and education tool should be used or the content should be modified to reflect realistic objectives.
- Will the appropriate target audience receive the newsletter? If your objective is to inform a new audience of your project, make sure you are distributing the newsletters beyond your existing network
- Will the newsletter be a part of a larger education program to change water quality behaviors?

## **3. Brochures and Fact Sheets**

Outreach materials such as brochures or fact-sheets are often used to provide an accessible source of information about issues (or practices). These materials can be used to increase awareness and to provide information that may encourage behavior change. As part of a larger strategy, brochures, fact sheets, and other printed outreach materials can help the target audience understand an issue of interest (e.g., degraded water quality), which actions will help to alleviate the problem, and how to conduct those actions.

As with newsletters, you can self-assess basic issues regarding whether the materials are meeting their intended purpose. What are you expecting the materials to do? Simply providing people with information is not likely to change behaviors, though it may create awareness. Will your materials be distributed and placed correctly to reach your target audience? You may have created an appealing brochure that contains exactly the right information, but if it doesn't reach the right audience it will not have the expected impact.

## 4. Websites

As a form of media that the user must actively seek out, websites are generally for engaged audiences. A website is not an effective outreach tool for an audience that would not seek this information on their own. Websites are, however, good at providing general to detailed information to an audience that is actively seeking or involved with the information provided on the site. For example, if an organization hosts a workshop on a specific practice and people attend based on their interest in that practice, those participants are an engaged audience that might actively seek additional information on the website.

There are some exceptions to the need for an already engaged audience. For example, an organization that already has a website used by an engaged general audience for some other purpose unrelated to water quality, such as a zoo or school, may use their website and educate their users about watershed issues. Also, there are a few examples of websites that are used to attract the attention of unengaged persons through the media. Generally, such sites tend to be technologically interesting and interactive, not information repositories.

When is the investment greater than the gain? This should be a key question in website planning. Other considerations regarding expectations and whether a website would be useful include:

- target audience access to the Internet;
- speed of access in the audience/target region;
- type/amount of information to be conveyed;
- your organization can afford to maintain and update its site;
- level of audience engagement with the Internet; and
- complexity and consistency of information that needs to be communicated to your audience

While the Internet is increasingly an important source of information for many, developing a website should not be considered a foregone conclusion. Many organizations do not have staff with website development skills internally and must contract out for the work, leading to considerable costs. Further, even if the funds or a volunteer for website development are available, there are still ongoing costs. Annual fees for hosting a website, registering a website with search engines, and the cost of updating and maintaining a site are often overlooked by organizations in the eagerness to develop a web presence.

## 5. Informational Signage

Informational signage is used to convey a simple message to your target audience. You might use signs to raise awareness about a place (a road sign), highlight a management practice (e.g., a stream restoration), or provide basic information about an issue (e.g., an educational sign about watersheds at a park or zoo).

Signs can be used for simple educational messages and/or to encourage a particular behavior, and are more interpretive in nature. If you have a demonstration site, such as a restored wetland, you may want to install signs that detail the benefits of wetlands for habitat and for humans. You can expect signs to increase awareness of an issue and to encourage easy behaviors.

## **6. Mass Media**

Does your message need to reach the general public or a very large target group? Mass media options such as newspaper, television, and radio are important tools for raising awareness of your issue. For communication, they have some specific strengths and weaknesses. An important strength, however, is that mass media can target an unengaged or passive audience.

In determining an appropriate mass media strategy, it is important to know how people obtain their information. For environmental news, people tend to get their information from mass media sources. Generally, television is by far the most common source – comprising almost half of the environmental news. Just over a quarter of the environmental news people consume comes from local newspapers, and radio comprises just under twenty percent. This is typical and may vary regionally.

The strength of mass media is in its ability to reach an audience that may or may not be interested in your issues. It also can provide a public forum for debate on controversial issues, such as the removal of a dam. If your organization has a small target audience or has primarily detailed technical information to convey, mass media may not be the right choice.

