

# **Guidance for Local Governments Using Radio and Television Advertising to Conduct Public Outreach about Stormwater**

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# Steps to Planning Outreach Campaigns in Brief

- 1) Identify surface water issues of concern in the community. Ideally, this determination would be based on assessment data, watershed plans, and other relevant studies.
- 2) Determine whether and which public behaviors contribute to those water quality issues of concern.
- 3) Research which segments of the public engage in those behaviors. What are the demographics of each segment (how are they different from the rest of the population)?
- 4) Determine which population segments you want to target (based on ability to reach those people with messages and affect their behavior, fairness to disadvantaged communities, and other community goals and permit requirements). These are your target audiences.
- 5) Research each target audience's norms and commonalities. What do they care about? How do they obtain information? Who do they trust to deliver reliable information?
- 6) Research the behaviors for each target audience: Why do your target audience members engage in behaviors that contribute to stormwater pollution? What behaviors do you believe should be adopted? Why are they superior from a water quality perspective? Why are they superior in terms of things that the audience cares about (e.g., quality of life, public health, etc.)? What incentives are there for and against adoption of the preferred behaviors?
- 7) Lay out a logic model (stepwise process) for each target audience that shows how you want them to change over time or what you want them to do. Be specific.
- 8) Develop media messages. Sketch out campaign components for each audience that address the barriers and benefits of your suggested behavior change and assure your target audience that changing behavior will make a difference. Find ways to motivate them!
- 9) Check your messages and campaign components with affected stakeholders and members of the target audience before you invest in actually producing spots or purchasing supporting campaign components, such as giveaways.
- 10) Obtain and/or develop campaign materials (spots, web pages, giveaways, etc.). Seasonally appropriate footage may need to be obtained [a year] in advance of spot production.
- 11) If possible, beta test your materials and/or conduct a pilot run in a small, controllable area and evaluate.
- 12) Revise the logic model if necessary, based on knowledge gained from Steps 8 and 9. Be sure your campaign will be sufficient to have an impact.
- 13) Start planning the campaign. Set goals for the campaign decide how it will be evaluated. Be sure the campaign is timed to coincide with times when people should be changing behaviors.
- 14) Conduct and evaluate the campaign.

# Introduction

Many local governments in North Carolina are required to conduct public education on stormwater issues by various state and/or federal mandates. This document provides guidance on how to plan and evaluate mass media outreach conducted to change public knowledge, awareness, and behaviors. Conducting mass media campaigns well can be challenging, but tools and planning frameworks are available that can simplify the task. The most important point is this: in order to ensure that the necessary data are available and collected at the level you need to be able to adequately report on and evaluate the campaign, you need to consider campaign evaluation and attendant data needs DURING the campaign planning stages.

This guidance is based on experience from staffing the NC Clean Water Education Partnership (CWEP) with input from other media campaign planners from the public and private sectors. The NC Department of Environment and Natural Resources (NCDENR) conducted a statewide Survey of Knowledge, Attitude, and Behaviors in 2005 (Bartlett 2006). that obtained information on these attributes of the NC public and provided a preliminary dataset for the CWEP research project. The guidance is general; literature should be consulted for guidance on crafting specific campaigns. Anyone seeking more information on reporting on media for multiple jurisdictions is invited to contact the author.

CWEP is a cooperative effort between local governments in the Tar-Pamlico, Neuse, and Cape Fear River Basins to educate the public about the importance of protecting water quality and their role in doing so. The program is funded primarily through annual cost-shares supplemented by occasional grants (two Section 319 Non Point Source Pollution Control Grants to date). Triangle J Council of Governments provides staff and fiscal/administrative support for the program by agreement. More information on the CWEP partnership is available at the program website, [www.ncCleanWater.org](http://www.ncCleanWater.org).

CWEP was created in 2002, when local governments subject to the Neuse and Tar-Pamlico Nutrient Sensitive Waters Rules, which require them to conduct public education on stormwater issues, recognized that media broadcast and cablecast boundaries superseded jurisdictional boundaries. Therefore, economies of scale could be achieved through a cooperative effort. Because media outlets cover multiple jurisdictions, it makes sense for jurisdictions covered by a given outlet to share in the cost of a run using that outlet. CWEP partners took a further step, setting up an ongoing program to handle the outreach program, including hosting a website, reporting on the campaigns, and, now developing supplemental outreach tools for use by the Partnership.

The recommendations in this report are based on experience conducting mass media campaigns since the inception of CWEP in 2002. CWEP obtained a Section 319 grant in FY06 specifically to conduct and evaluate a large television campaign (undertaken in Spring 2007). A summer radio campaign was also conducted in 2007, and a second television campaign was conducted in Spring 2008. These three mass media campaigns took place *after* the NCDENR statewide Survey of Knowledge, Attitude, and Behaviors in 2005, and *before* CWEP conducted a survey of residents in its service areas in 2007. East Carolina University's Center for Survey Research collected the data for both surveys and provided data analyses and comparisons.

This report assumes that the reader has a basic knowledge of nonpoint source water quality issues and the public behaviors that contribute to them. The reader without this basic knowledge, or anyone wishing to better understand the nuances of using mass media to educate the public and promote stewardship behaviors, may wish to consult documents listed in the Resources section.

CWEP created an online discussion forum to collaborate and share knowledge on the issues involved in planning and evaluating mass media campaigns for stormwater education and outreach. Anyone is invited to join the forum or simply browse. The forum is on the CWEP website at [www.ncCleanWater.org](http://www.ncCleanWater.org) under the Evaluation tab. The reader is also referred to NCDENR's Phase II Outreach & Public Participation Guidance (NCDENR, 2006) for additional regulatory considerations for media planning.

## ***Regulatory Drivers for Stormwater Outreach in North Carolina***

The rules discussed below are incorporated into local government programs via stormwater permits that local governments must obtain from the NC Division of Water Quality's (NCDWQ) Permitting Unit if they are subject to any laws requiring them to obtain permits. The permits usually do not specify the exact requirements for outreach the local governments must conduct. For example, the Town of Chapel Hill's Stormwater Permit states under Section B: Public Education and Outreach, Part 2: BMPs for Public Education and Outreach:

- (a) Establish a Public Education and Outreach Program: Develop a public education program and implement within 12 months of the permit issue date. Incorporate outreach elements for significant minority and disadvantaged communities.
- (b) Informational Web Site: Develop and maintain internet web site. Post newsletter articles on stormwater, information on water quality, stormwater projects and activities, and ways to contact stormwater management program staff.
- (c) Public education materials for schools, homeowners, and/or businesses: Develop general stormwater educational material targeting school children, homeowners, and/or businesses.
- (d) Public education material dissemination: Distribute written material through utility mailouts, at special events, and at high traffic businesses.

