

Capisic Brook Watershed Landowner Survey

Final Report

Prepared By: Cumberland County Soil & Water Conservation District

Project Start Date: August 2010

Project Completion Date: June 2010

Project Purpose

The goal of the Capisic Brook Watershed Landowner Survey was twofold. The data gathered through the survey is aiding in the development of the Capisic Brook Watershed Management Plan, a project being undertaken by the City of Portland and Woodard and Curran, and funded by the Maine DEP through 604(b) federal stimulus money. The information helped to identify barriers to implementing residential best management practices to address stormwater and to develop targeted marketing strategies to promote stormwater-friendly behaviors. In addition, the materials developed and process carried out will serve as a model for other municipalities, since the survey was designed to be easily tailored for use in other watersheds.

Survey Process

The City of Portland contracted with the Cumberland County Soil and Water Conservation District (CCSWCD) to design and carry out the landowner survey. CCSWCD and the City of Portland completed the contract in September 2009.

Diane Gould of the US Environmental Protection Agency facilitated the development of the project's Quality Assurance Project Plan (QAAP). The QAAP helps to ensure that quality data is obtained by outlining the process through which data is to be collected.

Staff from CCSWCD drafted the survey instrument and provided it to project partners for comment. Partners included representatives from the City of Portland, Maine Department of Environmental Protection, Casco Bay Estuary Partnership and Woodard and Curran, as well as social marketing consultant, Eric Eckl. Their feedback and suggestions were incorporated into the survey instrument, and the draft was once again distributed for comment. The survey instrument was finalized in January 2010 (Appendix A).

Once the survey instrument was complete, CCSWCD staff transferred it to web-based survey software available at www.surveymonkey.com. The instrument was scripted to help insure surveyors delivered the survey questions consistently in an effort to avoid biasing participants' responses. CCSWCD staff tested the survey instrument and script by randomly calling residents in the greater Portland area and asking them to take the survey. Minor adjustments were made to the survey instrument and script as a result of this testing.

The City of Portland provided CCSWCD with a mailing list of all landowners in the Capisic Brook Watershed. CCSWCD edited the list to remove commercial landowners and duplicate records. Survey Sampling International (SSI) was hired to generate a phone list based on the addresses provided by the City of Portland. SSI was able to supply phone numbers for 1252 records of the 2017 records provided. The missing 765 records are believed to be unlisted numbers and households without landlines.

Paid interns were hired to conduct the survey. CCSWCD staff provided a brief training that covered the goals of the survey project and stressed the importance of following the provided script as closely as possible to prevent biasing the participants' responses. The survey took place over four Saturdays in February and March. The Maine Department of Environmental Protection provided space in their Portland office to conduct the phone survey. Each landowner on the call list was contacted and asked to complete the survey. Those numbers where there was no answer were recalled at least twice and often three times in an effort to reach as many residents as possible.

Collected data were reviewed periodically throughout the survey process to ensure proper documentation of responses and to get a sense of who were being reached through the survey. Once the survey was complete, CCSWCD staff and Eric Eckl reviewed and analyzed the collected data.

