



**CITY OF CHICO STORM WATER MANAGEMENT  
PUBLIC EDUCATION AND OUTREACH PROGRAM  
2010 – 2011**

Report Prepared by Jennifer Oman-Payne, Oman Communications,  
and Dr. Diane Schmidt, Professor at California State University Chico, June 2011

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## Introduction/Project Summary

The following report is documentation of the City of Chico's Storm Water Management Education and Outreach Program (SWM EOP) from August 2010 – June 2011. The 2010-2011 City of Chico's SWM EOP has built upon the work of the Chico Urban Streams Alliance, *Clean Creeks Project*, Education and Outreach Program (Chico USA EOP) 2005-2007 and the SWM EOP 2008-2010. The Chico USA EOP was funded under a CalFed grant and developed through the initial cooperative efforts of the following organizations: City of Chico, Butte Environmental Council, Big Chico Creek Watershed Alliance, and Kennedy/Jenks Consultants. The *Clean Creeks Project* addressed urban runoff pollution issues in the area of Chico, California through conducting a public awareness multi-media campaign and one-on-one outreach to potentially polluting businesses.

Jennifer Oman-Payne, of Oman Communications, served as Consultant to the City as the Program Coordinator of the SWM EOP according to the City of Chico's Storm Water Management Plan. The appropriate City of Chico staff approved all activities and materials produced. The City of Chico SWM EOP has extended the impact of this program from the previous year under direction of Oman Communications, while adding creative and relevant methods for outreach, collaboration and public involvement. The success of the program has been demonstrated by a raised awareness in the community and an increased participation of individuals, businesses and organizations in the local area. (See Survey Results).

Oman Communications, dedicated to increasing levels of awareness and behaviors achieved through prior work on this project, has extended the goals and objectives to encompass more members of the public, students, and businesses that can help prevent cigarette litter of waterways. The overarching goal has been to promote best management practices (BMPs) for prevention of urban runoff. The program has grown this year by involving student groups that have shown leadership on anti-butt litter awareness and the prevention of runoff pollution during charity car wash events at school sites. Special outreach methods were employed in collaboration with the Chico Downtown Business Association (DCBA), reaching local businesses through dissemination of cigarette butt litter prevention materials and give-aways.

The 2010-2011 SWM EOP has met the following goals and objectives:

Goal #1: Enhance community appreciation and stewardship of Chico's local waterways through education of the general public on best management practices (BMPs), focusing on Eco-friendly car wash BMPs and anti-cigarette butt litter outreach.

Goal #2: Engage and educate the public on behaviors that will help prevent storm water runoff pollution through fifth-grade classroom instruction, posting of information on a website and Facebook, and involving students in outreach to the public.

Goal #3: Encourage the public to adopt behavioral changes to help reduce and/or prevent storm water runoff pollution through a media blast campaign involving print and broadcast ads/PSAs (in Hmong and Spanish), booth outreach, website, Facebook, calendar, classroom instruction, posters, brochures, pocket ashtrays, CWBP Program, Cal Water inserts, public knowledge survey and educational give-aways.

Goal #4: Encourage members of the public to participate in water quality volunteer opportunities through the distribution of Stream Team and Creek/Park Clean up dates in the 2011 Clean Creeks Calendar; through outreach to the public at public events; through posting online community website links and Creek Watch Hotline info, and providing a dedicated Creek Watch Hotline.

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## **Report of Activities**

### **Public Presentations/Community Events**

#### **Booth Outreach**

The Storm Water Management Education and Outreach Program (SWM EOP) Consultant, Jennifer Oman-Payne provided program outreach at the following public events in 2011:

- 1) Soroptimist Home, Garden, Antique and Car Show –March 19-20, 2011**
- 2) Endangered Species Faire – May 7, 2011**
- 3) Chico Science Fair – March 30-31, 2011**
- 4) Thursday Night Market – May 19, 2011**
- 5) Silver Dollar Fair – May 26-30, 2011**

Runoff pollution prevention educational materials such as the Chico Clean Creeks 2011 Calendar, Keep Chico Clean Postcards, and SWM EOP brochures and posters for the general public, Landscape Contractors, Carpet Cleaners, Pressure Washers and Concrete & Masonry Contractors were disseminated at the public events listed above. One-on-one outreach to booth passersby included information on Best Management Practices (BMPs) for prevention of runoff pollution. All print materials included the City Storm Water Logo.

The booth also included an urban watershed “Fishing Game” for young and old to catch a wooden fish, or sometimes a pollutant, and answer a question regarding BMPs for prevention of run-off pollution to win a prize.

One-on-one outreach involved staff from Kids & Creeks, a hands-on science education non-profit organization. This collaborative approach enhanced outreach efforts.