For this project, the researcher contacted other states and was unable to find any agencies that provide guidance on how much outreach needs to be conducted to satisfy permit requirements. Such regulatory requirements would establish a minimum intensity of outreach, but in North Carolina, only broad categories of media are established as program minimums (for example, "conduct a television or a media campaign relating to stormwater").

Absent more detailed standards, it is generally recommended that permittees conduct enough outreach to have a measurable impact on the target audience over time so that the campaigns can be evaluated for audience impacts (outcomes) and investments in media justified. The amount of outreach needed to have an impact on the audience can only be determined through research and experience. Public entities should try to maximize the effectiveness of their investments by carefully planning campaigns, streamlining reporting, conducting campaign evaluations that are targeted and well coordinated, and continually adjusting the outreach program to incorporate

lessons learned from evaluations, both self-evaluations and evaluations from the growing body of social marketing campaign documentation.

### **Federal Clean Water Act NPDES Rules**

The National Pollutant Discharge Elimination System (NPDES) permitting program was authorized under the 1972 Clean Water Act. The US Environmental Protection Agency (EPA) promulgated Phase I of the rule in 1990. NC NPDES Phase I rules required municipal separate storm sewer systems (MS4s) serving populations of 100,000 or more (based on 1990 census data) to educate the public about nonpoint source pollution and undertake other measures to control nonpoint source runoff. NC NPDES Phase II rules, approved in November 1999, expand the requirements and the areas to which they apply. (Note that any public entities named in a Total Maximum Daily Load (TMDL) as discharging pollutants to the water body are automatically subject to Phase II.)

### **NC Basin Nutrient-Sensitive Waters Rules**

North Carolina has adopted regulations regarding nutrients in the Neuse River Basin (“Neuse Rules”) and the Tar-Pamlico River Basin, among other watersheds. The rules generally regulate riparian areas, wastewater discharges, urban stormwater management, agricultural nitrogen reduction, nutrient management, and nitrogen offset fees (Neuse Rules are codified as 15A NCAC 02B .0232). Rules for urban stormwater management call for subject local governments to conduct public education and outreach activities.

## ***The Stormwater Outreach Program***

If the outreach conducted is to be effective, it has to be planned comprehensively; that is, in conjunction with overall program goals, community characteristics, surface water issues, etc. The process described in this document applies only to specific stages of planning actual media campaigns. In order to select topics and develop messages for the media campaigns, strategic planning for the overall program is very important. Simply selecting issues and developing messages about those issues will be less effective than taking a strategic and targeted approach and tackling issues using the most appropriate outreach vehicles. A good methodology for analyzing issues and how to tackle them is presented in McKenzie-Mohr and Smith’s book *Fostering Sustainable Behavior* (1999).

For stormwater issues, a set of issues and local water quality problems that the public is suspected of contributing to first needs to be defined. Ideally, this list would be based on some actual water quality data. (The NCDWQ Basinwide Plan for the river basin(s) in your jurisdiction would be one place to start if more local or specific information is not available.) Then, determine which water quality stressors have the greatest contribution from the public. Research the issues that contribute to that stressor and list the specific behaviors on the part of individuals that contribute to them. Consider whether it is possible to change these behaviors using mass media or whether other outreach components should be planned as well or instead of media outreach. Market and literature research and/or beta testing may be necessary.

# Overview of Mass Media

Mass media refers to means of communication that reach large numbers of people. In planning a campaign for stormwater outreach, media choice is critical because it affects the outcome of the campaign and its impact on the audience. The following table summarizes the advantages and drawbacks of different types of media advertising (adapted from Sissors and Baron [2002]).

## Considerations for Choosing Media for Advertising

Media	Advantages	Drawbacks
Television advertising	<ul style="list-style-type: none"> <li>Sight and sound are combined in most television settings</li> <li>Reach of both selective and mass markets is possible</li> <li>Cost-efficiency (on certain channels at certain times)</li> <li>Precisely defined target audiences</li> <li>Good data on reach, frequency, market demographics, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Possibly low audience attention; fragmented audience (channel surfing, TV breaks)</li> <li>New technologies allow viewers to record programs and skip commercials altogether</li> <li>High commercial loads ("clutter")</li> <li>Messages are fleeting (no physical "catalog value")</li> <li>Broadcast or cablecast area may not coincide with outreach target area</li> <li>30 second spot is typical; message must be very concise</li> <li>Spot may be viewed but not heard or heard but not viewed in some settings (e.g., bars)</li> </ul>
Radio advertising	<ul style="list-style-type: none"> <li>Reach of special kinds of target audiences</li> <li>High frequency (inexpensive medium for ads that need a lot of repetition)</li> <li>Low cost and effective supplement to other media</li> <li>Excellent for mobile populations and reaching people at rush hour</li> <li>High summer exposure</li> <li>Geographic flexibility</li> <li>Local coverage availability</li> </ul>	<ul style="list-style-type: none"> <li>Many stations in one market</li> <li>Messages are fleeting (no "catalog value")</li> <li>Low attentiveness for some formats</li> <li>AM frequency broadcast reception area varies by time of day</li> <li>60-second spots are typical; can be hard to fill with interesting material</li> </ul>
Newspaper advertising	<ul style="list-style-type: none"> <li>Sense of immediacy and importance</li> <li>People read the newspaper to obtain information as well as entertain</li> <li>Local</li> <li>Can be run relatively last-minute</li> <li>Advertising can be targeted to audiences by selecting which section of the newspaper it runs in</li> </ul>	<ul style="list-style-type: none"> <li>Relatively high cost, although space for slicks (pre-made optional ads run only to fill up space) may be available</li> <li>Column widths and print specifications vary by newspaper</li> <li>Smaller pass-along audience than magazines</li> <li>Newspapers vary in reproduction quality</li> <li>General audience</li> </ul>
Magazine advertising	<ul style="list-style-type: none"> <li>Targeted to specific audiences</li> <li>Higher-quality graphics than newspapers</li> <li>Long life</li> <li>May be passed along ("secondary audience")</li> </ul>	<ul style="list-style-type: none"> <li>Early closing dates (may need ad up to 2½ months before print)</li> <li>Lack of immediacy</li> <li>Reach is accumulated slowly</li> <li>Ad may be viewed after campaign has concluded (difficult to measure impact)</li> </ul>
Website banner advertising	<ul style="list-style-type: none"> <li>Highly measurable ("click-throughs")</li> <li>Possible to target very specific audiences</li> <li>May be possible to target by geographic location</li> <li>Low production time and resource requirements</li> <li>Easy to update</li> <li>Directs traffic to program website or other relevant info source</li> </ul>	<ul style="list-style-type: none"> <li>Possibly low audience attention</li> <li>Small space to communicate</li> <li>Format usually limited (pixel size, vertical/horizontal format)</li> <li>Frequency may depend on how many other advertisers have purchased space</li> <li>Usually billed by frequency, which can vary and be hard to predict</li> </ul>
Outdoor advertising	<ul style="list-style-type: none"> <li>Wide coverage of local markets</li> <li>High frequency</li> <li>Largest print ad available</li> <li>Geographic flexibility</li> <li>High summer visibility</li> <li>Around-the-clock exposure</li> <li>Especially effective to pair with radio (reach drivers with more detailed message)</li> </ul>	<ul style="list-style-type: none"> <li>Messages must be very simple</li> <li>No guarantee of high recall</li> <li>High cost</li> <li>Limited availability of best locations</li> <li>Billboards vary in size so ads often cannot be reused</li> <li>May be considered visual clutter</li> </ul>