Changes in Project Scope

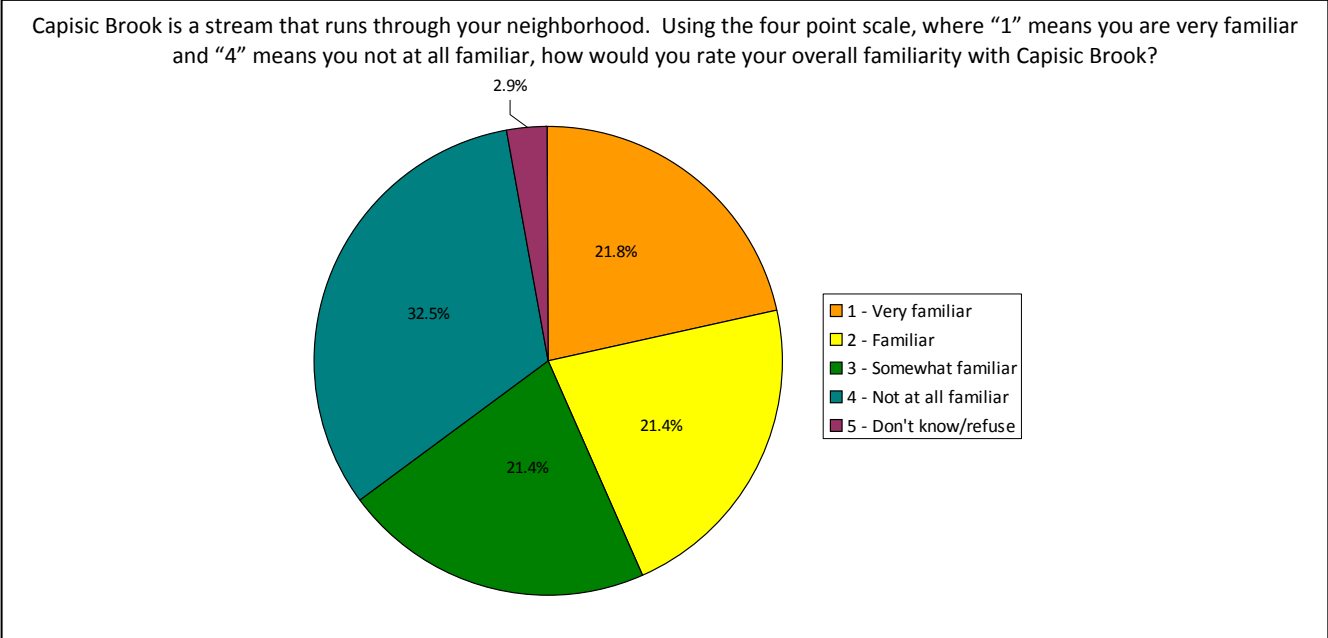
The original Capisic Brook Watershed Landowner Survey workplan called for a mailed survey. However, staff discovered that a phone list could be generated from the mailing list provided by the City of Portland. The proposed change in survey method was approved by the City of Portland and Casco Bay Estuary Partnership.

Survey Results

This survey was designed determine people's awareness of Capisic Brook, as well as to collect information about the behaviors landowners are currently doing on their properties that may be impacting the Brook. The survey was also used to determine where residents of the Capisic Brook Watershed learn information about their community.

Analysis of the survey results indicates that more than 50% of respondents lack knowledge of Capisic Brook, and nearly one-third (32.5%) of those surveyed report that they are not at all familiar with the Brook (figure 1). This points to a need for basic education and outreach about the Brook in an effort to inspire residents to take ownership of Capisic Brook.

Figure 1. Respondents' familiarity with Capisic Brook.



Eric Eckl of Water Words that Work analyzed the data to determine behaviors landowners are currently doing that may be impacting the Brook and which outreach methods should be used to change the identified behaviors. Eric is using this information to develop a social marketing plan as part of the Capisic Brook Watershed Management Plan, which is being funded by the Maine DEP through 604(b) federal stimulus money. Please see Appendix B for Eric’s summary of his analysis.

Project Outcomes

- Better understanding of Capisic Brook Watershed landowners’ awareness of Capisic Brook and behaviors impacting the health of Capisic Brook.
- Model survey instrument for use in other urban watersheds. The instrument is available at www.thinkblumaine.org/toolbox.

Lessons Learned

While staff were satisfied with the number of responses received through the phone survey, the phone list generated from the provided mailing list excluded nearly 38% of the total number of landowners in the watershed. These excluded landowners likely had unlisted phone numbers or lacked a land-line. To correct this issue in future surveys, a hybrid phone and mailed survey could be conducted. Where phone numbers are available, residents would receive a phone call asking them to participate in the survey. After the phone portion of the survey is complete, a mailing could be sent to all residents asking them to visit a website to participate in the survey or call a local phone number to request a hard copy of the survey. The first question on the survey would ask participants if they had participated in a phone survey about water quality issues over the past month. If they respond yes, the survey would end; if they respond no, the survey would continue. This hybrid method would help fill a portion of the gap that may exist due the exclusion of a portion of the population.