While an audience can increase their knowledge of an issue through the media, expectations regarding the audience's retention of the message should correspond to the frequency of that message. Mass media strategies usually work best for increasing public awareness or for special announcements.

## **7. Incentives**

Incentives are most often used to reduce constraints and to change behavior in relatively short periods of time. They are used to level the perceived costs and benefits of adopting a practice or changing a behavior. In terms of social outcomes, they are used to reduce or overcome constraints and change attitudes. Do not assume that your target audience automatically needs an incentive to change their behavior. Perhaps they are unaware of the economic benefits of a practice or need more skills to feel comfortable engaging in a practice.

Incentives are most effective when coupled with other forms of outreach. For example, brochures or fact sheets are effective tools for increasing awareness about an incentive. Use your SIPES pre-project data on practices and constraints to determine which constraints might be overcome with incentives. You can explore attitude data on your own, but SIDMA does automatically analyze attitude responses at this time.

Section H will describe how to evaluate the effectiveness of these activities as they are implemented during the course of your project.



## Section H: Evaluating Outreach Activities During Project Implementation

This section describes methods for evaluating outreach and education activities used during the implementation of your project. The purpose of evaluating your activities *during* project implementation is to understand whether or not they are helping you reach the goals and intended social outcomes established in Step 3 (Section G). Evaluation results can help you consider how to adapt your activities during your project.

The purpose of this section is to help you:

- Evaluate how your activities are helping reach your social outcomes
- Consider how to adapt your activities during your project

The first part describes what to evaluate and provides an overview of relevant evaluation tools. The second part describes how to apply the tools to evaluating the activities listed in Tables G.3 and H.1. The third part discusses what to do if your evaluations suggest you need to adapt your approach. The final part describes options for documenting and reporting your mid-project evaluation results.

### What to Evaluate and Which Tools to Use

Your outreach and education plan outlines the mix of activities your project will use to accomplish your goals. There are three important elements to consider when evaluating those activities:

1. whether or not the activity reached the intended audience;
2. the activity's impact on awareness, attitudes, constraints, and/or capacity; and
3. the activity's impact on behavior.

You can use a relatively small set of evaluation tools to help answer those questions, often asking about several activities at the same time. Table H.1 summarizes the application of these tools to activities commonly used in NPS projects in USEPA Region 5. Tools that provide direct feedback about an activity are shaded; tools that can be used indirectly, to include questions about related project activities are not shaded.

### Questionnaires

Three types of questionnaires are most useful for evaluating your project activities.

- *End-of-session questionnaires* are administered as part of an event, such as a workshop, field day, or informational meeting. End-of-session questionnaires are generally brief and can include questions about the event, the person attending the event, and their use and awareness of other related project activities and materials.
- *Follow-up questionnaires* are used to contact event participants after some specified period of time (3 months, 6 months, etc.) to ask them about the event and what they are doing differently. These questionnaires can also include additional questions about related project activities and materials.

- *SIPES post-project questionnaires* are used with your target audiences at the end of your NPS project. Your SIPES post-project questionnaire can include questions about use and awareness of your project activities and materials.

### Group Discussion/Focus Group

Small groups of your target audience and project stakeholders can provide very helpful feedback on the design and implementation of your project activities. Feedback of this nature can come through formal “focus group” processes related to specific conservation practices or incentive options, or through informal discussions among participants at a project event.

### Specialty Approaches

Some of your activities can be evaluated with special tools and approaches. For example, you can use free specialized software programs to track and analyze usage statistics related to a project website or you can use tear-off surveys to evaluate newsletters.