The Center for Watershed Protection suggests that media campaigns are better suited to increasing general awareness and dissuading negative behaviors; adopting new practices may require technical assistance, such as workshops (Swann, 2000). There is little consensus from literature not affiliated with a particular media about whether some media are globally superior, probably because the choice of medium or mix of media needs to be specific to the context and the objectives of the campaign (Swann, 2000; Peacock, 2002; Marketing Evolution, 2006). If general awareness is the goal, a combination of different media will probably be most effective (Swann, 2000; Peacock, 2002), as no single medium will be recalled by the entire population (Swann, 2000). However, people often recall television better because it is a visual medium, and therefore frequencies could be lower than with radio. However, radio spots are usually 60 seconds long, whereas television spots are usually only 30 seconds.

In general, radio and television advertising are useful for reaching broad segments of the population in a short amount of time with a simple message.<sup>1</sup> Web advertising may be another potential “piece” of the mass media campaign buy worth evaluating, especially in conjunction with radio and television buys – media outlets are increasingly using their websites to link communities with advertisers and information. In general, media planners should plan a strategy that helps link the target audience to information and resources they may need to change their behaviors.

The focus of this guidance is on paid radio broadcasting and paid television broadcasting and cablecasting in the context of planning and conducting media “campaigns.” A campaign is defined here as a single “run,” or “buy,” of airtime from a media outlet or set of media outlets. CWEP media campaigns are discrete, usually taking place over the course of 3 to 4 weeks, seasonally timed to coincide with the issue and the message. For example, CWEP has conducted radio campaigns on motor oil changing and car washing in the summertime, and a television campaign on proper lawn fertilizing practices in the springtime. However, because social marketing campaigns typically involve a complex set of behavior changes, they need to be conducted over a long period of time and with as much repetition as budget allows.

Note that there are other ways to use mass media besides advertising. The local news is one important avenue (for example, during a drought, stormwater managers may be interviewed and be able to promote rain barrels). Such programming may have more credibility than advertising and may offer more time to communicate messages to the audience. An increasing number of services are available to assist campaign planners with longer-format and news mass media (e.g., StormCenter Communications’ stock content “Envirocasts”).

Web outreach is also a form of mass media. It is one of the most cost-effective means of reaching the public (Cause Communications, 2005), especially younger audiences. More innovative web-based strategies (such as blogs and podcasts) are becoming increasingly important, especially for reaching reporters and younger generations (Eckl, 2008; Fisher, 2008). CWEP uses its website as both an outreach mechanism and as a means to collect data on the public’s response to our radio and television campaigns.

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<sup>1</sup> One advantage of radio and television advertising is that vendors may include or subsidize production work (e.g., translation of radio spots into Spanish) along with a buy of airtime.

## **Mass Media Terminology**

Mass media use specialized statistics to describe campaigns and evaluate their effectiveness. The following terms need to be understood in order to be able to effectively buy media and evaluate your campaign. These terms apply to both radio and television. The base for reach, frequency, and impressions can be either the target audience or the population, so be sure the base is specified for these statistics.

- **Audience** refers to the viewership or listenership in a given market area. Usually Audience is discussed in terms of population/individuals; however it is important to note that media outlets vary in how they define this group.
- **Bonus spots** or “freebies” are spots run at no cost, usually in conjunction with a paid media buy (spots run for free outside of a paid buy are considered Public Service Announcements (PSAs)).
- **Dayparts** are segments of the 24-hour day that are used to help media planners schedule advertising. Television generally uses 7 dayparts, and radio generally uses 5 dayparts.
- **Target audience** is the group of people you want to affect or reach with your message. Often expressed in terms of demographic, geographic and lifestyle characteristics. Also referred to as a “demo” (short for “target demographic”) in media buy jargon. For example, “female homeowners between the ages of 35 and 54.” Media sales representatives need to know your target audience in order to craft a buy that will reach them effectively.
- **Frequency** is the average number of times the average member of the audience received the message.
- **[Percentage] Reach** refers to the percentage of the audience (target or population) that were exposed to the spot at least once.
- **Net Reach** refers to the raw number of individuals in the audience (target or population) that were exposed to the spot at least once.
- **Impressions** refers to the total number of times your message was seen or heard in the market (by the target audience or population). Some impressions might be made on the same person, or the audience *duplicated*. “Gross,” “Gross Impressions,” and “GIs” are terms that are all synonymous with “impressions.”
- **Inventory** is number of slots available for spots in the schedule.
- **Population** is the number of individuals (usually adults over a particular age) in the viewing area. May include individuals who do not “consume” the medium. Usually synonymous with the “universe” of potential consumers.
- **PSA**, or public service announcement, is a spot run at no or reduced cost on behalf of a non-private entity to educate the public or otherwise improve the public interest.

The following terms may also be encountered:

- **Creative** is media jargon for the spots to be run.
- **Traffic** is media jargon for content generally and their content management system that specifies which spots to run when.
- **Weight level** describes a multiplier assigned to a given media to account for relative efficiency or desirability for reaching the target audience.