As mention above, CCSWCD staff tested the survey instrument to ensure that the questions were clear and easily understood. Despite modifications being made as a result of the testing, it appeared there was still some confusion among survey participants. Surveyors provided feedback about stumbling points in the survey to CCSWCD staff, and staff also reviewed the participants’ responses to make sure the responses made sense in the context of the questions that were asked. For example, in a question that asked where water that flows into storm drains goes, the choices were sewer, water body, don’t know/refuse and other. Some responses indicated a specific water body (e.g. Casco Bay, Capisic Brook, etc.), and the surveyor marked the response as “other.” There were similar issues with other questions in the survey instrument that became clear after the survey went live and could not be modified.

Fortunately, these nuances likely did not have a great impact on the survey results. However, the version that is available on the Think Blue Maine website has been changed slightly to make it more clear, both for those taking the survey and those administering it.

Budget Summary

	Grant	Non-Federal Match	Total
Funds Originally Allocated:	\$ 10,941.00	\$ 4,848.75	\$ 15,789.75
Funds Expended:	\$ 10, 941.00	\$ 4,909.15	\$ 15,850.15
Funds Remaining:	\$ 0.00	\$ - 60.40	\$ - 60.40

1. Introduction

* 1. Please record phone number prior to calling.

2. This person does not reside in Portland.

[jn](#) [Chick here](#)

Introduction:

Hello my name is _____; I am working with the City of Portland to conduct a survey about water quality issues. Would you be willing to spend 10 minutes to take the survey?

All responses will be kept confidential and you will not be identified with any of your responses. There are no right or wrong answers; I am simply here to record your viewpoints.

3. Using a 4-point scale, where “1” means excellent “4” means poor, how would you rate the overall health of the streams and rivers in your area?

	1	2	3	4	Don't know/refuse
CHOOSE ONE:	jn	jn	jn	jn	jn

4. Capisic Brook is a stream that flows through your neighborhood. Again, using the 4-point scale, where “1” means you are very familiar and “4” means you are not at all familiar, how would you rate your overall familiarity with Capisic Brook?

	1	2	3	4	Don't know/refuse
CHOOSE ONE:	jn	jn	jn	jn	jn

5. Storm drains are the grates on the side of the road that collect rain water and snow melt. Where does the water go that flows into the storm drains in your neighborhood?

DO NOT READ ANSWERS; MULTIPLE ANSWERS OK

- Sewer (Sewage treatment plant, wastewater treatment plant)
- Waterbody (stream, brook, river, ocean, bay)
- Don't know/refuse
- Other (please specify)

6. What do you think are the most common pollutants in the rivers and streams in your area?

DO NOT READ ANSWERS; MULTIPLE ANSWERS OK

- Trash (litter)
- Soil (erosion, dirt)
- Oil & gas
- Chemicals
- Fertilizer
- Pesticides
- Nothing
- Don't know/refuse
- Other (please specify)

2. Outreach

1. I am going read a list of ways you may learn of issues, events and trends taking place in your community. Again using a 4-point scale, where “1” means very important and “4” means not at all important, please rate the following sources of information:

	1	2	3	4	Don't know/refuse/not applicable
TV	jñ	jñ	jñ	jñ	jñ
Radio	jñ	jñ	jñ	jñ	jñ
Newspaper	jñ	jñ	jñ	jñ	jñ
The Internet	jñ	jñ	jñ	jñ	jñ
Newsletters and Brochures	jñ	jñ	jñ	jñ	jñ
Your neighborhood, homeowner or condo association	jñ	jñ	jñ	jñ	jñ
Communication with friends or neighbors	jñ	jñ	jñ	jñ	jñ
Postcards sent to your home	jñ	jñ	jñ	jñ	jñ
Your church	jñ	jñ	jñ	jñ	jñ
Notices sent home from your child's school	jñ	jñ	jñ	jñ	jñ
Inserts in your tax, water or other utility bills	jñ	jñ	jñ	jñ	jñ
Booths at farmers' markets, festivals or other community events	jñ	jñ	jñ	jñ	jñ
Elected officials who represent your district	jñ	jñ	jñ	jñ	jñ
Your personal observaitons	jñ	jñ	jñ	jñ	jñ

3. Water Quality Improvement

1. Using a 4-point scale, where “1” means it has your highest level of support and “4” means you do not support it at all, please rate the following techniques for promoting improved water quality...

