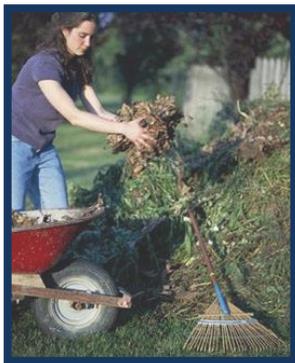


# Encouraging Sustainable Behavior

## A Guide for National Fish and Wildlife Grantees to Implement Social Marketing Campaigns



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## INTRODUCTION

Based on a review of numerous Small Watershed Grants Program (SWGPs) grantee proposals and logic models, typical measures of success with regard to outreach and education efforts include indicators such as number of brochures printed and distributed, workshops held, or persons “reached” via print or other media advertisements or as part of an education initiative. These numbers are important, and are often easily measured and reported, but do not say much about the real environmental or water quality impact of these efforts for a particular watershed or for the Chesapeake Bay. In addition, education and outreach efforts were most often focused not toward a specific, defined, target audience, but toward a loosely defined group such as “residents” or “the general public”.

In a response to an evaluation of the SWGP (conducted in 2007 by GHK Consulting, Inc., with Zoo-LOGIC, LLC), NFWF indicated that starting in 2007, the SWGP began evolving “away from typical environmental education and outreach towards a more strategic focus on social marketing” and “actively seeking projects that propose to use social marketing to achieve behavior changes.” SWGP is working with grantees to enhance their proposals to include social marketing elements that will have measurable results.

Our task was to work to develop metrics and indicators of progress for these small watershed organizations to understand baseline, or current behaviors, do a better job of designing successful campaigns with an end goal of long-term behavior change. We also provide a framework to evaluate social marketing campaigns and measure changes in behavior (positioning grantees to better ascertain environmental impact in terms of nutrient or sediment reduction).

## WHAT IS SOCIAL MARKETING?

The primary difference between a successful social marketing campaign and typical environmental education or outreach efforts undertaken by many SWGP grantees is that social marketing:

1. focuses on a defined target audience and a desired behavior change for that audience;
2. follows a specific process to understand the target audience and the barriers that exist for those individuals to adopt the desired behavior change; and
3. has as its primary goal measurable, and hopefully sustained, behavior change in that target audience.

So, in effect, we aim to measure behavior change. But in order to accurately measure change in behavior over time, and evaluate success, a grantee must be guided through the process of defining and understanding a target audience and what it will take to change, alter, or encourage behavior in that audience. The steps of this process are outlined below. In SWGP projects with a social marketing component, metrics are split into “contact” metrics (e.g., number of people reached, brochures distributed, workshops conducted) and “change” metrics. Change metrics are evaluated by the actual behavior change that occurs.

## CHANGING TARGET AUDIENCE BEHAVIOR THROUGH SOCIAL MARKETING

Improving water quality from human-induced sources of pollution requires people to change their behaviors. Social marketing is defined as the use of marketing principles and techniques to influence a target audience to voluntarily accept, reject, modify, or abandon a behavior for the benefit of the target audience or society as a whole (Kotler et al. 2002, Weinreich 1999). There are four key components to note in this definition. First, a target audience is selected and researched, and a marketing campaign is designed specifically for these individuals, as opposed to for the “general” public. Second, social marketing involves the adoption, rejection, modification, or abandonment of a selected behavior or practice, and third, the decision to make this change is voluntary. Finally, the behavior change sought benefits either the target audience, as in many public health campaigns, and/or society as a whole, as is the case with most environmental- or conservation-focused campaigns. Success, then, should be evaluated based upon behavior change goals for the target audience(s). To summarize, **the community-based social marketing approach identifies barriers and benefits to a target behavior, designs a strategy that utilizes behavior change tools, pilots that strategy with a small subset of the target audience, and evaluates the impact of the program once implemented** (McKenzie-Mohr and Smith 1999).

Community-based social marketing, a hybrid of psychology and social marketing, was created to complement educational, regulatory, and persuasive approaches to behavior change. The majority of this section is drawn from

the book *Fostering Sustainable Behavior: an Introduction to Community Based Social Marketing 3<sup>rd</sup> Ed.* (2011) by McKenzie-Mohr, an invaluable resource in designing and implementing community-based social marketing campaigns. This book is light on academic and technical jargon, and very accessible, making social marketing an approach that any organization can incorporate. The community-based social marketing approach emerged originally due to recognition by many Canadian public officials and program planners that conventional persuasive or informational campaigns were not succeeding in fostering sustainable behaviors.

There are many frameworks and theories for attempting to explain human behavior, but, according to McKenzie-Mohr and Smith, these myriad approaches may be simplified into three types of barriers, or reasons people will not engage in a behavior:

1. People do not know about the activity or its benefits.
2. People do know about the activity but perceive that there are significant challenges, or barriers associated with engaging in the behavior.
3. People perceive that there are not significant barriers to adopting an activity, but also perceive that continuing to engage in their current behavior is benefitting them, because it is easier to do. Note that the current, or competing behavior may be doing nothing!

Therefore, McKenzie-Mohr (2011) notes three important ideas highlighted in the community-based social marketing approach:

1. People will gravitate toward the behavior that has the most benefits for them and the least significant barriers.
2. These barriers and benefits may be real or perceived, and may vary greatly from individual to individual. A benefit to one person may be a barrier to another, and *vice versa*, which points to the importance of formative research to understand the target audience.
3. Desired behaviors compete with other behaviors. People must choose between behaviors, and adopting a new behavior or changing an existing behavior often involves altering or rejecting another.

Proponents of community-based social marketing encourage program planners to focus on the barriers and benefits that underlie behavior choices. Successful programs remove barriers and enhance benefits to participation. This approach recommends researching the many barriers and benefits to adoption of a particular behavior to a large segment of the population (thus, community-based social marketing) and then using this information to group the audience into segments, or target audiences, which have common characteristics, and often common barriers to adopting a particular behavior. If the behavior change one seeks to elicit will be directed toward a broader group (a community or neighborhood), this is a good approach to think about how to communicate effectively with different segments of that group, and better focus a message. Alternatively, if the focus of one's marketing effort is predefined (e.g., homeowners or farmers in a certain area), one might begin by researching behavioral change barriers and benefits associated with other, similar groups before focusing on that particular target group.

McKenzie-Mohr underscores three questions central to the development of a community-based social marketing campaign:

1. **What behavior should be promoted?** More broadly, what is the environmental objective, and through what potential behavior changes could it be most efficiently and effectively reached? Often environmental objectives can be met in numerous ways, but adequate resources are not available to pursue all possible

approaches. Consider what potential exists for an action to bring about the desired change and consider the barriers and benefits that exist for each potential behavior change. The decision of which behavior(s) to focus on is ultimately dependent on 1) the potential of the action to bring about the desired environmental objective and 2) whether or not the resources (particularly time and funding) exist to overcome the identified barriers to adoption of the behavior.

Bear in mind that some behaviors are more complex than others. Some behaviors actually have multiple component behaviors that must be taken into consideration. For example, installing a rain garden in one's backyard requires not only a certain initial investment of time and money, and the knowledge and skills to design and construct it, but also the time, effort, and monetary cost for the homeowner to continue to maintain it over time. So, in fact, there are multiple behaviors that must be adopted for the rain garden to have the intended environmental benefits. In addition, there are behaviors that are one-time (e.g., buying and installing a low-flow shower head) and those that are continuous, or repetitive (e.g., collecting and composting organic materials each week rather than throwing them in the garbage). One behavior may be more useful in reaching the environmental objective, but have significantly more barriers to overcome for a member of the target audience.