**Table H.1 Tools for evaluating impacts**

	Workshop	Field Days	Info Meetings	Websites	Brochures Fact Sheets	Newsletters	Informational Signage	Media	Incentives
<b>Specialty approaches</b>				Usage statistics		Tear-off surveys; utility bill inserts			
<b>End-of-session questionnaire</b>	Direct feedback about activity			Indirect: questions included about these activities					
<b>Follow-up questionnaire</b>	Direct feedback about activity			Indirect: questions included about these activities					
<b>Group discussion during events</b>	Direct feedback about activity			Indirect: questions included about these activities					
<b>General focus group discussion</b>	Direct feedback about activity								
<b>SIPES post-project questionnaire</b>	Direct feedback about activity								

\*End of session tips and techniques: <http://www.uwex.edu/ces/pdande/resources/quicktipsnumerical.html> , <http://www.uwex.edu/ces/pdande/evaluation/evaldocs.html>

## Applying the Tools: Workshops, Field Days, and Informational Meetings

### Reaching Intended Audience

Understanding who attends your workshop, field day, or informational events can be as simple as asking attendees to sign-in on a pad of paper with address and contact information. More detailed analysis could include other questions to help determine if your target audience is attending, for example, questions about use and willingness to use various conservation practices.

## Impacts on Awareness, Attitudes, Constraints, Capacity, and Behavior

*End-of-session questionnaire.* One effective and time-efficient method for collecting information at events is using a single questionnaire administered at the end of the workshop that incorporates a “retrospective pre-test” Using this approach, participants are asked to rate their knowledge, skill, attitude, or behavior from two perspectives: after the educational event and before the event (see Example H.1 below). This approach has the advantage of providing a single form that allows participants to provide a response based on the information presented at the event. As a general guide, keep this to about 2 pages in length. Include questions to determine if participants are part of your target audience. When analyzing, look for increases in knowledge and skills, reductions in barriers and constraints, etc.

In a workshop setting, make sure to provide an appropriate amount of time for participants to complete an end-of-session questionnaire. In demonstrations or open informational events where people are coming and going at different times, develop a short questionnaire that can be completed quickly and left with an interviewer or deposited as people leave.

### Example H.1: A format for an end-of-session questionnaire

Please take a few minutes to provide feedback on this workshop. Your feedback helps us improve future workshops. Please fill in a circle and provide requested information.				
<b>For each question below, use the following scale:</b>	<b>Not at all</b>	<b>Minimally</b>	<b>Generally</b>	<b>Very Much</b>
1. <u>Before today</u> to what extent were you able to understand a nutrient management plan?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. <u>Now</u> to what extent are you able to understand a nutrient management plan?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. <u>Before today</u> how knowledgeable were you about nitrogen impacts on water quality?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. <u>Now</u> how knowledgeable are you about nitrogen impacts on water quality?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Group discussion and interviews.* Instead of a paper questionnaire, a facilitator could lead participants through a similar list of questions in a group setting or through individual interviews. This approach may prompt additional feedback and generate more information about your target audience. The analysis of this data would be similar to end-of-session questionnaires.

*Follow-up questionnaire.* Some workshops may warrant a follow up questionnaire. If you wish to capture mid-range outcomes of a specific activity before your formal post-project questionnaire (e.g., six months after a workshop), you could conduct a separate post-activity assessment with participants. Depending on the type of participants and their use of the Internet, post-workshop surveys can be conducted via mail, e-mail, or a web-based survey. For some groups, phone interviews or onsite face-to-face interviews with participants are preferred options. Participants could specify their preferred method for a follow-up contact during the outreach event.

Depending on the goals of your event, you would analyze your responses for the percent of

participants taking action or implementing practices as a result of attending. You could also ask about any barriers or constraints encountered in taking action.

*SIPES Post-project questionnaire.* Your post-project questionnaire is a convenient opportunity to collect information from your target audience about their participation in project events and any resulting actions.

### **Cost and resource considerations**

In general, costs of collecting information at events will involve staff time in preparing, administering and processing the assessment. There will also be minimal costs for materials. (See example below and the more detailed examples on the regional website)

Adding one or two questions to the post-project questionnaire developed through SIDMA will involve only the time involved in refining that questionnaire. If you choose to conduct a separate follow-up assessment before the end of the project, you will encounter costs for staff time in designing the assessment, administering the assessment, and processing the data (see Example H.2). For a small group of participants (for example, 15 riparian property owners), providing information by phone or via e-mail, the actual material costs will be negligible. The costs could be relatively high if you are mailing follow-up questionnaires to a large group of participants, and continue with repeated mailing to gain high response rates.