## **Conducting Radio and Television Campaigns**

It is important to design a media campaign as part of an overall communications and public outreach strategy on stormwater issues. Such a strategy would integrate the messages disseminated with tools to implement the desired behavior changes. However, our research

conducted for this project indicated that mass media messages alone *can* influence self-reported knowledge and even self-reported behaviors.

Mass media outreach is somewhat specialized with its own jargon and procedures, and having industry professionals to call on for assistance with the process is invaluable. It is useful to develop relationships with media vendors' sales staff so that they understand the program's objectives and reporting needs. These relationships save time and result in more efficient buys.

CWEP has also benefitted from finding and using a reliable private company for our media production work, which has staff who are quite knowledgeable about deploying mass media messages effectively. We have found that having a single repository for production work has also facilitated subsequent reproduction requests and revisions.<sup>2</sup>

## ***Planning Mass Media Campaigns***

Because behavior change campaigns are so complex, it is important to plan them well and research the various components of the campaign. Such planning is often referred to as "front-end evaluation" or "formative evaluation," which signifies the importance of this stage to the overall campaign evaluation cycle. Because it comes before the campaign, thinking of this work as evaluation is slightly counterintuitive. It may help to think of this step as involving either evaluation of OTHER similar campaigns or as a hypothetical evaluation of the campaign you are planning as if it had already been conducted.

Guidance on researching audiences and developing messages is widely available [e.g., EPA's Getting in Step series, McKenzie-Mohr and Smith (1999)], so these aspects of conducting media campaigns will not be discussed in detail here save for a few considerations. A suggested process follows. Note, however, that the process will depend on which aspects of the campaign are a "given." For example, if your NPDES permit requires you to conduct a television campaign, you would want to craft television campaign that would be expected to have an impact, and research and tackle a topic and an audience accordingly. An overall outreach plan should be developed that lays out which issues will be addressed using which outreach vehicles.

Media planning consists of the following steps: 1) specifying the target audience and setting communications goals to reach them, 2) developing a specific media campaign strategy to achieve those goals, and 3) designing an evaluation mechanism for the campaign. The importance of having clear and achievable goals specified from the outset cannot be overstated. Furthermore, it is important to plan to document not just what actually took place, but why each set of choices was made. Future campaigns may wish to follow a campaign, or modify it. Campaign reporting and the planning of future campaigns are facilitated by having documentation on critical choices in campaign planning processes.

One concrete tool for planning and documenting campaign strategy is a logic model. A logic model is simply a diagram that visually represents a process. A logic model for stormwater outreach would represent the steps the audience would be expected to experience as they progress from their current behavior or knowledge to the desired behavior or knowledge. As

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<sup>2</sup> Once the final spot is generated, the individual voice, music, and video tracks are often "flattened" into a mixed master version, which is nearly impossible to edit later on.

soon as resources allow, begin developing and using a logic model in your campaign planning efforts (see *Evaluating Mass Media Campaigns: A Review of Research Relevant to Social Marketing* [Tiger and Bruce, 2009] for theoretical frameworks to inform logic models for behavior change campaigns).

Logic models help with campaign planning because developing them prompts campaign planners to question critical assumptions about the progression of the audience's experience and to consider whether the audience has the resources they need to make the changes requested. If the campaign has a definite time period or addresses a seasonal issue, it is important to include some representation of time in the logic model. Beta testing of one or several outreach campaign components, including the intensity of the campaign, may be necessary to verify that the audience responds to the message as hoped.

Clearly, timing is key to conducting and evaluating a campaign successfully. When begin to consider a media campaign, brainstorm additional outreach components that could supplement the media campaign and enhance your ability to reach your target audience. If so, the timing of the campaign may be more critical, and, accordingly, airtime for the mass media campaign will need to be booked sooner. Ensure that the duration of the run(s) is coordinated with any other initiatives related to the campaign, such as a website update, mailing, or evaluation survey. For example, a phone survey to evaluate the campaign's effectiveness might start partway through the run and conclude no more than a couple of weeks after the campaign. Also, CWEP always updates the program home page so that it features some information related to the media campaign being conducted in order to "welcome" visitors who respond to the media campaign's call to visit the program website for more information.

The more evaluation you want to conduct and the more definitive you want that evaluation to be, the more involved and time-consuming the evaluation process will be and the sooner you should start booking your media airtime. If you only plan to evaluate campaign outputs and not whether the audience received the message or acted on it (i.e., the *impact* of the campaign), you could start to negotiate the buy as little as a few weeks before the campaign runs. In general, however, booking media buys later means paying a higher rate and risking a lack of inventory (space) to run your spot. Booking highly desirable or widely watched media time, such as during the holidays, season premiers of television series, and national elections, needs to be done further in advance.

## **Understanding Target Audiences and Developing a Message**

Ideally, you will have some sense of the issue you want to address and why BEFORE you start planning your media campaign. Otherwise, you run the risk of selecting an issue that is not well suited to a media campaign, or at least not having begun developing any related outreach components that would make your media campaign more successful. (See McKenzie-Mohr and Smith's book *Fostering Sustainable Behavior* [1999] for information relevant to developing programs and pre-campaign preparation.) Factors that are important to research before the campaign planning process begins include whether the group that engages in the behavior is solely responsible for making decisions about that behavior, whether they are open to alternatives, and how they would obtain information they consider relevant to the behavior.

In order to design an effective campaign, the people the campaign wants to reach, or "target" audience, needs to be in terms of their demographics (qualitative information such as age,

income, and homeownership), psychographics (traits such as personality, beliefs, attitudes, consumer spending habits, and the like), and geography (where they live or visit). Most larger media vendors subscribe to specialized services that provide information about audiences based on detailed surveys of the market and use this information to develop a buy that is tailored to reach the target audience. This information will also help you select which media vendors to buy and which programming to run your spots during.

Once you have determined the target audience (who you want to affect), it is important to analyze the barriers and benefits of the changes the campaign desires to affect on the part of the target audience. For example, a campaign to encourage homeowners to sample their soil before applying fertilizer has to address and overcome a number of barriers: lack of knowledge about how to take a soil sample, perception that such a procedure is time-consuming and not worthwhile, and lack of understanding of how to interpret the results of the soil sample. Benefits of testing soil might include savings on fertilizer, a healthier lawn, and, reduced algal growth in water supply reservoirs. Note that a campaign and the spots to implement it may not address all of these barriers and benefits, just the ones that are most critical from the perspective of the target audience.