2. **Who is the target audience?** Once one has decided which behavior will be most advantageous to meeting the desired environmental objective, consider the audience that has the highest potential to adopt the desired behavior with the greatest impact. Segment and prioritize a larger, more general audience if necessary.
3. **What conditions, or barriers and benefits, will the target audience face in the decision to alter an existing behavior or adopt a new one?** Barriers may be *internal* or *external* to the individual. Internal barriers occur within the individual and include issues such as lack of knowledge (e.g., not having the information to begin recycling correctly). External barriers, on the other hand, are outside of the individual's control, but still constrain behavior options. These can include infrastructure issues (no convenient recycling pick-up in the area) or social pressures (none of the neighbors are interested in recycling). Multiple barriers may, and often do, exist for a single behavior. The bottom line: in order to design a successful social marketing campaign, one must start by understanding why people are not currently engaged in the desired behavior.

It is also important to consider *competing behaviors*. This process is represented in a simple chart (Table 1). As McKenzie-Mohr explains, both the target behavior and the competing behavior have benefits and barriers. In most cases, the competing behavior has more benefits and fewer barriers than the target behavior, which is why the competing behavior is the behavior of choice for most individuals.

**TABLE 1. PERCEIVED BENEFITS AND BARRIERS OF TARGET AND COMPETING BEHAVIORS EXAMPLE**

	<u><b>New (Target) behavior</b></u> <i>Installing and maintaining a backyard rain garden</i>	<u><b>Competing behavior</b></u> <i>Continuing to maintain backyard as in the past</i>
<b>Perceived benefits</b>	<ul style="list-style-type: none"> <li>• Increase wildlife habitat</li> <li>• Prevent standing water in yard and mosquitoes</li> <li>• Improved water quality for nearby creek and the Chesapeake Bay</li> </ul>	<ul style="list-style-type: none"> <li>• Looks nice, the way I like my yard to look</li> <li>• Not limited in the type of vegetation I can plant</li> <li>• Can do things the way I am accustomed</li> <li>• Yard looks like the others in my neighborhood</li> </ul>
<b>Perceived barriers</b>	<ul style="list-style-type: none"> <li>• I do not understand the function and benefits of installing a rain garden</li> <li>• Concern about time and money required to build and maintain</li> </ul>	<ul style="list-style-type: none"> <li>• Not improving water quality of nearby creek</li> <li>• Issues with standing water, runoff, and mosquitoes</li> <li>• Basement floods a few times a year</li> </ul>

The goal of a social marketing campaign is to alter the ratio of the benefits and barriers to make the target behavior a more popular choice for one’s target audience. There are four ways which this can be done, none of which are mutually exclusive:

- Increase the benefits of the target behavior
- Decrease the barriers to the target behavior
- Increase the barriers to the competing behavior
- Decrease the benefits of the competing behavior

Using this approach will help social marketers understand the complexity of behavior change for their target audience, and design a campaign that includes the multi-faceted approach necessary to achieve successful behavior change.

## CONDUCTING FORMATIVE RESEARCH

A social marketing campaign, therefore, starts with conducting formative research to identify the target audience and available marketing tools and strategies; selecting and applying these tools for behavior change; designing, pilot testing and implementing a marketing campaign; and finally, evaluating progress in achieving behavioral change.

Most NFWF grantees already have a general idea of their target audience (e.g., farmers or landowners), although perhaps this notion could be better focused for many projects. Numerous grant projects still work to build awareness among all residents in a community, or inform the general public, rather than focusing on a particular segment of people and a specific behavior change.

As Weinreich (1999) notes, the first lesson of social marketing is that there is no such thing as targeting the general public. As discussed above, many organizations and organizers wish it was the case that if people were given all the information they need, they would make the best choice for themselves and the environment, and change their behavior accordingly. But this is not the case, and since time and resources are limited, the target audience for a campaign must be designated as specifically as possible. The target audience refers to the group of people whose behavior the grantee wishes to affect. This group might be an existing group that the grantee is somewhat familiar with from past projects, or it may be a new group of people. These people are potential customers or consumers of the “product” the grantee is trying to convince them to “buy”, or behavior the grantee wishes to convince them to adopt (Weinreich 1999).

In the case of environmental or sustainable behaviors, the target audience is most likely the group of people in the best position to have a measurable impact on the desired environmental objective. For example, if the objective is to limit nutrient loading to a specific segment of a particular stream, the livestock farmers with stream side property who have not yet installed stream bank fencing may be the most logical target audience. If targeting multiple groups could be advantageous to achieving environmental objectives, consider prioritizing these groups to allow effective allocation of resources for the maximum environmental benefit. Distinct target groups often require different types of communications and strategies, which may complicate a social marketing campaign, but may make it more effective in the long run.

Once selected, the next step is researching the target audience. Often, organizations develop messages about what they think the target audience needs to know, rather than taking the time to find out what they already know, and what knowledge/opportunity they specifically need, to achieve the sought behavior change. As McKenzie-Mohr and Smith (2000) point out, hunches regarding what motivates people to engage in particular behaviors are important, but they should be recognized for what they are: speculation, and should never be used as the basis for a community-based social marketing campaign.

## LITERATURE REVIEW

Formative research should start with an extensive literature review of studies with a similar focus on a particular behavior or target audience. The mandate should be clearly defined at this point. McKenzie-Mohr (2011) recommends several sources of information for a literature review (Appendix A):

1. Trade magazines, newsletters and reports from organizations implementing CBSM.
2. Academic journals related to social marketing.
3. Interactive online databases or forums and listservs

As mentioned previously, the importance of building local context into formative research cannot be understated. The value of Community-Based Social Marketing across the Chesapeake Bay Watershed is being recognized by a variety of funders (e.g., NFWF, Chesapeake Bay Trust, and the Bay Funders’ Network) and grantees, and due to this recognition, a framework for a crowd-sourced database of CBSM case studies has been developed. The planning template, database framework, and several representative case studies are shared in Appendix D. Plans for promoting this tool to the Bay community, and populating and managing this database are under development.

## OVERVIEW OF QUALITATIVE RESEARCH APPROACHES

Once all of the available secondary information has been gathered from the literature search, grantees should consider filling in the gaps with their own primary qualitative data collection. This qualitative data collection can range from in-depth observational studies, interviews or focus groups, to simple conversations with members of a target audience if time and resources are limited. With these approaches, grantees can seek to more fully understand not only what behavior choices your target audience makes and what barriers and benefits exist to the adoption of certain behaviors, but why these decisions are made and why certain barriers are a factor in the decision-making process (Weinreich 1999). These approaches help put answers into the context of a specific audience. Here are some options for collecting qualitative data, as suggested by McKenzie-Mohr (2011):

**Observational Studies** involve watching people conduct the target behavior in as natural setting as possible to ascertain when, how, and how frequently they perform the behavior. This approach avoids the issue often encountered with asking individuals questions about their own behavior: people tend to over-report or exaggerate the extent to which they engage in an activity. These studies can also help establish what triggers an individual to conduct a behavior, and what incentives might encourage the behavior. Information obtained from observation allows a researcher to understand details about the performance of a behavior that are hard to uncover any other way. Drawbacks of this method are that they are difficult to do on a large scale, and do not provide information about why people do what they do, as focus groups and interviews do. Observers should be aware that the act of observing someone conducting a behavior may alter how the person behaves. Several types of observational studies have been summarized by McKenzie-Mohr and Smith (1999) as follows:

- **Performance Observation** involves comparing how a behavior should be conducted and how individuals actually do it. This approach is useful when the observed behavior is well understood (what works and what does not) and when doing the behavior correctly is essential to accomplishing the environmental goal. This type of observation can help identify common errors and necessary skills for your target audience.
- **Narrative Observation** is used when performance of a behavior is not well understood by the researcher and a basic comprehension of what is happening is necessary. The researcher documents what is done, when, how, and by whom.
- **Behavioral Audits** are used to determine compliance, that is, to what extent people are correctly performing the behavior.
- **Frequency Observations** involve documenting when and how often a relatively rarely- performed behavior is completed.
- **Duration Observations** are used when an activity is performed infrequently and the desire is to have the target audience perform the behavior more often.

**Interviews** are an important way to gather information about a target audience, and can range from one-on-one, in-depth conversations to brief intercept interviews.

- **Intercept interviews** are brief and to-the-point. They are helpful in determining if themes and topics that may arise during focus groups hold up in the larger target audience. These quick verbal interviews of three to four questions are low-cost and are best done in a public venue, where members of the target audience are present.