### **Example H.2: Cost estimate for follow-up**

**Example:** A project conducts a one-day workshop on nutrient management planning with 15 farmers

**Strategy:** The project uses an end-of-session questionnaire and a follow-up interview one year later

**Costs:**

- Time for designing end-of-session questionnaire and follow-up interview questions: 3 hours
- Time for summarizing and reporting data from end-of-session questionnaire: 4 hours
- Time for conducting on-farm follow-up interviews one year later (including travel time): 1.5 hours per farmer: 12 hours
- Time for summarizing and reporting data from 15 follow-up interviews: 30 minutes per farmer x 15 farmers: 7.5 hours
- Cost of materials: minimal (in-house printing for questionnaires, interview protocols, and reports)
- Cost of travel: variable

**Total Costs:** Approximately 25.5 hours of staff time plus cost of office materials and travel.

## Applying the Tools: Newsletters

### Reaching intended audience

If you deliver newsletters by mail, e-mail, or in person, you already know whether they are reaching your intended audience. To determine whether they are actually reading and using the information, you can include a tear-off questionnaire (see Table H.2), ask about the newsletters at event evaluations, or convene a focus or discussion group specifically to discuss your newsletter. You can also ask people who contact you how they heard about your project and where they found your contact information.

### Impacts on Awareness, Attitudes, Constraints, Capacity, and Behavior

Determining the impacts on awareness, attitudes, constraints, and behaviors attributed to newsletters is difficult.<sup>4</sup> As noted, some newsletters include a tear-off, stamped postcard in the newsletter that asks evaluation questions. Most readers do not respond to those requests, resulting in low response rates that may not be worth the expense of the effort. If you choose to use a tear-off, postcard evaluation, your questions should encompass the entire series of newsletters received, not just the newsletter that contains the postcard.

As with other activities, you can include questions about newsletters in evaluation efforts for other activities (questionnaires, group discussions, etc.) and in the SIPES post-project questionnaire. SIDMA will include model questions for this purpose. Your SIPES questions can ask whether respondents found the newsletter to be useful and also assess specific knowledge that newsletters were meant to convey. For example, if you included information about servicing septic systems in your newsletter, you can include a question about that in your final questionnaire.

**Table H.2: Example questions related to newsletters**

Evaluation Method	Example Impact Questions
Tear-off Postcard or inserts in utility bills	Did you find the information in this newsletter/series helpful? Prior to this newsletter, were you aware that you shouldn't plant trees over your septic system?
Post-project questionnaire	Did you receive the newsletter? Was information in the newsletter useful? Prior to the newsletter, were you aware that you shouldn't plant trees over your septic system?

### Cost and Resource Considerations

If you choose to use a stamped, tear-off postcard in your newsletter for evaluation, the cost will include postcard postage, postcard printing, and staff time for data entry and analysis. Including questions about newsletters in other evaluation settings and in SIPES post-project questionnaire will be negligible.

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<sup>4</sup> Broussard, S.R., & Floress, K. (2006). *Are newsletters effective? Assessing their role as a communication tool*. Purdue Extension Publication FNR-269-W. Available online at: <http://www.ces.purdue.edu/extmedia/FNR/FNR-269-W.pdf>.

## **Applying the Tools: Websites**

### **Reaching Intended Audience**

In addition to asking about your website during other evaluation effort, there are several specialty tools available for determining who uses your website and what they do when they visit. Free services such as Google Analytics (<http://www.google.com/analytics/index.html>) allow you to track data, calculate goal metrics, and provide usage reports. This information can help you understand more about where your website visitors come from and their use of the site, for example, if they “hit” the parts of your website you want people to visit or download files you have posted.