Once you understand the barriers and benefits of your target audience, begin developing messages that resonate with key considerations. It is also important to ensure the message is consistent with other messages the target audience may be receiving. For example, if your campaign is about lawn watering practices, make sure water management department guidance is consistent with your messages. Allow relevant businesses and private sector associations an opportunity to review your messages as well to help verify that the message is accurate.

Again, beta testing of the message is important. Do not rely on assumptions about barriers and behaviors, as they are easy to overlook or misunderstand. In particular, be extremely careful about assuming that people only need to be told about a problem or told what to do. Often, there are complicating factors that will intervene in an individual's consideration of whether and when to change his or her behavior. Most importantly, beta testing will tell you whether the audience adequately understands the message as portrayed in the spot. Look at community-based social marketing resources [e.g., McKenzie-Mohr and Smith (1999), Fostering Sustainable Behavior website] for guidance on how to analyze and overcome barriers and publicize benefits.

If there are segments of the target audience that have different barriers and benefits to changing behaviors, analyze barriers and benefits separately and develop more than one logic model. More than one spot and more than one campaign may be necessary.

### **Developing and Producing “Spots”**

CWEP has traditionally created and paired two different but related mass media messages: one targeted toward public AWARENESS (“there is a problem”) and one targeted toward ACTION (“this behavior change will address the problem or have some personal benefit”). If it does not overly complicate the spot, the awareness message could also explain the impact of the problem, especially if an impact can be identified that the audience is likely to care about. For example, the awareness message might explain that pet waste is a water pollutant and that it contributes bacteria that can lead to beach closures. An action message, on the other hand, would emphasize techniques people can use to pick up after their pets and the benefits of doing so.

In media campaigns, it may be advisable to articulate a general message with more emphasis on awareness than action until the population becomes educated about the existence of the problem and the fact that public behaviors contribute to it. For example, early on, you may want the public simply to understand that storm drains discharge runoff into streams without treatment of any kind, or that runoff is a significant cause of pollution in your area's waterways. (Research has shown that many citizens think that runoff is treated similarly to wastewater before it is released into the environment.) However, it is still important to begin giving the public easy steps they can take to reduce their contribution to nonpoint source pollution early on, lest people conclude that they are not a part of the problem and "tune out" the messages directed at them. Research is needed on how and when campaigns should balance and shift action and awareness messages.

Once you have specific and realistic ideas of what you want the target audience(s) to know or do, develop or customize the media spots that will be the vehicles for communicating those concepts to your audience. Depending on your timeframe, message, and budget, you may decide to create an original spot or to modify an existing spot.<sup>3</sup> Make sure spots "speak to" the target audience. Ask: Does the spot get their attention? Is the desired action or knowledge clearly communicated? Does it motivate the audience? In general, "emotional" spots that engage the viewer on a more subconscious level are more likely to be remembered, as opposed to "informative" spots that focus on conveying facts.

For TV spots, it is also important to ensure that the message is understandable, or at least not counterproductive, if it is *seen* but not *heard*. TV spots may be seen and not heard in airports, bars, and on television recording devices if commercials are fast-forwarded.<sup>4</sup> Also, some television viewers may be hearing impaired. Beta testing of this aspect may be advisable. For example, a television spot showing someone dumping motor oil down a storm drain should always be accompanied by a strong visual message depicting the unacceptability of this behavior (such as a red circle with a line through it).

Unless you are only using one outlet and they are doing your production, you will need to obtain copies of the spot(s) for each of your vendors. Audio files for radio may be small enough to share electronically. Dubs for television need to be hard copy (tape stock). You should ask a representative from each vendor you are using what format they prefer (for TV, Beta SP is the most universal, but there are many other tape types). If you have the time, you can save money

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<sup>3</sup> When CWEP was a less experienced program, we customized spots from other jurisdictions by keeping the footage and audio and simply replacing the "tag" (identifying information) with CWEP information. It is not always cheaper to modify a spot, especially if extensive editing is needed. It is not expensive to obtain footage of everyday behaviors, and many vendors will do production work very cheaply if airtime is purchased with them.

If you create an original spot or obtain a spot from another program for local customization, be sure to specify and maintain an "unmixed master." This is a master version of the dub that can be modified. If you do not specify that you want an unmixed master, you are likely to receive a version of the spot cannot be edited or can only be edited with great difficulty and expense.

EPA has a database of stormwater outreach materials, including television and radio spots, from other programs available online at <http://www.epa.gov/nps/toolbox>.

<sup>4</sup> Television research staff maintain that fast-forwarding through commercials does not adversely affect ad recall (provided the spot is intelligible without sound) because viewers have to pay close attention to the video to know when to stop fast-forwarding and start replay; in fact, they may end up paying more attention to the spot than someone who is not fast-forwarding through it.

by just making one dub and having vendors simply borrow it to copy it into their airtime “traffic” system. If you intend to post copies of the spot on your website and/or social networking sites, you will also need to obtain electronic files in a format that is compatible with website viewing.<sup>5</sup>

## Considering Geography

Geographic coverage varies by station (due to broadcast tower locations, signal strengths, and topography) or by cable outlet. Sometimes cable vendors overlap, but more often an area is served by only one. Regions peripheral to one cable company’s service area may be served by a special agreement with the adjacent company. For example, Nash and Edgecombe Counties are not within the Time-Warner Cable service area, but Time-Warner can provide cable service by agreement if the entire “Raleigh Interconnect” area is included in the buy.

Research the areas covered by each station you are considering buying airtime from. The more stations are involved in your buy, the more complex the campaign and its reporting are and the more time you will spend managing the campaign. If you are a partnership, strive to ensure that your partners get similar or fair media treatment, for example by analyzing percent of impressions each jurisdiction will receive relative to its population. Considering that each outlet has different ratings and different coverage areas, this is no easy task. Readers who purchase media for partnerships are invited to contact the author.

## Negotiating Airtime

Mass media can be used within any budget to disseminate stormwater messages. CWEP has traditionally paid for specific campaigns in order to have our messages distributed at optimal times and frequencies. Cost is usually a function of viewership or listenership, so cheaper outlets provide fewer impressions per showing, in general. An important consideration for public and nonprofit entities using mass media is that buying airtime during particularly expensive advertising opportunities (such as the Superbowl) may be perceived as a poor use of funds.