- **In-depth or personal interviews** involve longer conversations with a sample of the target audience. Interviews often allow for an in-depth understanding of the connections and perceptions of the issue, and may bring up concepts previously unidentified by the researcher. Although interviews can be a reliable source of detailed information, they can be expensive and time-consuming to conduct, requiring staff trained and paid to conduct them and multiple contacts with potential participants for scheduling.

**Focus Groups** may be used to understand deeper issues underlying behavior choices within a target audience, identify underlying social norms of a group through the ways people talk about the activities, and help to understand connections among dimensions of the issue – such as how the normative expectations relate to actual behavior choices, or how people think through the trade-offs among behaviors. The literature review and observational studies, if conducted, will help to identify the primary issues to be explored. Conducting focus groups will help determine which issues have not yet been identified, and help to understand the identified issues more fully. Resource C (Focus group and survey research resources) contains additional information about conducting focus groups.

- **Who participates?** A focus group generally involves 6-10 community members who are representative of the target audience invited to discuss the issues surrounding a behavior. Using volunteers for a focus group increases the likelihood that participants will be more interested and supportive of the behavior than the average community member. A trained, neutral facilitator should be selected who is comfortable guiding participants through the process and working to balance the level of participation among dominant and less vocal members of the group. An assistant who can serve as a note taker for the group, or, with permission from the participants, tape recording the session is also useful.
- **Make it convenient.** It is important to work hard to make it convenient for selected participants to participate in the focus group: consider arranging transportation, offering child care, providing refreshments, and picking a central location that is comfortable for all participants. A monetary incentive or other compensation for their time is also a common practice.
- **Segmented target audience?** If a target audience is segmented, consider holding separate focus groups for each of the segments, grouping similar individuals together. This will help determine if there are other differences between segments that may not have been recognized earlier (Weinreich 1999). If it is possible to randomly select participants that already perform the behavior to some extent, and those who do not, use focus groups as an opportunity to understand the differences between these two groups. It is critical that participants within a focus group be similar enough that they will feel comfortable sharing their thoughts and experiences candidly.
- **Questions to ask?** Focus groups follow a pre-arranged script that summarizes the topics to be discussed, ground rules for the discussion, and questions to ask. The questions in a focus group should be informed by the findings from the literature review. McKenzie-Mohr and Smith (1999) have devised a list of six basic questions that can be adapted to a variety of behaviors and expanded upon; simply replace “X” with the behavior in question:

TABLE 2. QUESTIONS FOR IDENTIFYING BARRIERS AND BENEFITS USING FOCUS GROUPS

<b>General information about the behavior</b>
<b>What does it mean to do X? Describe how you conduct this behavior.</b>
<b>Barriers</b>
<b>What makes it difficult to do X?</b> <b>What makes it easy to do X?</b>
<b>Benefits</b>
<b>What positives are associated with doing X?</b> <b>What negatives are associated with doing X?</b>
<b>Social Norms</b>
<b>Who wants you to do X, and how much do you care about their opinion?</b> <b>Who doesn't want or care if you do X, and how much do you care about their opinion?</b>

- **Analyzing data.** Once focus groups are complete, take time to summarize the discussion. Tabulate the number of times certain comments were made, paying particular attention to the themes that arose again and again.

#### OVERVIEW OF QUANTITATIVE RESEARCH APPROACHES

Focus groups and interviews are helpful to understand the dominant issues surrounding a behavior, but are often not sufficient to design a social marketing campaign. This limitation of focus groups is due to the small number of participants, the impact that certain participants may have on one another, and the resulting qualitative nature of the data. Focus groups will, however, provide valuable insight into what the primary issues are, enable the researcher to write a well-informed survey to further probe the target audience about the desired behavior change, and allow collection of more quantitative data. As McKenzie-Mohr and Smith (1999) point out, there are several approaches to gather quantitative information including mail, phone, and online surveys.

- **Mail or email surveys** are often less expensive and more efficient in terms of staffing than personal interviews, but may have low response rates, ranging from twenty to forty percent. These low response rates bring into question the representativeness of the data gathered, since such a small proportion of the target audience responded. In addition, those more interested in the campaign or initiative are more likely to take the time to complete the survey than those who are not interested, potentially skewing results.
- **Phone surveys** are a viable option for many initiatives, because they are less expensive to implement, require less time, fewer staff, and tend to produce a higher response rate than mail surveys, thus making them more representative of the target audience. In addition, those who choose not to participate in the full survey may be given the option of a “refusal survey” consisting of the three or four most important questions on the full survey. This information can be compared to those who responded to the full survey to see if there are differences between those who completed the full survey and those who did not.

- **On-line surveys** are another option for web-savvy community groups. These are quick and easy to create, and enable a fast turn-around. However, effectiveness is limited if the entire audience does not have reliable web access, such as in low income or rural areas.

**What information should and should not be included in a survey?** McKenzie-Mohr and Smith (1999) provide seven helpful steps in survey creation. First, a grantee can clarify what they want to accomplish with the survey by writing an objective statement. This statement should clearly state what the survey should measure, and prioritize objectives if there is more than one. This statement can also be used to bring others (such as staff or volunteers) up to speed about what the grantee hopes to accomplish. Second, topics or themes that arose during formative research and focus groups should be listed and organized logically. For example, group themes related to behavior, demographics, and barriers together. Keep the number of themes covered in the survey to a minimum. Look carefully at the objective statement: if a theme does not seem to help accomplish an objective, it should be eliminated. Simplify the survey wherever possible.

Third, when writing the survey, be sure to use mostly close-ended questions, in the form of multiple choice or ranking. The entire survey should take fewer than 10 minutes for the average respondent to complete. Likert scales are a useful way of obtaining information about respondent opinions and attitudes. Use six or seven points on the scale, and only label the two endpoints (for example: 1= strongly disagree and 6 = strongly agree). Keep the survey simple, making sure not to create too many different scales or formats for the questions, choosing an easy-to-read font and leaving plenty of white space on the page. Questions should be clear, and only ask about one concept at a time. Using existing, vetted (or previously proven) surveys as a model is a great idea.

The fourth step is to pilot test the survey with 10-15 members of the target audience, again using random selection. The purpose of this step is to find out if any questions are difficult to understand or misleading, and to verify that the time required to complete the survey is reasonable. Use any feedback received from participants to revise and improve the survey prior to implementation.

Fifth, select the sample. If possible, use random sampling, or send the survey to the entire target audience, if it is a small group. Most multivariate statistical analysis requires 10-12 survey or interview respondents for every barrier the grantee seeks to understand, so to investigate 5 barriers, for example, 50-60 respondents will be required. The sixth step is to conduct the survey, and the seventh step is to analyze the data. Averages and frequencies of answers, although important, do not identify differences between segments of the target audience or help to prioritize the barriers and benefits discovered. Consider obtaining assistance from a consulting firm or local university with interpreting results if necessary.

Although the process from formative research to conducting focus groups, surveys, and/or interviews adds around 6-8 weeks to the process of developing the social marketing campaign, and costs money, it will undoubtedly increase the success of a program by allowing for a full understanding of the target audience and barriers associated with the target behavior. Be sure to build support for this process, as well as an understanding and appreciation of the extra time and resources that it will require, throughout the organization and among collaborators. As Andreasen (2002) mentions, having buy-in from all levels of the organization for social marketing initiatives is essential for the success of these programs.

## SELECTING AND APPLYING TOOLS FOR BEHAVIOR CHANGE

McKenzie-Mohr and Smith (1999) provide an overview of 6 types of tools that social scientists have identified as useful in changing human behavior: commitment, prompts, norms, effective communication, incentives and removal of external barriers. A short overview of each type of tool, a description of how each is most effectively used and several examples of each are provided in Appendix C. For more information please see *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing* chapters three through eight.