### **Impacts on Awareness, Attitudes, Constraints, Capacity, and Behavior**

Evaluating whether your website has raised awareness, reduced constraints, or helped with other intended social outcomes is best measured using the tools described in Table H.1 – asking about the website during other events and in other questionnaires, or organizing a discussion group to provide feedback on the website.

Another external measure related to community capacity and networks is whether important other websites include a hyperlink to your site. For a rural area, this might be the farmers’ cooperative, and for an urban area this might be the municipal website.

### **Cost and Resource Considerations**

Depending on the approach taken to assessing your website, the primary cost is staff time. Discussion groups or user testing may require special incentives for participants, but generally costs for such testing relate to the time investment. Adding survey questions for the target audience to the SIPES post-project questionnaire involves negligible additional cost.

## **Applying the Tools: Brochures, Fact Sheets, Informational Signage, and Media Materials**

### **Reaching Intended Audience**

Approaches for determining whether you are reaching your target audiences will vary depending on the activity. As you distribute them, you can record who receives brochures and fact sheets. Including questions in your SIPES post-project questionnaire can also help you determine whether your target audience is aware of these materials and how they used them.

For some purposes, assessing who is reached by a mass media strategy can be quite straightforward. For example, if you are using media to announce an event – such as hosting ‘clean-up days’ for a local water body, then you can ask people attending how they heard about the event.

## **Impacts on Awareness, Attitudes, Constraints, Capacity, and Behavior**

The options for assessing impacts for these activities are summarized in Table H.1. For the most part, it makes sense to include questions about use and awareness of these materials as part of other related evaluation efforts, such as follow-up questionnaires for workshops, or to wait to assess as part of the SIPES post-project questionnaire. As noted in Section G, these outreach materials are intended to serve specific purposes related to raising awareness, illustrating how to do something, or generally sharing information.

If you are interested in specific feedback on a particular outreach activity, a focus group or informal discussion group addressing the specific activity can be an economical solution. Evaluation questions would relate to how your target audience was aware of the materials, whether they found them to be useful, and whether they acquired the specific knowledge of interest.

### **Cost and Resource Considerations**

Costs will vary depending on your evaluation choices for these materials. Including questions in other evaluation settings and in SIPES post-project questionnaire will be negligible. Informal discussion groups may also involve minimal costs, whereas a formal focus group process can include costs for incentives, a facilitator, and summary report. In general, informative information about these activities can be collected for little costs by adding questions about usage and awareness to related evaluations at project events.

### **A Note About Incentives**

Although primarily provided to reduce specific constraints to adoption, you can also evaluate your use of incentives using the approaches in this section. Discussion and focus groups, in particular, can yield insights on why the incentives are attracting landowners or not. You can also ask people about their awareness of incentive programs at project events.

### **Adapting Your Activities**

What happens if you determine from your evaluations that your activities are not helping you achieve your project goals and intended social outcomes? You should begin by revisiting the outreach plan you developed in Step 3. Are you using the appropriate activities for your purposes? Are you doing them well? Have your evaluations produced any specific suggestions for how to improve the way you are implementing your project?

For example, your project may have offered a workshop on the benefits of conservation buffers, which drew 20 people. Your actual target audience this project is riparian landowners within a specific sub-watershed, but in reviewing your participation data, you realize that none of the participants are actually part of your target audience. You can use that information to review how people were notified of the workshops and consider changes in contacting those you hope will attend.

Example H.3 on the next page includes another example, in which project staff realized they needed to expand their outreach programs to train people interested in installing rain barrels for others in their community.

A series of helpful questions for meeting your goals is available through the USDA water outreach assessment worksheet: <http://wateroutreach.uwex.edu/use/assessworksheet.cfm>. You can also review resources on conducting outreach activities, such as USEPA's *Getting in Step* (2003).

## **Summarizing and Reporting on Your Activities**

In addition to using your evaluation information for improving your project implementation, you can summarize and report your results to your state NPS program and your local partners. The most straightforward way to report your results is to relate them to the goals of your broader outreach and education effort and overall water quality goals.