	1	2	3	4	Don't know/refuse
General pollution prevention information in newspapers, TV and radio	jñ	jñ	jñ	jñ	jñ
Mailing information to individuals	jñ	jñ	jñ	jñ	jñ
Sponsoring volunteer cleanups	jñ	jñ	jñ	jñ	jñ
Offering trainings that teach you how to install water quality improvement measures on your property	jñ	jñ	jñ	jñ	jñ
Providing money-saving deals for the purchase of environmentally-friendly products	jñ	jñ	jñ	jñ	jñ
Volunteers coming to your home to install measures to improve water quality for free or at a reduced cost	jñ	jñ	jñ	jñ	jñ

If the City of Portland wanted to clean up Capisic Brook, what would your recommendation be?

4. Pet Waste 1

1. Do you own a dog?

DO NOT READ ANSWERS

Yes

No

Don't know/refuse

5. Pet Waste 2

1. Who is the person in your household who most often walks the dog?

READ THE ANSWERS; CHOOSE ONLY ONE

Male head of household

Female head of household

Child

Nobody

Don't know/refuse

Other (please specify)

2. How do you dispose of your dog's waste?

DO NOT READ ANSWERS; CHOOSE ALL THAT APPLY

Throw it in the trash

Flush it down the toilet

Put it in storm drain

Throw it in the woods

Don't pick it up (leave it on the lawn/sidewalk)

Don't know/refuse

Other (please specify)

6. Vehicle Washing

1. Who is the person in your household who most often washes your vehicle?

READ THE ANSWERS; CHOOSE ONLY ONE

Male head of household

Female head of household

Child

Nobody

Don't know/refuse

Other (please specify)

2. Where do you most often wash your vehicle?

DO NOT READ ANSWERS (IF THEY RESPOND "AT HOME" PLEASE ASK, "WHERE ON YOUR PROPERTY DO YOU WASH YOUR VEHICLE?"); CHOOSE ALL THAT APPLY

In the driveway

In the street

On the lawn

At a carwash

Don't know/refuse

Other (please specify)

7. Lawn Care 1

1. Who is the person in your household who most often mows the lawn?

READ THE ANSWERS; CHOOSE ONLY ONE

Male head of household

Female head of household

Child

Hired person/company

Nobody

Don't know/refuse

Other (please specify)

2. Are pesticides or fertilizers applied to your lawn?

DO NOT READ ANSWERS

Yes

No

Don't know/refuse

8. Lawn Care 2

1. Who most often applies fertilizer or pesticides?

READ THE ANSWERS; CHOOSE ONLY ONE

Male head of household

Female head of household

Lawn care company

Don't know/refuse

Other (please specify)

9. Yard Waste

1. How do you dispose of your yard waste (grass clippings, fallen leaves, etc.)?

DO NOT READ ANSWERS; MULTIPLE ANSWERS OK

- Dispose of yard waste along stream banks
- Sweep yard waste into the street
- Compost yard waste
- Dispose of yard waste through municipal trash pick-up
- Don't know/refuse
- Other (please specify)

10. Gutter Downspouts

1. Where does the water go that comes off your roof when it rains?

DO NOT READ ANSWERS; MULTIPLE ANSWERS OK

- Into the road
- Into the driveway
- Onto the lawn
- Into a rain barrel
- Into a rain garden or other landscaped area
- Into a dry well (crushed stone hole, french drain)
- In a pipe underground
- Into the sewer or storm drain system
- Don't know/refuse
- Other (please specify)

11. Downspout Disconnect

1. Again, using a 4-point scale, where "1" means very willing and "4" means not at all willing, please rate your willingness to disconnect your downspouts from the underground pipe and have the water drain to the following locations:

	1	2	3	4	Don't know/refuse
Your lawn	jn	jn	jn	jn	jn
A landscaped garden designed to collect water	jn	jn	jn	jn	jn
A barrel that collects water from your roof	jn	jn	jn	jn	jn
A stone-filled basin designed to collect water	jn	jn	jn	jn	jn

2. Using the 4-point scale, where "1" means it has your highest level of support, and "4" means you do not support it at all, please rate the following ideas to encourage disconnecting downspouts from the underground pipe:

	1	2	3	4
Monetary incentive	jn	jn	jn	jn
A service that will disconnect them for you for a fee	jn	jn	jn	jn
Information & instructions for disconnecting them yourself	jn	jn	jn	jn

Are there other options you would support?

12. Demographics

Lastly, I just have a few questions for classification purposes

1. How many years have you lived at your current residence?

2. Do you rent or own your home?

Rent

Own

Don't know/refuse

3. What is the highest level of education you have completed?

READ LIST; CHOOSE ONLY ONE

High School or less

Some college or trade school

4-year college degree

Graduate degree or more

Refuse

4. Which of the following categories best describes your age?

READ LIST; CHOOSE ONLY ONE

18-24

25-34

35-44

45-64

Over 64

Refuse

5. Which of the following categories best describes your annual household income before taxes?

- Under \$18,000
- \$18,000 - \$30,000
- \$30,000 - \$50,000
- \$50,000 - \$75,000
- \$75,000 - \$100,000
- Over \$100,000
- Don't know/refuse

That concludes our survey. Thank you very much for your participation.

*** 6. Record gender - DO NOT ASK**

- Male
- Female
- Unable to determine



Memorandum

To: Zachary Henderson, Woodard & Curran
 From: Eric Eckl, Water Words That Work, LLC
 Re: Initial Thoughts on Target Audiences/Behavior
 Date: 4/08/2010

This memo synthesizes the telephone poll and demographic summary to highlight our potential behavior targets. My goal here is to set the stage for tomorrow -- providing a basis to discuss the question productively.

After reviewing the poll results and re-reviewing the demographic profile I prepared back in March, we do not have a simple, obvious target to aim our pollution prevention habits at. All of our likely targets have various pros and cons.

First, the numbers:

Basic Criteria	% of Households	# of Households	Behavior We Want to Change	% Who Report This Behavior	# Whose Behavior We Desire To Change
Own Car	90%	2430	Wash on driveway, street, or refuse to answer	43%	1,045
Own Home/Yard	60%	1,620	Roof runoff goes to impervious surface or direct to storm drain	39%	632
Own Home/Yard	60%	1,620	Acknowledge they apply pesticides/fertilizer, or refuse to answer	36%	583
Own Home/Yard	60%	1,620	Acknowledge they dispose of yard waste improperly, or refuse to answer	11%	178
Own Dog	32%	864	Leave on sidewalk, throw in woods, or refuse to answer	14%	121

Car Washing. It's our most broadly distributed target behavior, by far. Both renters and owners own cars and wash them. However, most don't wash them that often. Local car washes would probably be eager to partner with us to promote use of their services.

Roof Runoff. A meaningful number of homeowners are routing their roof runoff more or less directly into Capisic Brook. However, survey findings suggest this would be a relatively difficult behavior to change. W&C's research suggests that soils are not particularly absorbent even if we were successful.

Fertilizer/Pesticide. Not that many households actually fertilize, but the water quality impacts may push this issue to the top.

Yard Waste. Only a handful of households actually dispose of yard waste improperly.

Dog Waste. Dog owners are a minority, and most report that they pick up after their pets. Although few admit to leaving their dog waste on the ground, the environmental impact is profound -- because it is an everyday occurrence. Most residents report that their personal observations are the main way they learn what's up in the community -- and dog doo is visible.

Note: Demographic Research vs. Telephone Survey

The telephone poll provides excellent insight into the behavior and attitudes of Capisic Brook residents -- but only a portion of them.