## DESIGNING, PILOT TESTING AND IMPLEMENTING THE MARKETING CAMPAIGN

The Community-Based Social Marketing approach provides considerable guidance to prepare for a well-designed social marketing campaign. Using all of the steps described thus far (conducting formative research, reviewing focus group and survey results, identifying and prioritizing barriers and benefits associated with the target behavior and competing behaviors, and applying recommended tools for fostering behavior change), the design of the campaign will take shape. Ideas for specific approaches, messages, formats and spokespeople should be tested again with a focus group in a pilot study. This time, seek to find out whether the proposed message and materials will capture the attention of the target audience, and whether the message is clear and easy to understand. As before with the focus group, look for patterns and repeated themes during the focus group, and consider how the campaign may be revised to address any concerns (Weinreich 1999).

A pilot test of the campaign serves as a final opportunity to adjust the message before implementation. Pilot testing should be done on a subset of the population that is representative of the target audience, if possible, and a control group. The pilot test differs from the actual campaign only in scale; implementation and evaluation are the same as they are planned for the real campaign. The pilot study will also give staff and/or volunteers a chance to gain experience running the program (Weinreich 1999). Revise the strategy until a behavior change occurs in the target population, and consider conducting interviews with participants to understand what is and is not working. Allow for the time and resources necessary to rework the campaign if necessary (McKenzie-Mohr and Smith 1999). Once the pilot campaign proves successful, it is time to implement the full-scale campaign.

## EVALUATION

Evaluation is an essential component of a successful social marketing campaign. Evaluation begins with understanding the target audience prior to the intervention, using the process described above. Focus on fully understanding barriers to adoption of the desired behavior, and prioritize these barriers to help focus your social marketing campaign. Use observations of behavior and behavior change, rather than self-reports, whenever possible. Track changes in attitudes and knowledge in the target audience over time, but do not use these as a substitute for behavior change, or as an indication that behavior change has occurred or will occur. Create ample opportunities for feedback from representatives of the target audience, and be prepared to continue to evolve and adjust the social marketing campaign as needed to sustain behavior changes over time.

## APPENDICES

Appendix A. Literature Review and Formative Research Resources

Appendix B. Focus group and survey research resources

Appendix C. CBSM Tools

Appendix D. CBSM Planning Template and Crowd-sourced Behavior and Target Audience Database Framework

Appendix E. Sample Case Studies – Crowd-sourced Behavior and Target Audience Database

## APPENDIX A. LITERATURE REVIEW AND FORMATIVE RESEARCH RESOURCES

Title	Address/location	Description	Author/institution
<p><b>Fostering Sustainable Behavior: Community-based Social Marketing Website and Forum</b></p>	<p><a href="http://www.cbsm.com/public/world.lasso">http://www.cbsm.com/public/world.lasso</a></p>	<p>This site consists of five resources for those working to foster sustainable behaviors, such as those involved in conservation, energy efficiency, transportation, waste reduction, and water efficiency.</p> <ul style="list-style-type: none"> <li>• complete contents of the book, <i>Fostering Sustainable Behavior</i></li> <li>• searchable databases of <b>articles</b>, <b>case studies</b>, and turnkey <b>strategies</b></li> <li>• <b>discussion forums</b> for sharing information and asking questions of others</li> <li>• free registration includes notification of resources added since your last visit</li> <li>• post to the discussion forums and receive the daily discussion forum digest by email</li> </ul>	<p>D. McKenzie-Mohr, Ph.D. - Environmental Psychologist, McKenzie-Mohr &amp; Associates</p>
<p><b>Target Audience Database</b></p>	<p><a href="http://wateroutreach.uwex.edu/cpb/tad/index.cfm">http://wateroutreach.uwex.edu/cpb/tad/index.cfm</a></p>	<p>This database is a tool for identifying research-based findings about specific audiences of interest to water scientists and managers. Findings are derived from research papers describing studies that could claim to identify best education practices (BEPs) for specific audiences.</p> <p>Once you have identified the types of findings you are looking for, you can <b>refine your search</b> using one of several parameters: audience, theme (outreach techniques or strategies employed), best education practices, or citation. To see the <b>citation</b> for a specific finding or to see other findings from the same citation, click on the specific finding. Findings reference studies published from 1988 - 2004. Addition of studies published 2004-2007 is in progress.</p> <p>Featured target audiences of interest: farmers, landowners, homeowners.</p>	<p>The <b>Water Outreach Education - Facilitating Access to Resources and Best Practices</b> (BEP) Project is a collaborative effort of the USDA, National Institute for Food and Agriculture (NIFA), and other public and private clean and safe water partners. University of Wisconsin Extension, Environmental Resources Center. 2007. Target Audience Database.</p> <p><a href="http://wateroutreach.uwex.edu/cpb/tad/index.cfm">http://wateroutreach.uwex.edu/cpb/tad/index.cfm</a>. E. Andrews, PI. Database developed by D. Schneider. Content developed by E. Andrews and M. Stevens.</p>

<p><b>Tools of Change Website</b></p>	<p><a href="http://www.toolsofchange.com/en/home/">http://www.toolsofchange.com/en/home/</a></p>	<p>This site offers specific tools, case studies, and a planning guide for helping people take actions and adopt habits that promote health, safety, and/or sustainability. It will help you include in your programs the best practices of many other programs - practices that have already been successful in changing people's behavior. Includes social marketing webinars and an introductory tool for those new to social marketing:  <a href="http://www.toolsofchange.com/en/programs/social-marketers/">http://www.toolsofchange.com/en/programs/social-marketers/</a>.</p>	<p>J. Kassirer. <b>Tools of Change</b> is published by Cullbridge Marketing and Communications, 61 Forest Hill Avenue, Ottawa ON, Canada K2C 1P7  Tel: (613) 224-3800  e-mail: <a href="mailto:toolsofchange@cullbridge.com">toolsofchange@cullbridge.com</a>  Web site: <a href="http://www.toolsofchange.com/en/home/">http://www.toolsofchange.com/en/home/</a>.</p>
<p><b>Social Marketing Institute at Georgetown</b></p>	<p><a href="http://www.social-marketing.org/">http://www.social-marketing.org/</a></p>	<p>The Social Marketing Institute was created to advance the science and practice of social marketing. Provides guidance to programs, organizations, and businesses, provides training and education, carries out and disseminates research.</p>	<p>A. Andreasen, Georgetown University</p>
<p><b>Newsletters</b></p>	<ul style="list-style-type: none"> <li>• University of Wisconsin Extension Environmental Resources Center Environmental Communication and Social Marketing Newsletter: <a href="http://ecsm.uwex.edu/">http://ecsm.uwex.edu/</a>.</li> <li>• Responsive Management email newsletter: <a href="http://www.responsivemanagement.com/subscribe.php">http://www.responsivemanagement.com/subscribe.php</a>.</li> </ul>		
<p><b>Academic Journal Articles with Social Marketing Focus</b></p>	<ul style="list-style-type: none"> <li>• Social Marketing Quarterly: <a href="http://www.socialmarketingquarterly.com/">http://www.socialmarketingquarterly.com/</a></li> <li>• Journal of Environmental Psychology: <a href="http://www.elsevier.com/locate/jep">www.elsevier.com/locate/jep</a></li> <li>• Environment and Behavior: <a href="http://eab.sagepub.com/">http://eab.sagepub.com/</a></li> <li>• Journal of Environmental Education: <a href="http://www.tandf.co.uk/journals/titles/00958964.asp">http://www.tandf.co.uk/journals/titles/00958964.asp</a></li> </ul>		
<p><b>General Case Studies</b></p>	<ul style="list-style-type: none"> <li>• District Department of the Environment Watershed Protection Division. Nonpoint Source Pollution Program 2012 Annual Report. February 2013. Access online: <a href="http://www.epa.gov/reg3wapd/pdf/pdf_nps/nps_annualreports/2012/DC319AnnualReportfor2012final.pdf">http://www.epa.gov/reg3wapd/pdf/pdf_nps/nps_annualreports/2012/DC319AnnualReportfor2012final.pdf</a></li> <li>• Plant ES (Eastern Shore) Natives: <a href="http://www.deq.state.va.us/Portals/0/DEQ/CoastalZoneManagement/Regional_Native_Plant_Campaigns_Supported_by_Virginia_CZM_Program_updated_May_2014.pdf">http://www.deq.state.va.us/Portals/0/DEQ/CoastalZoneManagement/Regional_Native_Plant_Campaigns_Supported_by_Virginia_CZM_Program_updated_May_2014.pdf</a>.</li> <li>• Fostering Sustainable Development Community-Based Social Marketing Case Studies. Access online: <a href="http://www.cbsm.com/cases/search">http://www.cbsm.com/cases/search</a>.</li> <li>• The Empowerment Institute: Water Stewardship: A Program Empowering Individuals to Conserve and Protect Our Water <a href="http://www.empowermentinstitute.net/index.php/community/water-stewardship">http://www.empowermentinstitute.net/index.php/community/water-stewardship</a>.</li> </ul>		