Eventually, the SIDMA tool will allow projects to upload periodic reports that demonstrate the quality and/or impacts of your activities. This kind of report could also be sent to your state NPS program as an attachment to your usual periodic reporting. State NPS program would include the information as attachment to their reports to USEPA.

The following information about your evaluation results would be helpful. Depending on your project, not all of these categories would need to be included in a report.

1. A brief description of the activity and what you did to evaluate it.
2. Information about any general measures you wish to report (for example, quality and extent you reached your target audience).
3. Information about outcomes related to awareness, attitudes, constraints, and capacity (how has the activity influenced these among intended audience?).
4. Information about outcomes related to how the activity led to actions by the target audience (where relevant).
5. Comments and insights on factors that helped or hindered activities.

### Example H.3: A sample periodic report using social indicators

#### **Example:**

Example: A watershed group wants to increase adoption of rain barrels by 30% over the course of a two-year implementation grant. They use a Public Service Announcement on local radio stations to inform people that pollution is a problem in the watershed and asks people to prevent urban runoff. They also use a demonstration of a rain barrel at a local hardware store. The group expects the demonstration to have a more direct impact on adoption rates of rain barrels than the PSA. The group includes questions about the demonstration and PSA on their post-project survey to help assess impact. Following their use of the PSA and the demonstration workshop for rain barrels, the watershed group decides that it wants to assess effectiveness of their demonstration only. They provide this narrative:

#### **1. Provide a brief description of the activity and what you did to evaluate it:**

Our group hosted a demonstration “How to” project for installing rain barrels on residential downspouts. Following the demonstration, 90% of the participants volunteered to fill out a questionnaire. Our organization followed this with a mailing 6 months later to determine if barrels had been installed.

#### **2. Provide information about any general measures you wish to report (for example, quality and extent you reached your target audience):**

The questionnaire was developed using guidelines from UW Extension’s Program Development and Evaluation Unit. We collected information on the demographics of the participants. While our target audience was broad, we were interested in homeowners in the denser neighborhoods within a half mile of the lake. 21 of the 22 participants lived in the target area.

#### **3. Provide information about outcomes related to awareness, attitudes, constraints, capacity:**

This was a capacity building exercise. All 22 participants indicated they had increased their understanding of the purpose and function of rain barrels; 22 indicated that they understood how to install a rain barrel; and 20 indicated that they felt that they could install a rain barrel. For the two participants that did not indicate that they felt capable of installing a rain barrel, there may have been an age or gender relationship (both were women in their late 60s to early 70s).

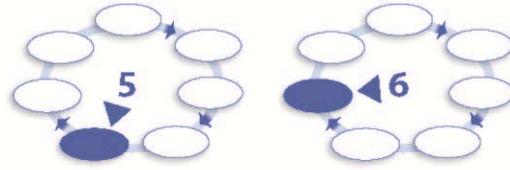
#### **4. Provide information about outcomes related to how the activity led to actions by target audience:**

The follow-up survey was mailed; there was a 77% response rate from the participants (17 of 22). Of those, 10 (58.8%) installed rain barrels at their home. 4 of those participants helped to install rain barrels for 2 to 5 other households in their neighborhood, and 1 helped to install 5 or more rain barrels in their neighborhood. In total, 30 rain barrels installed.

#### **5. Comments and insights on factors that helped or hindered activities.**

We did not take into account the fact that some participants might come because they were interested in rain barrels, but potentially not physically capable of installing their own. Also, we didn’t expect that there would be nearly as large a percentage of the participants helping others to do rain barrels as there were installing barrels at their own homes. I think we may want to think about the idea of a structure that trains a team of volunteers to install them for others (especially the elderly or infirm).

## Section I: Collecting Data at the End of Your Project



Congratulations!! Unless you're taking a sneak peak ahead in the Handbook, you are nearing the end of your project and you're ready to collect post project data and see how well your project performed in terms of social indicators. You will be happy to know that collecting your end of project survey data is very similar to collecting survey data at the beginning of your project. There are a few differences that you need to be aware of and we point these out in this section, but other than these differences, you should refer to sections D-F for information on conducting your questionnaire.