More than 95% of those who participated in the survey reported that they own their own home. According to the U.S. Census figures, the actual % of watershed residents who own their home is a little less than 60%. **This means the survey results are skewed: They paint a picture of a population that is older, wealthier, and more highly educated than the actual population of the watershed.**

More than 2/3 of those who completed the survey have a bachelor's degree or higher -- double the actual rate according to the U.S. Census.

28% of those who completed the survey are over 65 -- almost double the actual rate according to the U.S. Census. The survey seriously undercounts those under the age of 34, compared to what the census tell us it should be.

Ambient Awareness Levels of Capisic Brook

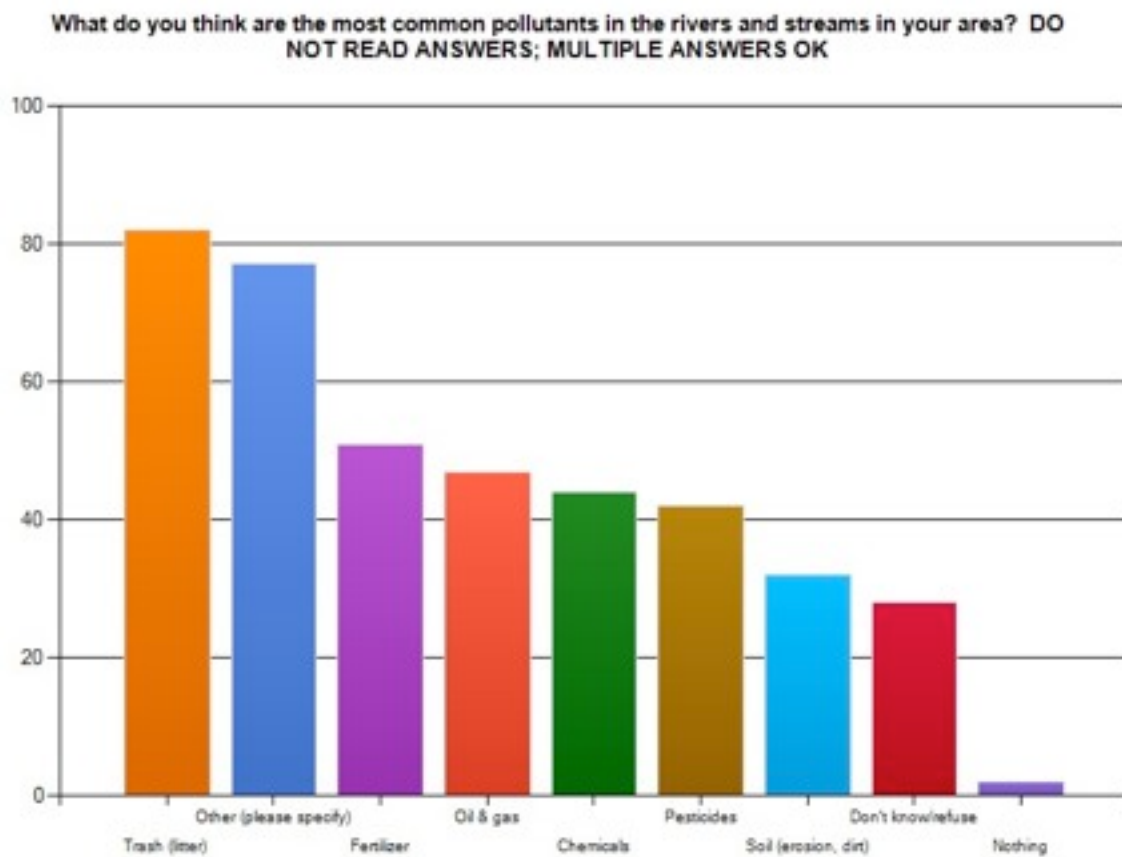
Bottom line, it's low.

When asked to rate the "overall health of the streams and rivers in your area," most answer 2 or 3 on a four point scale, with a healthy number declining to answer at all. In other words, residents aren't struck by how good or bad it is. When asked about their familiarity with Capisic Brook in particular, the largest number picked 4 -- indicating they were not at all familiar with the creek.