<p><b>General Case Studies</b></p>	<ul style="list-style-type: none"> <li>• Chesapeake Club <ul style="list-style-type: none"> <li>○ Landers, J., P. Mitchell, B. Smith, T. Lehman, and C. Conner. “Save the Crabs, Then Eat ‘Em”: A culinary approach to saving the Chesapeake Bay. <i>Social Market. Quart.</i> 12(1): Spring 2006.</li> <li>○ Another summary may be found here: <a href="http://www.toolsofchange.com/English/CaseStudies/default.asp?ID=90">http://www.toolsofchange.com/English/CaseStudies/default.asp?ID=90</a>.</li> </ul> </li> </ul>
<p><b>Other Resources</b></p>	<ul style="list-style-type: none"> <li>• Kelly, M., S. Little, K. Phelps, and C. Roble. April 2012. Rapid Assessment for Outreach Programs; Fostering Environmentally Responsible Behaviors. Accessed online Oct 25, 2012 <a href="http://deepblue.lib.umich.edu/bitstream/handle/2027.42/90869/Watershed%20Outreach%20Professionals?sequence=1">http://deepblue.lib.umich.edu/bitstream/handle/2027.42/90869/Watershed%20Outreach%20Professionals?sequence=1</a>).</li> <li>• Kelly, M., S. Little, K. Phelps, and C. Roble. April 2012. Strategies for Motivating Watershed Stewardship: A Guide to Research-Based Practices. Accessed online Oct 25, 2012 <a href="http://static.squarespace.com/static/506c635e84ae04c558eae28c/t/506c791ee4b01d9450dd197c/1349286174535/">http://static.squarespace.com/static/506c635e84ae04c558eae28c/t/506c791ee4b01d9450dd197c/1349286174535/</a>).</li> <li>• Changing Public Behavior – National Extension Water Outreach Education. Access online: <a href="http://wateroutreach.uwex.edu/cpbhomepage.cfm">http://wateroutreach.uwex.edu/cpbhomepage.cfm</a>.</li> <li>• Eckl, E. Water Words that Work. <a href="http://waterwordsthatwork.com/">http://waterwordsthatwork.com/</a>.</li> <li>• EPA Getting In Step: A Guide for Conducting Watershed Outreach Campaigns. <a href="http://cfpub.epa.gov/npstbx/files/getnstepguide.pdf">http://cfpub.epa.gov/npstbx/files/getnstepguide.pdf</a>.</li> <li>• EPA Nonpoint Source Outreach Toolbox. <a href="http://www.epa.gov/nps/toolbox/">http://www.epa.gov/nps/toolbox/</a>.</li> <li>• Kiernan, N.E. 2001. Evaluating Behavior: Tipsheet #12, University Park, PA: Penn State Cooperative Extension. Available at: <a href="http://www.extension.psu.edu/evaluation/pdf/TS12.pdf">http://www.extension.psu.edu/evaluation/pdf/TS12.pdf</a>.</li> <li>• Kiernan, N.E. 2001. Crafting Behavior Questions: Tipsheet #36, University Park, PA: Penn State Cooperative Extension. Available at: <a href="http://www.extension.psu.edu/evaluation/pdf/TS36.pdf">http://www.extension.psu.edu/evaluation/pdf/TS36.pdf</a>.</li> <li>• Living by Water Conservation Marketing Tools. <a href="http://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/ecology/shoreland/marketing/conservation_action_marketing_tools_techniques.pdf">http://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/ecology/shoreland/marketing/conservation_action_marketing_tools_techniques.pdf</a>.</li> <li>• McKenzie-Mohr, D., N. Lee, P. Schultz, and P. Kotler. 2011. <i>Social Marketing to Protect the Environment: What Works</i>. Sage Publications.</li> <li>• McKenzie-Mohr, D. and W. Smith. 1999. <i>Fostering Sustainable Behavior: An Introduction to Community Based Social Marketing</i>. New Society Publishers, Gabriola Island, BC.</li> <li>• Morton, L. and S. Brown (eds.). 2011. <i>Pathways for Getting to Better Water Quality: The Citizen Effect</i>. Springer Publishing. Access online: <a href="http://www.springer.com/environment/environmental+management/book/978-1-4419-7281-1">http://www.springer.com/environment/environmental+management/book/978-1-4419-7281-1</a>.</li> <li>• Social Marketing Services, Inc. Nancy Lee. <a href="http://www.socialmarketingservice.com">http://www.socialmarketingservice.com</a>.</li> <li>• Social Marketing: Influencing Behaviors for Good. 4<sup>th</sup> Edition. Nancy Lee and Philip Kotler.</li> <li>• Wetlands Watch. 2012. Reducing Nutrients on Private Property. Evaluation of Programs, Practices and Incentives. <a href="http://www.hrpdc.org/Documents/Phys%20Planning/2012/ChesBayTMDL/FINAL_PEP-12-05_ReducingNutrientsonPrivateProp.pdf">http://www.hrpdc.org/Documents/Phys%20Planning/2012/ChesBayTMDL/FINAL_PEP-12-05_ReducingNutrientsonPrivateProp.pdf</a>.</li> <li>• Wilbur, J. Getting Your Feet Wet With Social Marketing: A Social Marketing Guide for Watershed Programs. Utah Department of Agriculture and Food. Access online: <a href="http://www.thinkbluemaine.org/docs/municipal/getting_your_feet_wet.pdf">http://www.thinkbluemaine.org/docs/municipal/getting_your_feet_wet.pdf</a>.</li> </ul>

## APPENDIX B. FOCUS GROUP AND SURVEY RESEARCH RESOURCES

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## APPENDIX C. BEHAVIOR CHANGE TOOLS

Behavior change tool	Premise	Examples	Considerations for use
<b>Commitment</b>	Individuals who agree to a small initial request are far more likely to agree to a subsequent more significant request. As many studies have shown, there is a strong internal pressure to behave consistently and to demonstrate trust and reliability within most individuals. This approach effectively allows the social marketer to get a “foot in the door” for a future relationship with an individual.	<ul style="list-style-type: none"> <li>• Ask households to sign a pledge committing themselves to watering their lawns on even or odd days, depending on their house number.</li> <li>• Ask homeowners to increase the height of their lawnmower to reduce evaporation and the need for watering.</li> <li>• Going door-to-door providing water conservation kits such as low-flow shower heads and faucet aerators, ask homeowners who wish to take a kit to allow their commitment to be advertised publicly, such as in the newspaper.</li> </ul>	Written commitments are more effective than verbal ones, and public commitments are more effective and tend to be sustained (always ask permission to make a commitment public). Group commitments are also effective, especially in groups with strong cohesion, where members care deeply about what others in the group think. Consider using commitments to help people see themselves as environmentally responsible, for example, by pointing out other positive behaviors they have while discussing a new behavior with them. Commitment is best used in combination with other social marketing tools, such as effective communication, or feedback. Commitments should only be used when people express interest in doing the behavior, and do not need to be convinced to do so. Commitment will not work if the person feels pressure to commit. Consider asking community “block leaders” to ask others to commit. This can help make seeking commitments more cost-effective by spreading out the work load.
<b>Prompts</b>	A prompt is an audio or visual cue that reminds individuals to engage in a behavior they might forget. The purpose is not to change attitudes or increase motivation, but remind individuals to do something they are already predisposed to do.	<ul style="list-style-type: none"> <li>• Posting signs near light switches reminding people to turn off the switch when they leave the room.</li> <li>• Posting signs in the parking lot of the grocery store reminding people to bring their cotton</li> </ul>	Prompts can be used for both repetitive and one-time activities. They must be noticeable and easily understood through use of graphics and text. They must be visible or heard close in time and space to the where the activity should be completed (e.g., signs reminding people to use recycling containers should be on or near the containers). Prompts are best used for encouraging positive behaviors, rather than for discouraging negative ones. Prompts work well in combination with norms and commitment. They must be