It is possible to get mass media time for low cost or free, but doing so may require additional staff time. However, once a program has started to pay for airtime, it may be difficult to obtain it for free thereafter. Other considerations for running spots as PSAs include:

- Spots may have to be submitted on multiple occasions.
- It may be more difficult to obtain detailed summary statistics for PSA runs
- The spot will probably need to be somewhat “timeless” or at least “seasonless” — you have little control over when the spot will run.
- The station may want to edit the spot.
- Some stations seek specific types of PSAs, so speak with the vendor’s community relations liaison and/or submit the spot to more than one station.
- Airtime obtained cheaply can be pre-empted by higher-paying advertisements.

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<sup>5</sup> CWEP posts copies of our spots to our website as Quicktime (.avi) files or .mov files, as well as to YouTube, which allows viewers to easily share and embed videos. YouTube’s guidelines for videos follow:

- H.264, MPEG-2 or MPEG-4 preferred file format
- Aspect ratio: Native aspect ratio without letterboxing (examples: 4:3, 16:9)
- Resolution: 640x360 (16:9) or 480x360 (4:3) recommended
- Frames per second: 30
- Maximum length: 10 minutes (2–3 minutes recommended)
- Maximum file size: 1 GB

- Unsold inventory (available slots) is most likely to be at times when audiences are very small (the middle of the night).

If you are interested in obtaining free airtime from a commercial vendor outside of a paid campaign, contact the vendor's community or public affairs representative. If spots are run in conjunction with a paid campaign, they are called a "bonus" spots (not PSAs), and they might be "billed" and then refunded as a discount or other rebate on the total campaign. Sales representatives may use this practice to prevent pre-emption by higher-paying advertising.

If you are conducting a paid campaign and the budget for the campaign is not given, determine how much it will cost you to reach your audience at an optimal frequency. CWEP has traditionally used a goal of reaching 50% of our target audience with 3 messages in a 2-week period. In general, a frequency of 3 was believed to optimize the audience's retention of the message versus their tendency to tune out or be annoyed by a message that is repeated excessively. (AdMedia.org [2009] provides a thorough synopsis of media planning and frequency with a table to help advertisers adjust frequency goals based on certain factors, but it is geared toward consumer goods.)

In advertising circles, there is a healthy debate taking place about whether ad repetition matters. According to proponents of "recency theory" (such as Philip Jones and Erwin Ephron), it is not whether multiple impressions were made but whether the last impression took place at a key decision point that matters. This implies that it is more efficient to increase campaign reach than frequency.

CWEP has incorporated recency theory ideas into media buys by selecting the programs during which spots will run based on their factual content, such as during the news, the weather, or a program about home maintenance. Our assumption is that spots shown during informative programming, when people are in a mode to absorb information, will have greater impact than a spot seen during a program with pure entertainment value, such as a sporting event, when people are possibly less likely to take note of information, especially about an issue that may be complex or not clearly relevant to them. This theory needs further research and testing.

Once you know the timing of the campaign, the topic, the target audience, and your media goals, put together a "request for rates" form and decide an approximate budget for each media vendor you are considering.<sup>6</sup> (A sample "Request for Rates" is included here as an Appendix.) Send this information to your vendor's sales representatives as far in advance as possible. If you are soliciting proposals from multiple vendors, ensure that each proposal you receive has information detailed enough to compare statistics across vendors. Detailed statistics on the campaign's ability to reach your target audience to enable you to adjust vendor-specific budgets or select vendors based on their cost performance, especially if the campaign is different from past campaigns.

Some buyers use broadcast television to obtain *reach* goals for the target audience and cable to obtain *frequency* goals. This is because broadcast television stations generally have a larger reach than cable. This is an overly simplistic approach, but in practice it makes sense to use both

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<sup>6</sup> Sales representatives will likely not be able to tell you in advance whether or when any bonus spots will be run that could increase the campaign's intensity, so bonus spots usually cannot be considered when evaluating proposals.

cable and television unless you have a reason not to. However, cable is generally more costly on a per viewer basis than broadcast television, and spots from local advertisers are not shown to satellite subscribers (cable sales reps factored this fact into the buy statistics they provide).

In general, you want to use as few vendors as possible to reach your audience to an acceptable, measurable degree. If the message is complex, optimize target audience frequency and keep 50% target audience reach as your minimum (people will need to see the spot more times to comprehend the message and obtain information relevant to a behavior change). If the message and requested behavior change are relatively simple, repetition of the message may be less important and the campaign may greater impact by maximizing reach across the target audience (>50%).

Vendors may offer “freebies” along with the purchase of airtime as additional incentives. “Freebies” might refer to spots broadcast at no charge (called “bonus” spots if they are run during a paid campaign), or they might be value-added extras such as space to exhibit at a local home and garden show, a banner ad on the outlet’s website, or a feature interview with a local government staffperson. It is usually worth asking about what freebies are available when you negotiate your buy. Some offers might be more trouble than they are worth, but others might be significant value-added opportunities to interact with the target audience or people who could influence the target audience.

## **Gathering Data on the Campaign Outputs**

Gathering good information on campaign effectiveness will help justify future expenses and improve campaign design, so always be thinking ahead to how the campaign will be reported and measured. There are essentially two kinds of evaluation metrics relevant to evaluating media campaigns: 1) media statistics that measure campaign outputs and 2) primary research and other data that measure the message’s impact on the audience or the response of the audience to the message.

The media vendor sales representatives can provide you with the first type of data. When you begin negotiating the buy, tell the sales representatives what media statistics on campaign performance (based on campaign logs and affidavits) you need and when you need the figures by. If the information needs to be broken up into geographic areas, make sure that this is known in advance and that the statistics are available at that level. You may need to infer or do some analysis<sup>7</sup> to estimate the campaign’s effectiveness at the level you need, as many books (compilations of market media statistics) don’t report statistics at levels where the information is statistically valid (that is, an insufficient number of Arbitron diaries (radio) or Nielsen ratings (TV) are available to make generalizations about viewership or listenership patterns).

If possible, try to watch the shows during which vendors planned to run your spots. It might help to recruit some family and friends for this task. One year, CWEP’s partners noticed that the rotation of spots was incorrect (everyone recalled seeing one version and no one had seen the others). It turned out that the outlet had failed to rotate the versions, and CWEP was able to obtain a “make-good” run of the spots that had not been broadcast. This broadcast time had a significant value.