These results are basically consistent with findings from other urban areas, which find that residents generally give less thought to their neighborhood creek than they do to the nearest “marquee” waterbody such as Casco Bay.

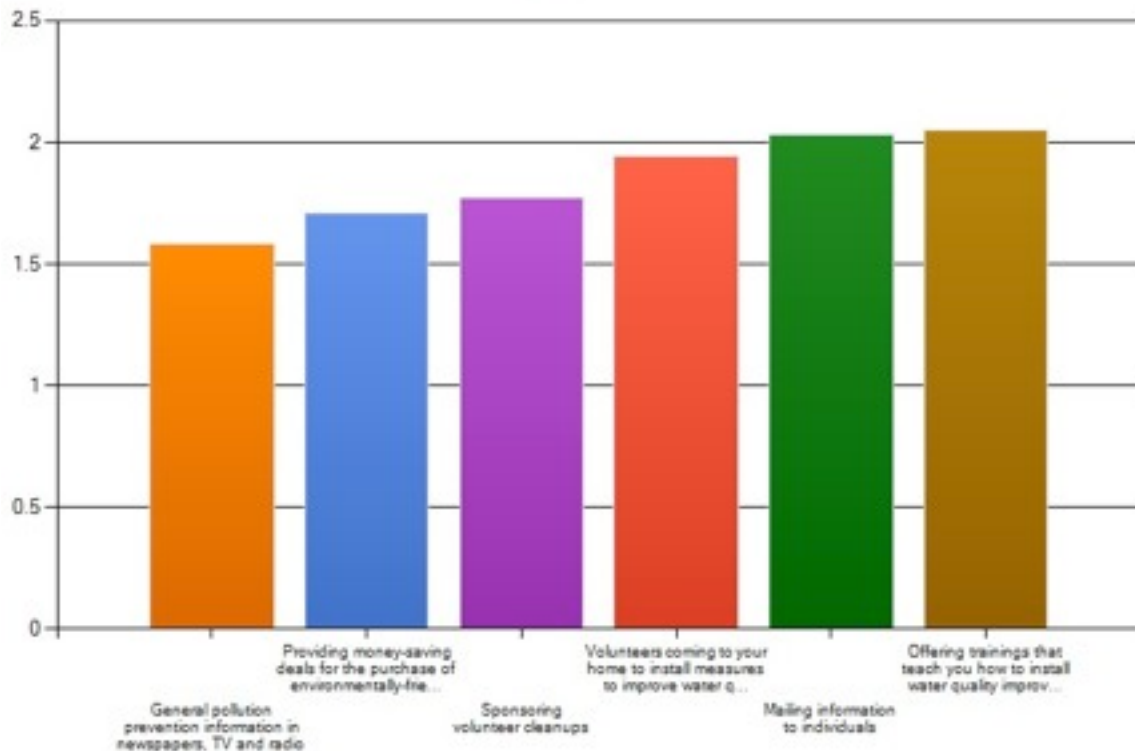
About half correctly report that storm drains lead to the creek, but this number is misleading about the watershed population -- our survey sample is highly educated. Only one in five of the high school graduates in our sample got that question right. Almost half of them refused to even answer the question.

The less education a respondent has, the more likely they are to report “trash” as the most common pollutant in local waters. The more education a respondent has, the more likely they are to recognize fertilizer or soil as a problem.



Observations About Approaches

Using a 4-point scale, where "1" means it has your highest level of support and "4" means you do not support it at all, please rate the following techniques for promoting improved water quality...



Residents voice the most support “for promoting improved water quality” though public service messages in mass media, and least support for “peer pressure” methods such as trainings and volunteers who visit the home. This is consistent with how they report learning a lot about neighborhood issues and trends.