Behavior change tool	Premise	Examples	Considerations for use
		shopping bags in with them.	explicit. Slogans such as “think globally, act locally” do not remind people of a specific behavior to engage in, and are less successful.
<b>Norms</b>	Other people’s opinions can have a strong effect on individual behaviors. A new set of norms that support sustainable behaviors is integral to successfully changing human behavior. Norms affect behavior in two ways: compliance (changing behavior to receive a reward) and conformity (changing behavior to be similar to others). Modeling (seeing others doing the behavior) and social diffusion (talking about the behavior with others) are important components.	<ul style="list-style-type: none"> <li>• Communicate the number of people in a neighborhood participating in backyard composting efforts.</li> <li>• Provide a sticker for an individual to post on the window or in some other visible place that they conserve water.</li> </ul>	Norms must be visible to be successful, such as community blue box recycling. Norms must be internalized, meaning people view it as the way they should behave. Normative approaches work when people being asked to change their behavior or adopt a new lifestyle. Use norms to encourage positive behaviors rather than discourage negative behaviors.
<b>Effective communication</b>	Starts with capturing attention: make messages vivid, concrete, and personalized to target audience. Messages should be specific, easy to remember, and presented close to the area where the activity will take place. Consider incorporation of modeling of the behavior and use of social diffusion. Demon-strations or having key mem-bers of the target audience (farmers who are respected and have adopted the behavior or block leaders) talk to potential adopters is often successful. Be sure to provide feedback about the impact of new	<ul style="list-style-type: none"> <li>• Holding a forum for farmers who have adopted a BMP to discuss candidly with neighbors why they adopted the practice, demonstrate any maintenance or installation tips, and show success of the practice.</li> <li>• Create a campaign that makes it easy for people to remember how to do what you are asking them to do: watering their lawns based on</li> </ul>	Target audience attitudes, beliefs, and behavior are well understood (use information gathered during literature review, focus groups, and surveys). Using a credible, well-known, and trusted source is paramount. Personal contact is often the most meaningful way to communicate. Try out messages on members of the target audience during the pilot to see what works. Carefully consider use of fear-based messages: can be effective, but must be combined with clear suggestions about what the target audience can DO. If humans perceive themselves to have little control over a situation, they use emotion-based coping and tend not to act. If people perceive themselves to have control over a problem, they will use problem-based coping and will be more likely to take action. When framing the message, present in terms of potential loss to the individual from not acting, rather than gain as a result of acting. Carefully consider the use of one-sided vs. two-sided messages. If audience has little

Behavior change tool	Premise	Examples	Considerations for use
	behaviors to let people know they are working.	their street number, or using an acronym for remembering what can be recycled.	understanding of either side of the issue, a one-sided message may be more effective. If audience clearly understands both sides, presenting a two-sided message may inoculate them against alternate views.
<b>Incentives</b>	Incentives are rewards for performing a particular behavior. They may be monetary or other, such as social approval (contests among neighborhoods or public recognition of accomplishments). Incentives must be visible and large enough to get people's attention, but there is a point of diminishing return for most behaviors (check the literature review for similar studies for guidelines).	<ul style="list-style-type: none"> <li>• Provide loans, grants, or rebates to foster the installation of rain gardens in residential yards.</li> <li>• Provide cost share funds or maintenance assistance for farmers to install BMPs.</li> <li>• Advertise the names of people or businesses that perform a desired behavior, along with feedback about the impact of their actions.</li> </ul>	Incentives are best used when an increase in motivation is required: to either increase the frequency of a behavior already done or start a new behavior. Present incentives at the time and location that a behavior is to occur, if possible. Use to reward preferred behavior rather than to punish negative behaviors. Think carefully about using incentives if you know they will be removed in the future. Plan for ways that people will try to avoid incentives.
<b>Remove external barriers</b>	Use the literature review, focus groups, and surveys to ascertain what external barriers are significant for your target audience. Examples include existing regulations and lack of infrastructure or funding. Keep in mind that use of the other behavior change tools mentioned above will not be beneficial if substantial external barriers exist. Determine whether it is realistic to overcome these barriers or not. Consider that some external barriers are a matter of perception, not reality, and may	<ul style="list-style-type: none"> <li>• Providing payments to farmers who adopt BMPs to assist with maintenance costs.</li> <li>• Providing assistance (financial and educational) for homeowners who are interested in installing rain gardens.</li> </ul>	Make the sustainable behavior more convenient and less expensive than competing behaviors.

Behavior change tool	Premise	Examples	Considerations for use
	<p>simply require providing the target audience more information and possibly experience with the behavior to overcome. Strategies for removing external barriers are unique to each situation.</p>		
<p>Adapted from: McKenzie-Mohr, D. and W. Smith. 1999. <i>Fostering Sustainable Behavior: An Introduction to Community-based Social Marketing</i>. New Society Publishers, Gabriola Island, BC, Canada.</p>			

## APPENDIX D. CBSM PLANNING TEMPLATE AND CROWD-SOURCED BEHAVIOR AND TARGET AUDIENCE DATABASE FRAMEWORK

**How to use these tools:** These tools were developed to assist grantees in planning for measurable success in the use of Community Based Social Marketing to facilitate behavior change. By organizing campaigns steps in similar ways, and using standard language to document methods, successes, and lessons learned, it will be feasible to share stories and benefit from one another's experiences, specifically dealing with water quality in the Chesapeake Bay and tributaries. Eventually, it may be that basic formative research and literature reviews for well-understood and documented behaviors and audiences will no longer be necessary in the Bay Watershed. Their promotion will be understood and simplified.

**The Planning Template** is designed to do two things: 1) assist with outlining a campaign and developing a plan for putting the CBSM process into action and 2) documenting the progress, success, and lessons learned from the campaign. Fields in the planning template will be used to populate the Crowd-sourced Behavior and Target Audience Database (discussed next), which will be available online after development.

CBSM PLANNING TEMPLATE:

### **SELECT BMP: Target Behavior**

**1. What behavior do you wish to encourage?**

*If possible, pick a behavior that:*

- has a high likelihood of adoption*
- is high impact*
- many people are not currently doing*

**2. Are there component behaviors?** *Component behaviors make up more complex behaviors (e.g., building, planting with appropriate species and maintaining a rain garden= "installing a rain garden")*

**3. Is the behavior one-time or continuous?**

**4. What is/are the possible competing behaviors?**

**5. How do you know?**

### **KNOW YOUR AUDIENCE: Target Audience**

**6. Who is your target audience?** *(Who are you trying to reach?)*

7. **How can your audience be segmented, or made more specific?** *(if you are focusing on multiple audiences, prioritize them)*
8. **What do you know about your audience's demographics? Media preferences?**

**KNOW YOUR AUDIENCE: Barriers and Benefits**

9. **What steps have you taken, or do you plan to take to understand your target audience (e.g., review of other studies, surveys, conversations, focus groups)?**
  
10. **What have you learned about barriers to adopting the new behavior?**
  
11. **What external factors affect your target audience's ability to adopt this behavior (e.g., regulations, policy, infrastructure, social norms)?**
  
12. **What have you learned about benefits of continuing to do the competing behavior?**
  
13. **What would you still like to learn or ask?**

**MARKETING YOUR BMP: Strategies**

14. **A variety of tools are available to include in CBSM campaigns. Think carefully about *why* you are choosing the tools you choose. What tools will address specific barriers?**

**Tools (be selective!):**

- Communication
- Prompts
- Norms
- Commitment
- Incentives
- Removal of external barriers

15. **Primary messages** *(What is your primary message? Have you pilot tested it to make sure it resonates with your target audience? What media outlets work?)*

16. **Place** (*Where and how does it happen? Is it convenient for your audience?*)

17. **Products** (*What are you providing your target audience? Can be giveaways, service, recognition, rebate, etc.*)

18. **Trade off/cost?** (*What is someone giving or giving up to buy-in, participate, adopt? How can you minimize “costs” or barriers?*)

### **MEASURING SUCCESS: Evaluation Plan**

19. **How did you measure change?** *Describe your approach and the number of participants you gathered data for.*

20. **If possible, please summarize the following from your campaign:**

- Outputs** (*tangible products or things you produced*):
  
- Outcomes** (*changes in knowledge, attitudes or behaviors*):
  
- Impacts** (*environmental or water quality benefits*):
  
- Return on investment** (*what did it cost to change a singular behavior*)?