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<sup>7</sup> NCDENR has promulgated a methodology for inferring market data to the local level. Email Sarah Bruce at sbruce@tjcog.org for info.

When the campaign concludes, request information on the campaign's effectiveness from the vendors. Some information will appear on the invoices and/or station affidavits documenting when spots ran (often one and the same). Be sure to find out if any spots were run free (as PSAs) and have your sales reps include gratis airtime in their calculations of campaign summary statistics.

Statistics provided by vendors can vary in terms of how the "base" is characterized, for both the target demographic and the population (both age and households vs. individuals). Obviously, if you intend to compile multiple sets of statistics, standardized definitions are preferable. CWEP has gone to a system of providing our sales representatives a standardized form to fill out to collect information on the buy that specifies exactly what statistics we want, which greatly simplifies our ability to standardize and compare figures across vendors and campaigns. Our sample Request for Campaign Statistics is included here as an Appendix. Vendors also differ in their coverage areas, but outside of only compiling statistics for a given market, accounting for minor variations in market coverage between vendors wouldn't produce substantially more meaningful results.

### **Compiling Data on the Campaign Outputs**

Vendor sales representatives have access to sophisticated software that enables them to compute statistics for their buys. Often they are willing to assist with compiling information from other vendors (even other media) to calculate summary statistics for the campaign as a whole. Of course, this involves sharing detailed data on each buy.

According to Gerald Belton of Fox 50/WRAZ in Raleigh, there is also a formula that can be used to aggregate statistics across vendors, but it involves numerous assumptions.

The formula  $(R1+R2)-(R1*R2/100)*0.96$  where R1 is the reach of medium 1, and R2 is the reach of medium 2. In other words, if a schedule on FOX 50 reaches 60% of your target, it also fails to reach 40% of your target. If an additional schedule on WRAL reaches 60% of your target, then it reaches 60% of the people you already reached on FOX 50, plus 60% of the 40% that you didn't reach on FOX 50.

This assumes that the market size and demographics are similar and homogenous for both vendors. It also assumes that cross-vendor viewership is random. The 0.96 is a generic "fudge factor" to account for this unknown duplication across vendors.

A methodology using similar assumptions can be used to infer market-level data to the local level for jurisdictions to use in reporting for permits and the like. Chrystal Bartlett, of NCDENR at the time, presented a methodology in 2006 (NCDENR 2006). Basically, the reach percentage for the market is applied to the population of a given area to calculate net reach (raw individuals reached). One could also use this methodology to infer statistics for the target audience in the locality from the campaign's performance for the target audience in the market. Again, this methodology assumes perfect homogeneity between the market and the locality. These are rough calculations, but since data are usually either not available or not statistically valid at the jurisdictional level, it is the best methodology currently available for reporting outputs by jurisdiction.

# Evaluating Mass Media Campaigns

Evaluating mass media campaigns for social and behavioral change is not easy. Advertisers of consumer goods have a convenient metric: product sales, which social marketers lack. In theory, good evaluation requires benchmarks for performance to be established at the outset and used to plan the campaign. Often, this step is skipped — instead, we optimize campaigns based on a constrained budget. So, how do we know whether the campaign performed “well”?

As mentioned, there are essentially two types of evaluation metrics: 1) those that measure the outputs of the campaign, or the activities that can be controlled by those conducting the campaign, and the outcomes of the campaign, or 2) the actual impacts on the target audience that come about as a result of the campaign. Obviously, it is easier to measure outputs than audience outcomes. Therefore, the more basic type of evaluation involves evaluating campaign outputs.

Higher-order evaluations of campaign outcomes may be best undertaken in cooperation with other entities or for particular high-impact campaigns. It is important to note that evaluations of campaign effectiveness require time and resources; thoroughly planning the campaign and having sufficient airtime are more valuable than attempting to conclusively demonstrate that each individual campaign had a given amount of impact. This is especially true of attempts to evaluate the ultimate impact of an outreach campaign on water quality. So many factors determine water quality that conducting a conclusive study linking the impacts of a given outreach campaign to a given ambient water quality parameter would be almost impossible and would almost certainly be cost-prohibitive unless undertaken in conjunction with other efforts.

## ***Evaluating Campaign Outputs***

Once multiple campaigns have been conducted, they can be compared with one another, provided the necessary statistics have been obtained and tracked. CWEP obtains and tracks data on reach, frequency, gross ratings points, cost per point, impressions, and cost per impression for both the target audience and the overall population from each vendor, in addition to general information on overall cost of the buy and the number of times the spot(s) ran. Information obtained from other cooperative stormwater outreach partnerships indicates that this is a fairly standard set of metrics.

CWEP has a general rule of reaching 50% of the target audience with a frequency of 3 impressions in a two-week period for any given television or radio campaign. This is because we don't have research or guidance on optimal campaign intensities for our issues. We also do not yet conduct beta testing of our spots to determine how many times in what time interval a spot would need to be received in order to have an impact (i.e., a change in behavior) on a “typical” member of the target audience. CWEP currently uses data on campaign outputs more for planning subsequent campaigns and evaluating vendor proposals (keeping in mind that sometimes we hand-pick which programs we want our spots to run during, and this can reduce the efficiency by which our vendor's buy reaches our target audience).

CWEP uses statistics on the target audience to evaluate the campaign itself, but reports to our partners the figures on the campaign's performance with regard to the population as a whole. This is logical since the jurisdiction can combine this information with other outreach activities and report to the NCDWQ on how well its residents are getting stormwater outreach messages.

That is, it makes sense for campaign evaluation purposes to think in terms of reaching the target audience, but for reporting to external agencies and for evaluating the efficiency of the mass media outreach program as a whole, it makes sense to think in terms of the MS4 population.

## ***Evaluating Campaign Outcomes and Impacts on the Audience***

Evaluating campaign outputs is very useful for reporting purposes, but to determine whether the campaign was “successful,” higher-order evaluations are necessary. There are many types of evaluation and many types of evaluation frameworks. The framework chosen for evaluation is less important than designing a campaign and its evaluation in a logical and stepwise manner (and executing it the same way).

The most basic and simplest way of seeing whether a campaign had an impact on the target audience is to see if any URLs advertised in the spot received greater traffic during or immediately following the campaign. It is also useful to examine the duration of website visits and the number of pages viewed by visitors. Some web traffic tracking software can also show the number of visitors who added the site to their bookmarks or “favorites.” These figures are indicative of salience of the issue on the part of the audience and whether they were motivated to learn more about the issue – an important aspect of social marketing.

A higher level of campaign effectiveness evaluation would involve asking people in the media market about their behaviors. Ideally, this would be random samples of members of the target audience in the market area surveyed before the campaign and after the campaign. The surveys need to be identical to avoid introducing potential errors, except that the post-campaign survey may include a question asking respondents whether they recalled seeing/hearing a spot about stormwater or featuring your message.

Surveys are a common tool used to evaluate the impact of marketing campaigns. CWEP conducted an extensive assessment of its mass media campaigns to determine audience impact, obtaining data on pre-campaign audience knowledge and behaviors and comparing it to data from a second survey conducted after the campaign. We were able to discern significant differences in self-reported knowledge and behaviors before and after our campaigns, as well as significant differences in between members of the target audiences who recalled seeing our TV spots and those who did not. Reports are available on the CWEP website ([www.nccleanwater.org](http://www.nccleanwater.org)) under Evaluation.

Surveys are important evaluation mechanisms, but they can be highly complex and involved. Undertaking a survey with the intention of demonstrating correlations with the media campaign should only be undertaken for highly targeted and well-planned campaigns. Since there are actually a fair number of surveys being conducted on stormwater issues, it may be possible to rely on other surveys or partner with the entities conducting them to conduct the survey more efficiently. Contact the author for more information.

## Questions for Future Research

As with most research, an answer to one question generates many more questions. The following questions developed and might be great ways to elucidate mass media campaign evaluation for stormwater programs.

- Does program branding (icons/characters) have any effect on any outcomes?
- What is the most effective way to communicate about stormwater in a media-saturated environment?
- Is it more or less effective to break down a requested behavior change into simpler actions that are not linked explicitly to the overarching program goal?
- How much awareness and/or knowledge of an issue need to be gained before asking an audience to take action?
- Is it more important to provide tools and incentives to encourage behavior change than to increase understanding of the background causes and impacts of a particular nonpoint source pollution issue?
- How should the total outreach program be designed, including workshops, public relations, and advertising, and how should resources be allocated among these outreach vehicles?
- Should this allocation change over time, and if so, based on what? That is, if audience knowledge is increasing, can program managers at some point begin requesting more sophisticated changes in behavior and/or providing fewer incentives to behavior change?
- What factors should influence reach and frequency goals for behavior change advertising? Is it possible to develop a table like the Ostrow Model of Effective Frequency for behavior change advertising?
- Is there a way to conduct something akin to “brand placement” for behavior change? For example, many advertisements depict inappropriate behaviors (e.g., washing a car in the driveway). Is there a way to get other advertisers and television programs to depict behaviors that have fewer stormwater impacts instead of conventional behaviors?

In general, there is much to be learned about how to use media most effectively to persuade people to change behaviors.

## Conclusions

Radio and television advertising can be an important “piece of the puzzle” when it comes to educating the public about behaviors that impact stormwater. However, stormwater and watershed management are somewhat new to mass media advertising, and there is much to be learned and much that needs to be studied to help local governments and advocacy groups conduct effective campaigns. Most importantly, media campaigns need to be conducted holistically, with consideration to the goals of the stormwater program and the characteristics of the community and local environment. Media providers are usually extremely happy to provide campaign planning advice as well as value-added components that can substantially enhance an advertising campaign’s effectiveness.

Time spent researching the issues, behaviors, and messages for the campaign is time well spent. Evaluating the *impact* of mass media campaigns on the target audience is complex but easier when campaigns have been well planned, thoroughly researched, and efficiently executed. Due

to the expense and resources necessary to conduct such higher-order evaluations, local governments should first ensure that they are collecting, tracking, and reporting data on basic campaign *outputs* (e.g., impressions, reach, and frequency). Not only will tracking campaign outputs facilitate permit-driven reporting and future campaign planning, such data can be combined with survey data on public behaviors to understand HOW MUCH media advertising it takes to change public behavior. Eventually, this body of data may be sufficient to help establish goals for intensity of local outreach efforts.

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## Additional Resources

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# Appendix: Sample Request for TV Rates (Availabilities)

**Date:** 8/16/09  
**Contact:** Sarah Bruce  
**E-mail:** sbruce@tjcog.org  
**Phone:** (919) 558-9343  
**Fax:** (919) 549-9390  
**Client:** NC Clean Water Education Partnership  
(Fiscal agent: Triangle J Council of Governments)

**Target Demo:** Adults  $\geq$ 35, homeowners, higher levels of education & income

**Programming:** Prefer news and any shows on homes and home care

**Service Line:** Yard care and stormwater; planting trees

**PSA:** Buffer Improvement (:30) – will be *updated* version

**Expected Flight:** 11/23/09 to 12/03/09

**Submission** Tuesday, August 25, 2009

**Deadline:**

**Daypart Breakout:**

**Weight Level:**

**Projection:** May 09 - HUT/PUT Nov 08

**Estimated Gross Impressions:**

(for individuals  $\geq$ 18: for Target Demo: )

**Estimated Reach (%):**

(for individuals  $\geq$ 18: for Target Demo: )

**Estimated Frequency:**

(for individuals  $\geq$ 18: for Target Demo: )

**Estimated CPP:**

(for individuals  $\geq$ 18: for Target Demo: )

Please tell me also:

**What dub format you prefer:**

**The address where you would like the dub to be sent, or if you will pick it up.**

E-mail submissions requested.

# Appendix: Request for (TV) Campaign Statistics

**Vendor (your station/affiliation):**

Campaign run start:

Campaign run close:

Campaign cost:

Invoiced cost, if different:

Number of spots run:

Number of these that were “freebies”:

**GROSS IMPRESSIONS** bought for Target Demo:

Book used:

Book weeks used:

Campaign Summary Statistics

Use post-campaign actual (not pre-campaign estimated) figures.

	Campaign Stats for Viewing Population (please use individuals, NOT households)	Campaign Stats for Target Demographic
Reach (percent)		
Frequency		
Gross Ratings Points		
Cost Per Point		
Gross Impressions		
Cost Per Thousand		

Definition of target demographic (age and gender):

Number of **individuals** in target demographic in viewing area:

Does this include non-TV viewers?

Definition of viewing population (age):

Number of **individuals** in viewing population in viewing area:

Does this include non-TV viewers?