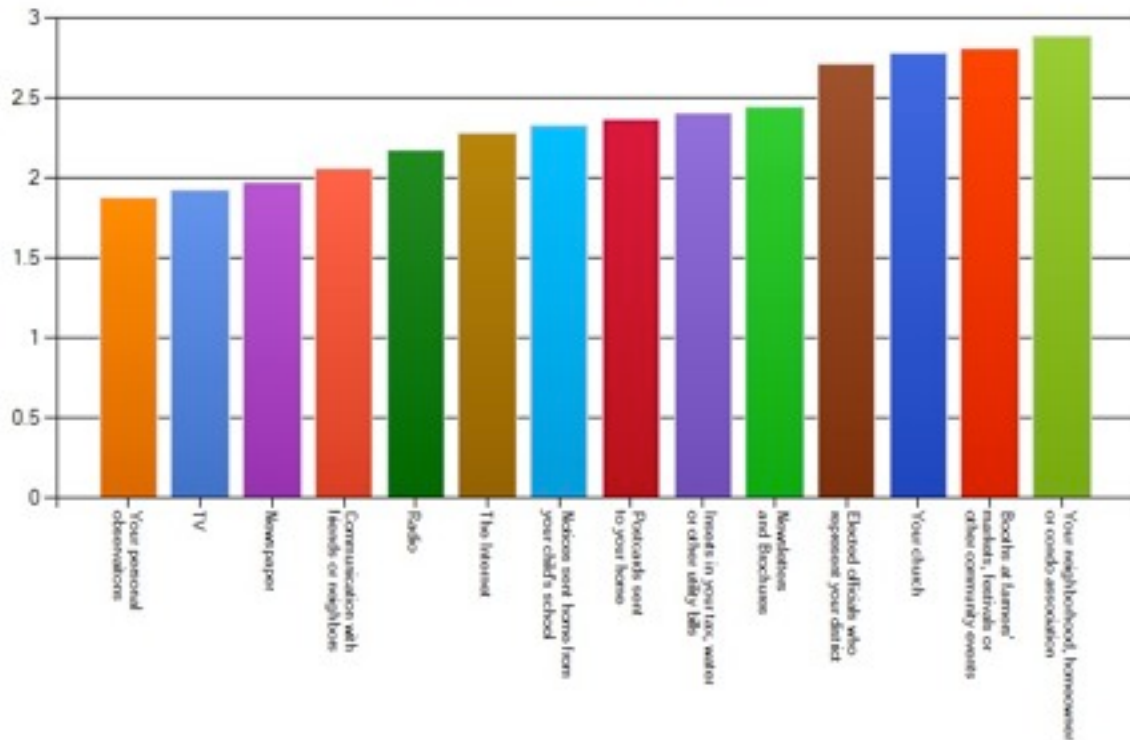
There are two challenges with this:

- Using mass media techniques, particularly television, to try to change the behaviors of a few hundred people is enormously wasteful and inefficient
- Researchers who study behavior change campaigns empirically find that mass media techniques are relatively less effective than those which have a face-to-face, peer pressure component to them.

Again, we find significant differences in views here based on education. Higher educated respondents are more receptive and supportive to *all methods* for “promoting improved water quality.” The gap is particularly large for techniques with a peer pressure angle (organized cleanups, workshops, visits from volunteers trained to disconnect downspouts, etc.).

Communications Channels

I am going read a list of ways you may learn of issues, events and trends taking place in your community. Again using a 4-point scale, where "1" means very important and "4" means not at all important, please rate the following sources of information:



As a whole, residents report that their personal observations are the most important source of information about community issues and trends. They conversations with neighbors as #4. Traditional civic communications -- neighborhood association, church, or local festivals, markets, and community events. -- rate poorly.

But it is here that the skewed age sample of the survey is of the greatest consequence! As the chart below reveals, those aged 44 and under report that *the Internet is their top choice for information about the community*. Older residents sharply disagree -- preferring their personal observations, traditional media, and conversations with neighbors.

If our survey accurately reflected the actual age distribution in the watershed, it is likely that the Internet would emerge as the community's #1 or #2 choice for learning about local issues and trends.

I am going read a list of ways you may learn of issues, events and trends taking place in your community. Again using a 4-point scale, where "1" means very important and "4" means not at all important, please rate the following sources of information:

