



Image caption: Grass clippings on roads can be washed into the stormdrain when it rains, and can cause pollution in receiving streams.

## Educating the Masses Using Mass Media for Stormwater Pollution Prevention

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**Abstract:** Trying to educate the largest number possible of the general population is always difficult. In the rapidly growing population of Northwest Arkansas, can paid advertising still influence people? Using electronic media developed for a neighboring state, commercials aimed at increasing awareness for pollution prevention activities were utilized. The message platforms were cable television and social media. After several weeks, voluntary electronic survey data demonstrated raised awareness and a behavioral influence on pollution prevention practices. Small budgets did not mean small impact.

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### Key Points:

- Effective media outreach can be accomplished on a limited budget.
  - Commercials increase knowledge.
  - Behavioral changes toward pollution prevention can occur from educational media.
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## Introduction

The University Of Arkansas System Division of Agriculture Cooperative Extension Service (UACES) is always interested in trying something new and innovative, and there was a project presented at a regional conference that deserved further investigation. The commercials for the City of Tulsa's outreach campaign to mediate runoff and prevent urban water pollution sources seemed well-designed. The City had already focus-group-tested the animated characters and commercials, so adapting the materials for the neighboring Northwest Arkansas area seemed logical.

An electronic media campaign like this one was new territory for UACES, especially using animated characters. While Tulsa was very happy with their campaign, the commercials ran mostly on public access channels with limited estimates on viewing by the general public. The electronic media avenues in Northwest Arkansas would include cable television and social media. Survey data would look at behavior change.

Contracts were established with Red Water Watch, a division of Grasshopper Productions. This company did the original design for the City of Tulsa's outreach campaign. Three separate commercials would be rebranded for the Northwest Arkansas area. The commercial series consisted of scenarios involving a turtle and a fish discussing best management practices (BMPs) with other characters who were about to pollute the storm drainage system. The animated commercials could be tailored for a fraction of the original production costs in a reasonable time frame. In essence, the project hoped to demonstrate that effective television commercials could be utilized in a cost effective manner, educating the public and result in actual behavioral changes.

## Methods

The final products included three 30-second commercials and their short 15-second condensed spots for distribution (see UASDA, 2017). The videos were redesigned by having the original production company replace logos and contact information on the animated sign to reflect the Northwest Arkansas project information. Each piece focused on a different topic: (1) illicit discharge because of dumping into drains, (2) dead zones caused by improper lawn waste management, and (3) erosion issues as part of construction.

Cox Communication would be the avenue for distribution to the public. Cox Communication advertising regions were very similar to county geographical lines allowing the commercials to be seen by mainly residents within the Beaver Lake, Elk River, and Illinois River watersheds. Social media promotion via Facebook and Twitter would be a secondary outlet for the developed media and used for evaluation distribution.

The educational commercials ran from November 28,

2016 through April 9, 2017. The commercials ran on 8 different networks, 4 times a week. For cost saving, no particular shows were selected, just the networks. No spots aired between the hours of 11 pm – 5 am. Networks that aired the commercials were The Weather Channel, TBS, ESPN, FreeForm (Previously ABC Family), Food Network, HGTV, History, and Nickelodeon. FreeForm was left out of rotation from Christmas thru mid-January as spots were shown on the Hallmark Network instead. The networks were chosen because of demographic information provided by Cox. This line up allowed for a mix of children to adult viewers, male and female audiences to be exposed to the messages. A total of 608 commercials were shown for the 19 week period for an average of 32 commercials a week. Cox data showed that nearly 65 thousand households were reached.

For the social media side of the campaign, Facebook was the primary outlet. Closed captions were added to the different pieces for those who view without sound. All six videos (15-second and 30-second spots) were posted throughout winter beginning in December 2016, with the last post on March 22, 2017. Each video was shared an average of three times with views growing from 46 on the first post to 1,520 views on the later posts.

To determine effectiveness of the media campaign a voluntary evaluation piece was utilized. The survey materials and questions were reviewed for validity by an extension specialist and the survey was submitted and approved by the University of Arkansas Internal Review Board. The 12 question survey (Table 1) was developed and analyzed using Qualtrics software. The survey was emailed to over 600 individuals via two different list serves of stormwater, erosion, and educational contacts that have voluntarily signed up to receive information on workshops and trainings. The survey was also posted to Facebook (paid promotions) and Twitter. Initial recipients were asked to share the survey among their contact lists.

## Results and Discussion

There were no anticipated results for the survey since there was a not a similar media campaign in this region previously conducted. Any received feedback would be valuable. Overall, 167 individuals responded to the survey with only 34% saying they subscribed to Cox Cable. When asked if they recognized the characters in the photo - the main characters in the commercials (Figure 1), 17% said that they did. Of those respondents, 38.5% said they had seen the characters on cable television but 73% had seen them on social media as well. When given a Likert scale to determine how well individuals liked the characters in the commercials, 77% reported they either somewhat liked or liked the characters a great deal. Only 23% of the respondents said that they neither liked nor disliked the characters. No one reported disliking the characters. Demographic information

Table 1. List of questions asked in the participant survey.

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Do you subscribe to Cox Cable?

Check ALL method(s) you use to watch television (TV). (or NA if you do not watch)

Have you seen these characters on commercials or videos on television, social media, or a website?

Where have you seen these characters?

How well do you like the characters in the commercials/videos?

After viewing the commercials (or video), do you understand the actions you need to take to prevent pollution from entering the water?

Please describe how you dispose of the following household waste.

Would you like to see more educational videos like this to help you learn how to reduce water pollution?

Are there other places we should share messages like this? Please share your ideas and/or other comments.

\* 3 other questions asked for demographic information according to age, sex, and location.

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showed an equal distribution of respondents by age and sex.

Although the goal of distributing information to the masses seemed accomplished, was it impactful and cost effective? Questions were asked to see if a change in behavior occurred because of the messages in the commercials. The question asked about the primary messages of dumping chemicals in storm drainage ways and putting leaves and grasses in ditches or down the drain. The responses were quite surprising. Of those who recognized the characters in the commercials, almost 8% said they stopped dumping chemicals because of what they learned in the videos; 19% said they stopped putting leaves and grass in ditches because of the videos. When asked “after viewing the commercials, do you understand the actions you need to take to prevent pollution from entering the water?”, 38.5% said yes, 0% said no, 3.8% were unsure, while 57.7% said they already knew how to prevent pollution. An overwhelming 100% of respondents wanted to see more videos like these to help learn how to reduce water pollution.

The cost to produce and air these commercials was minimal. Having the commercials rebranded, viewed on cable, posted to social media, and evaluations submitted and data analyzed was accomplished for less than \$4,800. However, this amount does not include the time and salary of the project coordinator.

### Conclusions

Overall, the outreach methods and commercial messaging was a success. Because the Northwest Arkansas areas of Benton and Washington County are similar geographically and demographically to the Tulsa area for which the commercials were originally produced, there was no surprise in the positive receipt of the characters and messages. Raising awareness and invoking change primarily through



Figure 1. Image of two of the main characters in the commercials.

paid advertising was a new and worthwhile venture. The likability of the characters lets us know that the investment was a positive one and that social change can occur from well-structured media methods without completely recreating the wheel. The rebranding of the materials was also extremely cost effective demonstrating that effective media outreach can be accomplished on a limited budget. Total costs in relationship to household reaches is about 7 cents per home, much less than the cost of a stamp.

The geographical and demographical similarities of the outreach areas made the commercials logical to modify and use. This campaign could potentially be used in many different areas of the state and region with only minor modifications. The production company was eager to work with new clients, which made the project enjoyable to organize. Other groups looking at behavioral changes to reduce water pollution might benefit from these commercials.

If there was an opportunity to repeat this project, some changes might be beneficial. Survey results showed 41% of respondents watched television through an online format so online advertising would need to be explored. National surveys following the 2016 elections showed that many people received news information primarily from social media foretelling the need for more budgetary allotments to social media expenditures. The electronic formatting of educational messages needs to be utilized more frequently, which is why this type of project should be repeated.

### References

- Northwest Arkansas Stormwater Education. Facebook. <https://www.facebook.com/NWastormwatered/>, accessed 2017.
- Qualtrics. Development Company: Qualtrics. First release: 2005. Copyright 2018. Provo, Utah, USA. April 2017. Available at: <https://www.qualtrics.com>
- (USDA) University of Arkansas System Division of Agriculture. YouTube. <https://www.youtube.com/user/ARextension/videos>, accessed 2017.