### **PROJECT SUMMARY: Results/Advice**

21. **What worked?**

22. **What would you do differently next time?**

23. **Snapshot of campaign and success:**

- In a few points, briefly explain how your campaign worked and the results.**

□ **If the campaign is still in progress, what success will look like?**

CROWD-SOURCED BEHAVIOR AND TARGET AUDIENCE DATABASE – CBTAD

There is great demand for a crowd-sourced CBSM case study database, as many organizations are working to promote similar behaviors to similar target audiences. The entire Chesapeake Bay Watershed community will benefit from sharing knowledge, tools, and lessons learned with each other. Development of the database is a work in progress. Currently, there are few well-developed and implemented CBSM campaigns in the watershed, but this is changing. With the creation and use of the database (entering active or completed campaigns, and use of information entered by others), we believe that implementing CBSM will become less challenging, and more attractive, thus spurring even more organizations to implement CBSM for increased adoption of behaviors beneficial to water quality. The database will also enable better accounting of campaigns and their cumulative impacts across the watershed.

The framework is presented here. We make the following recommendations based on our understanding of what will work best at this point, but know that this tool will evolve and benefit from the input, work and significant experience of the group proposed to take the framework from a blueprint to a functioning online database. Based on work conducted in partnership with the CBSM Technical Assistance Provider pool and training workshops in 2013, we propose that this group include Jamie Baxter and Kacey Wetzel with the Chesapeake Bay Trust, Steve Raabe with Opinionworks, and grantees who have a strong understanding of implementing CBSM on the ground, such as Suzanne Etgen with the Watershed Stewards Academy. We also propose vetting and pilot testing this framework with a variety of individuals working with CBSM to be certain the design and function is easy to understand and use, ensuring it's success.

**Recommendations:**

- **Hosting.** We suggest that the database be hosted through *Chesapeake Commons* (<http://www.chesapeake-commons.org>) due to the familiarity and accessibility of this site to organizations across the Watershed. Future mapping and data visualization components may be added in the future.
- **Entry Interface.** We suggest an interface similar to Survey Monkey or Qualtrix for organizations to enter their campaign summaries, with clearly explained fields. Options to upload supporting documents such as survey tools, interview questions, and media messaging campaigns should be available. We suggest word limits for each field to encourage grantees to be as concise and clear as possible.
- **Management/Quality control.** Data collected through the entry interface will need to be vetted and organized by a knowledgeable individual or panel to ensure that only high quality information is included in the database.

- **Search Interface.** Once information is entered, we suggest the data be searchable and sortable by target behavior and target audience. Search results could be provided in two ways: a pdf report format summarizing an individual campaign or in a more “raw” table format where a viewer could browse fields from multiple campaigns focusing on the same audience and behavior at once.
- **Promotion.** For it to serve as a valuable resource, the database will need to be promoted by multiple funding agencies. We suggest advertising the database and emphasizing that it will only be as powerful as the users make it. Demonstrating it at the Watershed Forum, NFWF Ag Networking Forum, Stormwater Partners’ Retreat and other events will be beneficial. If possible, make use of the database required as part of grant reporting requirements.
- **Fields.** As mentioned, the following fields will be extracted from the planning template to compose the database. These are the fields we suggest be included at this time:
  - **Campaign Snapshot**
    - **Title**
    - **Organization/contact person and contact information**
    - **Abstract/summary of campaign to be featured during searches**
    - **Lessons learned**
  - **Successes/what worked**
  - **Target behavior/BMP (and key words)**
  - **Target audience**
  - **Barriers and benefits summary**
    - **Methods for data collection**
    - **Summary of findings**
    - **Optional: Upload survey, focus group or interview questions or tools**
  - **Strategy summary**
    - **Messages and media used**
    - **CBSM tools**
    - **Evaluation strategy**
    - **Optional: Upload samples (evaluation tools, marketing materials)**
- Several case studies are included in Appendix E. to illustrate how the template and database work together.

## APPENDIX E. SAMPLE CASE STUDIES: CROWD-SOURCED BEHAVIOR AND TARGET AUDIENCE DATABASE

<p><b>Campaign Snapshot</b></p> <ul style="list-style-type: none"> <li>• <b>Title</b></li> <li>• <b>Organization/contact person</b></li> <li>• <b>Summary</b></li> <li>• <b>Lessons learned</b></li> </ul>	<p><b>Leaves are a Pain in the Drain/Watershed Stewards Academy Leaf Campaign</b>  Suzanne Etgen, Anne Arundel Watershed Stewards Academy  <a href="mailto:setgen@aacps.org">setgen@aacps.org</a></p> <p><b>Summary:</b>  This case study was a collaboration with four Master Watershed Stewards and a grant from the Chesapeake Bay Trust with significant in-kind technical assistance from Opinionworks@. Using a survey, several focus groups, and observation of leaf litter coverage, a campaign was designed to encourage homeowners in Ward 1 of Annapolis to bag, mulch, and compost leaves from yards and adjacent impervious surfaces rather than thinking the city would vacuum them (practice discontinued several years ago) or doing nothing. Barriers to bagging leaves included beliefs that leaves are natural, that other people are the problem, that one yard won't make a difference, and that city should pick up leaves.</p> <p><b>Lessons learned:</b></p> <ul style="list-style-type: none"> <li>• Large investment of time is needed for these campaigns and for evaluation.</li> <li>• A longer implementation period for tool dissemination (our mini pilot involved only 4 weeks of tool dissemination before evaluation).</li> <li>• Feedback to residents on how they are doing in clearing leaves.</li> <li>• More person to person contact – via neighbor champions.</li> </ul>
<p><b>Target behavior/BMP</b></p>	<p>Remove leaves and debris from hard surfaces on and adjacent to property</p> <p>Key words/phrases: leaf removal, storm drains, urban stormwater</p>
<p><b>Target audience</b></p>	<p>General: Homeowners</p> <p>Specific: Residents who care for their yards in Ward One Annapolis; 97% white; 39% male, 61% female; 57% are 55 years old or older; living in homes average of 12.7 years.</p>
<p><b>Barriers and benefits summary</b></p> <ul style="list-style-type: none"> <li>• <b>Methods for data collection</b></li> <li>• <b>Summary of findings</b></li> </ul>	<p>Survey (n=44)  2 focus groups (inside and outside Ward1); used to test messages with target audience  Observation/documentation of leaf cover</p> <p><b>Competing behaviors:</b> raking leaves into the street (as residents did before leaf vacuuming was discontinued by the city a few years ago), doing nothing, and clearing leaves from their own property, but not adjacent public impervious spaces.</p> <p><b>Barriers</b></p>

	<ul style="list-style-type: none"> <li>Leaves aren't a big deal. They are natural, aren't they? They can't possibly be causing such a problem!</li> <li>"I'm already doing this, the other people are the problem!"</li> <li>The City <i>does or should</i> pick up leaves.</li> <li>"I can't make a difference."</li> </ul> <p><b>Benefits/Motivators</b></p> <ul style="list-style-type: none"> <li>Sense of Pride &amp; Responsibility</li> <li>Curb Appeal</li> <li>Remove Safety Hazards</li> <li>Lead by Example</li> <li>Environmental Awareness – <i>wanting to know more</i></li> <li>Improve Water Quality</li> </ul> <p><b>External factors:</b> people still believed that the city (Annapolis) vacuumed leaves.</p>
<p><b>Strategy summary:</b></p> <ul style="list-style-type: none"> <li><b>Messages and media used</b></li> <li><b>CBSM tools</b></li> <li><b>Evaluation</b></li> </ul>	<p><b>Messages:</b> Based on focus group findings, chose "Bag it, Mulch it, Compost it." Your leaves in the water aren't natural. In the water, decaying leaves use 200% more oxygen than on land.</p> <p><b>Media:</b> door hanger, magnet and emails (4) to community listserv</p> <p><b>Other methods:</b> door-to-door canvassing by volunteers, community meeting, event at community church, distributed paper leaf collection bags with coupon for more collection bags</p> <p><b>CBSM Tools: Communication, Prompts, Commitment, Incentives</b></p> <p><b>Evaluation:</b> To create an effective evaluation program, the locations of pledges received in Ward One were mapped to determine streets on which there was a concentration of intention to engage in the target behavior. Four test streets with high concentrations of leaf pledges were selected for evaluation, along with four control streets from a different Annapolis community (outside of Ward One) with similar leaf cover and impervious surface. For 4 consecutive weeks, Stewards evaluated the leaf cover on these streets. In teams of two, they rated two locations on each street for leaf cover on a 1–5 rating scale, in which 1 indicated sidewalk and road pavement that was fully visible and 5 indicated sidewalk and pavement that was invisible/covered with leaves. Observations were made each Tuesday afternoon in November because leaf pick up in the area was scheduled for Wednesday. The number of bags filled with leaf debris set out on the curb for collection was also noted.</p> <p>Although a slight percentage decrease in leaf coverage was observed in Ward One versus the control streets, the difference was not statistically significant (30% leaf coverage versus 37%). One possible</p>

	<p>explanation for this is that there were major wind events on each of the four Tuesdays on which observations were made, increasing leaf cover on Ward One streets. Another possible conclusion is that the length of time of the campaign was too brief to measure a behavior change. During the outreach events, we were able to anecdotally evaluate the response to some of the tools. Overall, the more affluent residents of Ward One did not respond as favorably to free leaf bag, coupon, or magnet as did those in less affluent areas of Ward One. It was also unclear how many people actually read the e-mails that were distributed via the community listserv, but during the canvas event, more than 50% of the people canvassed knew something about the project, indicating that they had probably read it in the e-mail. The most effective tool seemed to be the face-to-face conversations of Stewards with residents. Through these conversations, more than 95% of the residents made a written commitment to clear leaves from hard surfaces on and adjacent to their private property.</p>
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<p><b>Campaign Snapshot</b></p> <ul style="list-style-type: none"> <li>• Title</li> <li>• Organization/contact person</li> <li>• Summary</li> <li>• Lessons learned</li> </ul>	<p><b>Clear Creeks: Our Water, Our Heritage, Our Pride</b></p> <p><b>Gunpowder Valley Conservancy</b></p> <p><b>Peggy Perry GVC Clear Creeks Project Manager</b></p> <p><a href="mailto:little-owl@msn.com">little-owl@msn.com</a></p> <p><b>Summary (campaign in progress):</b></p> <ul style="list-style-type: none"> <li>• It is a 2-year campaign in the Middle River and Tidal Gunpowder watersheds. (1/1/2-13 – 12/31/2014).</li> <li>• We offer 2 kinds of conservation landscapes: Bayscapes and Edible Landscapes.</li> <li>• We offer cost sharing and free technical assistance to homeowners who want to install these conservation landscapes.</li> <li>• As of June 19, 2014 we have installed 2 Bayscapes; goal is 6 by 12/14.</li> <li>• As of June 19, 2014 we have installed 5 edible landscapes; goal is 8 by 12/14.</li> </ul> <p><b>Lessons learned:</b></p> <p>The best way to get people involved is to work with the local community associations and get local community leaders to promote the campaign and</p>
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	<p>to personally invite members to get involved. Cost-sharing practices, technical assistance, working with community associations to promote practices, community workshops and community restoration activities all worked well.</p>
<p><b>Target behavior/BMP</b></p>	<p>Replacing lawn with native plants, conservation landscaping, edible landscapes  Key words: native plants, conservation landscaping, bay scaping, edible landscaping, cost-share incentives, educated women (as adopters)</p>
<p><b>Target audience</b></p>	<p>General: Homeowners</p> <p>Specific: Homeowners in the Middle River and Tidal Gunpowder watersheds; From a prior social marketing study of the area, we learned that educated women age 45 to 65 are the most likely adopters. So we focused our marketing literature to that population.</p>
<p><b>Barriers and benefits summary</b></p> <ul style="list-style-type: none"> <li>• <b>Methods for data collection</b></li> <li>• <b>Summary of findings</b></li> </ul>	<p><b>Component behaviors:</b> The adopter first allows a yard assessment and learns the requirements for a conservation garden, then if selected, must learn about native plants, choose the plants they desire in their garden design, ideally help with the design of garden layout, be willing to allow garden to be a “demonstration site” for neighbors during garden tours via project, and agrees to share their experience, lessons learned and why they added this behavior. One-time installation and continuous maintenance as well as potential demonstration sites, which encourages proper maintenance as well. More plants can be added over time.</p> <p><b>Competing behaviors:</b> Having a lawn (grass). Planting non-natives or invasive plants. Having a lawn is a very common practice. And planting non-native ornamentals is a common practice; in addition not all nurseries sell native plants. Clay soils exist in some locations which requires amending soils for plants to thrive. Some owners do not want this challenge and prefer to keep their lawns. It probably seems easier to keep having a lawn if that is what you have always done.</p> <p><b>External factors:</b> social norm to have a lawn/grass</p> <p><b>The top 3 barriers are:</b></p> <ol style="list-style-type: none"> <li>1. Knowing what to plant.</li> <li>2. The cost to install and mulch.</li> <li>3. Concern over how it will look.</li> </ol>

<p><b>Strategy summary:</b></p> <ul style="list-style-type: none"> <li>• <b>Messages and media used</b></li> <li>• <b>CBSM tools</b></li> <li>• <b>Evaluation</b></li> </ul>	<p><b>Messaging:</b> Did market research with a marketing firm with grant from Chesapeake Bay Trust. Here are our messages addressing the top 3 barriers:</p> <ul style="list-style-type: none"> <li>• We can provide technical assistance so you will know what to plant.</li> <li>• There are cost share opportunities that make it more affordable.</li> <li>• Native plants are beautiful and beneficial.</li> </ul> <p><b>Media:</b> We also determined that the audience prefers receiving information from the mail with a direct link to our website, then area newspapers, community newsletters, and flyers. Thus we focused on those types of marketing venues.</p> <p><b>Other methods:</b> We offer free technical assistance and will pay 80% of the cost of a conservation landscape. Local community associations, in partnership with us, have recognized community members for adopting new behaviors. We provide the opportunity for community building (forming new friendships) via our community workshops. Brochures, flyers, annual educational project newsletters, website, workshops, garden tours, Bay-Wise volunteer Steward parties, Bay-Wise yard certification block parties, community tree plantings, community stream clean ups, 4<sup>th</sup> of July community parade project float.</p> <p><b>Tools:</b></p> <p>Communication, Norms, Commitment, Incentives, Removal of External Barriers</p> <p><b>Evaluation:</b></p> <p>We conduct immediate workshop surveys to determine if viewpoints changed, and 1 month and 6 month follow up surveys to determine if person installed BMPs in past, if they installed new BMPs as a result of project, and if not, we offer more guidance and free tech service to help them overcome barriers. As of June 19, 2014 we have installed 2 Bayscapes; goal is 6 by 12/14. As of June 19, 2014 we have installed 5 edible landscapes; goal is 8 by 12/14.</p>
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