You also need to collect non-survey data at the end of your project. You will collect some of this data through focus groups and the rest will come from your project records. This section explains the type of data you need to collect and how you should collect and report it.

### Post Project Survey Data

#### Create Questionnaire

The questionnaire you used at the beginning of your project is still stored in SIDMA. You may make minor adjustments to this questionnaire if you need to. For example, if you had some questions about possible outreach activities in your questionnaire at the beginning of the project, you may want to remove them now. You may also want to add some specific questions about elements of your project, e.g. you may want to know how many of your survey respondents attended a field day or other outreach event that you planned. The majority of your survey, in particular the questions related to social indicators, should remain unchanged.

#### Update Address Lists, Review Sample Size, and Select New Sample

*If you used a census to collect data at the beginning of your project, you will want to send your survey *only* to the people who responded – in other words, you will not need to mail out as many surveys the second time around. SIDMA will match up the responses in the two time periods for each individual respondent.*

*If you used a random sample of your population to collect data at the beginning of your project, you will need to resample the target audience. Prior to doing this, you will need to ensure that your address list is current. Unless you've been keeping up with the addresses all the way along, you will need to re-assemble a complete list of your target audience using the method you used in section F. After you have done this you should select a new sample based on Table 2 in section D.*

## **Create Advance Letters, Cover Letters and Postcards**

The letters and postcards you mail out at the end of your project can be very similar to the ones you send at the beginning. You can consider including extra statements about the status of the project and the fact that this is an end-of-project questionnaire. You can state that this survey is similar to one that was mailed out before the project and survey responses will be compared over time.

## **Administer Questionnaire and Enter Responses in SIDMA**

Refer to section F for information on administering the questionnaire and entering responses.

## **Additional Post-Project Data**

At the end of the project, you will collect additional data to understand what worked and did not work about your project. You will report this data in SIDMA using the end-of-project questionnaire. You will gather this information in two primary ways: a group discussion and a review of your records.

### **Focus Groups / Group Discussion**

Focus groups are a common method of gathering opinions on a topic of interest. They are frequently used by businesses but are also used in social science research. Focus groups are used to gather qualitative data—rich, contextual data about topics of interest. You should consider holding one focus group for each of your target audiences. For more projects, these focus groups could look like informal discussions and be conducted by project staff.

Generally, each focus group (or group discussion) should consist of 4 to 10 people in a comfortable room seated in a circle with refreshments. Invitations should be sent well ahead of time, with reminders closer to the date of the meeting. Five to six questions without a “correct” answer should be prepared in advance. These questions should cover the topics identified in the end-of-project questionnaire and any other issues you want to discuss with your stakeholders. The facilitator will then guide people in discussing these questions. The advantage of a focus group over individual interviews is that as one person shares his or her answer, others modify theirs, think about new things, and more dimensions and opinions on the answer emerge.

### **End-of-Project Questionnaire**

Project coordinators will submit answers to the following questions using SIDMA:

*For the first four questions, please gather input from project partners.*

1. Please list up to three factors related to your group that most contributed to the success of your project. *For example: great volunteers, coordinator who knew how to mediate conflict, steering committee member with background in publicity.*

2. Please list up to three factors related to your group that most hindered the success of your project. *For example: low attendance at meetings, high turnover rate of staff, not enough money.*
3. Please list up to three factors external to your group that most contributed to the success of your project. *For example: newspaper reporter that covered all of our major events, farmers who were willing to come to our workshops even though they were not initially supportive of our objectives, conservation group in the area that supported us with resources.*
4. Please list up to three factors external to your group that most hindered the success of your project. *For example: county government was very resistant to idea of changing ordinances, small segment of homeowners wrote repeated letters to the editor against our project, dropping corn prices made farmers unwilling to adopt riparian buffers.*

*For the remaining questions, please refer to project records:*

5. What percentage of adopters is in the target audience?
6. What percentage of treated acres is in the critical area?
7. What percentage of installed practices is in the critical area?
8. Based on project records, what is the percentage of critical area receiving treatment?
9. Based on project records, what is the percentage of target audience implementing practices in critical areas?
10. What ordinances are in place related to NPS practices?
11. What additional cash and in-kind resources were leveraged as a result of project funding?
12. What other funding is available to support NPS practices in the critical areas?
13. What other technical support is available for NPS practices in the critical areas?
14. What provisions are in place to monitor NPS practices in the critical areas? What other information would you like to report about the implementation of your project?

## Section J: Analyzing and Using End-of-Project Data



After collecting your second round of SIPES survey data, you can now examine the data to see if there have been any notable changes over the course of your project. As all the pilot projects are a couple of years away from collecting end-of-project data, this section of the Handbook is still a work in progress. However, it provides an overview of what SIDMA will do in the future and how the survey data can be used to understand whether your project led to expected changes.

SIDMA will generate a comparison of pre and post scores for all of the survey questions and all of the indicators. If your survey was conducted using a census, then any difference between the pre and post scores represents an actual change in your target audience over the course of your project. If your survey was conducted using a random sample, then SIDMA will explore whether the differences between pre and post scores is statistically significant. For readers with an interest in statistics, this will be done using a difference of means t-test. SIDMA will report all the differences but will note which ones are statistically significant.

There are several caveats to bear in mind when interpreting end of project data:

- (1) A positive change in any variable or indicator over the course of your project is a great sign that you did something right. However, changes could be due to factors outside the scope of your project. For example, maybe people stopped using as much fertilizer because the cost sky-rocketed not due to the social marketing campaign that you used.
- (2) A negative change in any variable or indicator over the course of your project may mean that your project was unsuccessful. It may also mean that other forces were at work within your watershed. For example, you may have been trying to get farmers to install riparian buffers and instead you find that over the course of your project, the number of riparian buffers has decreased not increased despite all your efforts. A finding like this could be attributable to increasing commodity prices changing farmers' motivations in ways your project could not expect to alleviate.
- (3) No change may not mean that your project was not effective. It may be that without your project, there would have been a negative change in the variables and indicators and your project overcame these forces and maintained the status quo.

All these caveats reinforce the need to fully understand and document everything that has occurred within your project area over the course of your project. The end-of-project questionnaire discussed in Section I will help you do this. As you interpret your pre and post data, please refer to the end-of-project questionnaire to help you contextualize them. Understanding why or why not changes in intended outcomes have occurred over the course of your project will help you improve future projects in your watershed.

## Author Attributions

While all members of the Social Indicators team contributed to this Handbook and towards every section, the primary authors of each section are noted below.

Introduction: Social Indicators for Planning and Evaluation System

Linda Prokopy and Ken Genskow

Section A: Steps for Using the Social Indicator Planning and Evaluation System

Karyn McDermaid and Rebecca Power

Section B: NPS Project Planning: Setting the Stage for Working With Target Audiences

Rebecca Power

Section C: Getting started with SIDMA – the On-line Social Indicators Data Management and Analysis Tool

Cynthia Curtis and Jeremiah Asher

Section D: Choosing a Survey Method and Sample Size

Linda Prokopy, Kristin Floress, Ken Genskow, and Karyn McDermaid

Section E: Developing a Social Indicators Questionnaire

Kristin Floress, Ken Genskow, and Karyn McDermaid

Section F: Administering the Social Indicators Questionnaire

Karyn McDermaid, Kristin Floress, Ken Genskow, and Linda Prokopy

Section G: Using Social Indicators Survey Results to Develop Education and Outreach Strategies

Adam Baumgart-Getz, Rebecca Power, and Linda Prokopy

Section H: Evaluating Outreach Activities During Project Implementation

Ken Genskow, Danielle Wood, and Kristin Floress

Section I: Collecting Data at the End of Your Project

Linda Prokopy

Section J: Analyzing and Using end-of-Project Data

Adam Baumgart-Getz and Linda Prokopy