Data was collected from the public through the use of a survey questionnaire, which could be completed at the booth. The 2011 survey questionnaire had 8 questions. Give-aways, including environmentally friendly merchandise such as Safe Spray bottles, were used as inducements to take the survey.



The SWM EOP booth at the Silver Dollar Fair, May 26-30, 2011. Passersby take water quality public knowledge surveys, play educational games and receive environmentally-friendly give-aways. Pictured are two Kids & Creeks staff members distributing Safe Spray bottles.



Completed surveys totaled 204 this year, exceeding the number proposed.



## Public Involvement

During the 2010-2011 SWM EOP a collaborative approach was applied to public outreach and involvement. Students and various organizations cooperated to provide outreach to the public in support of the City's SWM EOP.

Representatives from local, environmental education, non-profit groups (Butte Environmental Council and Kids & Creeks) assisted with public education and outreach at the booth during the five public outreach events (Home & Garden Show, Endangered Species Faire, Chico Science Fair, Thursday Night Market, and Silver Dollar Fair 2011)

CSU Chico students, and Chico Unified School District (CSUD) parents and staff worked as volunteers for the Fall 2010 and Spring 2011 *Clean Creeks in the Classroom* program. Chico State Recreation and Parks Department (Jon Hooper, Professor) provided extra credit for students who chose to volunteer. The following organizations and agencies provided educational field day stations for the *Clean Creeks in the Classroom/ Kids & Creeks* program: Department of Fish and Game, Chico State Biology Department (Joe Slusark), and Mechoopda Tribe (Ali Knight).

Approximately thirty parent volunteers joined the *Clean Creeks in the Classroom/ Kids & Creeks* field days and assisted with student supervision and logistics. (Kids & Creeks is the sub-contracted organization that implements the *Clean Creeks in the Classroom* program.) Approximately forty-five volunteers in total gave of their time for the Field Day Instruction component.

The Marsh Jr. High School KLEAN Team (Kids Leading Everyone Against Nicotine) partnered with the SWM EOP to provide outreach to the public on the impacts of cigarette butt litter on water quality. This student group gave an interview on public radio and collaborated with the City's SWM EOP at the Endangered Species Faire to raise awareness of the butt litter pollution issue. Artist, Gregg Payne, created the character, Stanky the Butt, who appeared in SWM EOP posters, ads, booths and press interviews, in support of the anti-butt litter message. (The radio interview was broadcast on KCHO on May 13, 2011.) (See Appendix C – Radio Interview).



The KLEAN Team and Stanky the Butt at Marsh Jr. High School.

### **Collaboration/Contributions**

1. CUSD Transportation Department and/or parent volunteers transported participating *Clean Creeks in the Classroom (CCC)* CSUD students to and from field trip sites.
2. Marsh Jr. High School KLEAN Team students collaborated with the SWM EOP to raise public awareness of the butt litter/runoff pollution issue. The students' work to clean up cigarette butt litter in parks and public spaces throughout Chico was recognized by the City's SWM EOP and the press. The group worked with Stanky the Butt and Consultant, Jennifer Oman-Payne, to provide outreach at the Endangered Species Faire and to give a joint radio interview on KCHO.



3. The SWM EOP highlighted the Stream Team Program through a dedicated web page on the City's program website and dissemination of the 2011 Clean Creeks Calendar, which listed monitoring dates for 2011. This collaboration with the Stream Team provided public information on volunteer opportunities for water quality protection.
4. The general public was invited to participate in the 2011 Chico Clean Creeks Calendar project by contributing their photographs of Chico urban creek scenes. Chico High School Photography students contributed five photos to the calendar in 2011, and incorporated the project into their curriculum.
5. Clean Water Business Partner, Andy Willhoit, owner of Home Prep and Safe Spray, worked in collaboration with Oman Communications to produce the 2011 Chico Clean Creeks Calendar. Willhoit contributed salient educational content on BMPs and resource links for public referral. He oversaw the calendar production and served as a public spokesperson for the runoff pollution prevention message of the calendar.
6. Cal Water collaborated with the SWM EOP on the calendar project. The month of May featured Water Conservation messages as they relate to storm water BMPs.

7. The Downtown Chico Business Association (DCBA) partnered with the SWM EOP to reach downtown business owners with runoff pollution prevention/anti-butt litter messages, and to promote the Clean Water Business Partnership (CWBP) Program. Constant Contact messages were sent to DCBA members in April, encouraging them to provide ashtray receptacles for their customers.

*The Following News & Information from the City of Chico  
Is Being Provided as a Courtesy to DCBA Members*

**Anti-Butt Litter Outreach**

On Friday, April 22 a team from the Storm Water Management, Education & Outreach Program (SWM EOP), a group funded by the City of Chico will be canvassing the Downtown Chico area.

They will be giving away pocket ashtrays and educating people about the importance of using ashtrays for the protection of our creeks and water quality.

April 21, 2011

For more information, contact:  
[www.knerchicobean.org](http://www.knerchicobean.org)

A person in a cigarette butt costume, which is a yellow cylinder with a white filter and a black face, stands on a sidewalk. The costume has black arms and legs. The person is holding a cigarette in their right hand. The background shows a street with trees and a building.

© Gregg Payne 2011

The logo for the Downtown Chico Business Association, featuring a stylized building and the text "Downtown Chico Business Association".

Downtown Chico Business Association  
330 Salem Street  
Chico, California 95926  
530.345.6500  
[www.downtownchico.com](http://www.downtownchico.com)

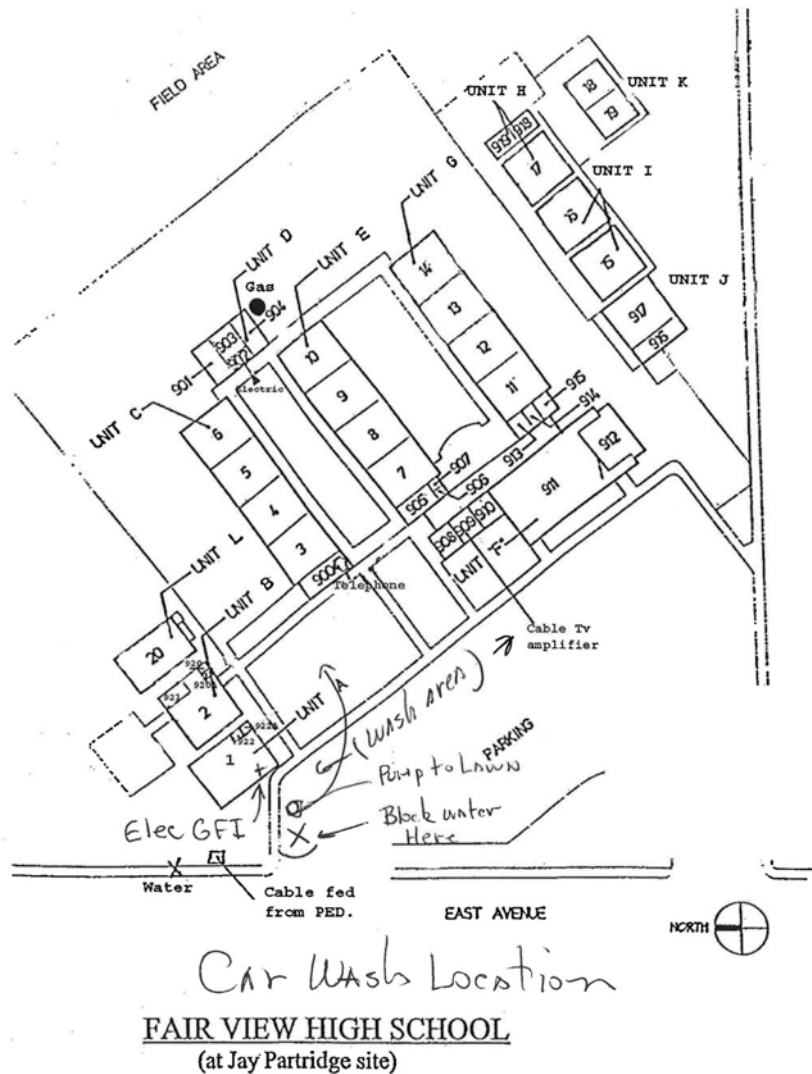
8. Local musician, Jim Brobeck, allowed the use of his original anti-butt litter song in association with Stanky the Butt's outreach messages for protection of water quality through prevention of cigarette butt litter.





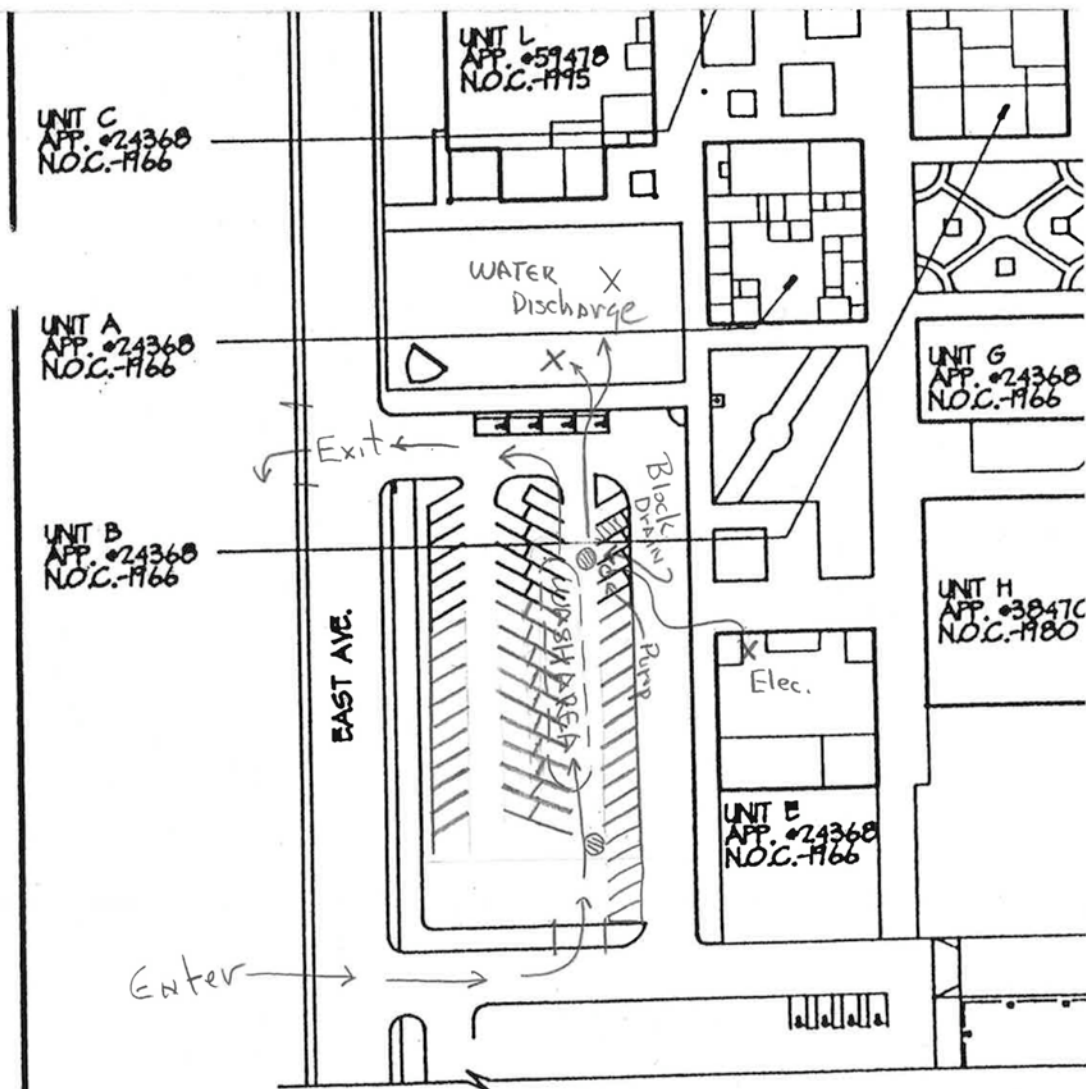
8. California State University Sustainability Interns will include eco-friendly car wash BMPs in their Green Event Guide. (This guide was to originally planned to be released in Fall 2010. The project is behind schedule and will be released in Fall 2011.)

9. For eco-friendly car wash fundraiser events CUSD provided site maps for middle and high schools to use when setting up their City of Chico long-term loan car wash kits. Fair View, Chico, and Pleasant Valley High School ASB Clubs are stewards of the kits for their schools, and will use them at car wash events held on site. (A map was not created for Chico High School as the video produced by the SWM EOP was filmed at the school and indicates the best placement of the kit & car wash area)



Updated 9/2006





PLEASE

THOMSON & HENDRICKS, A

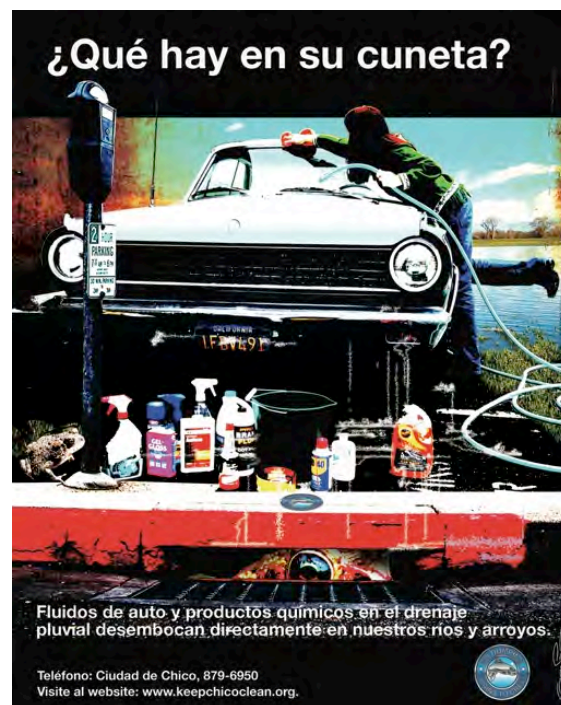
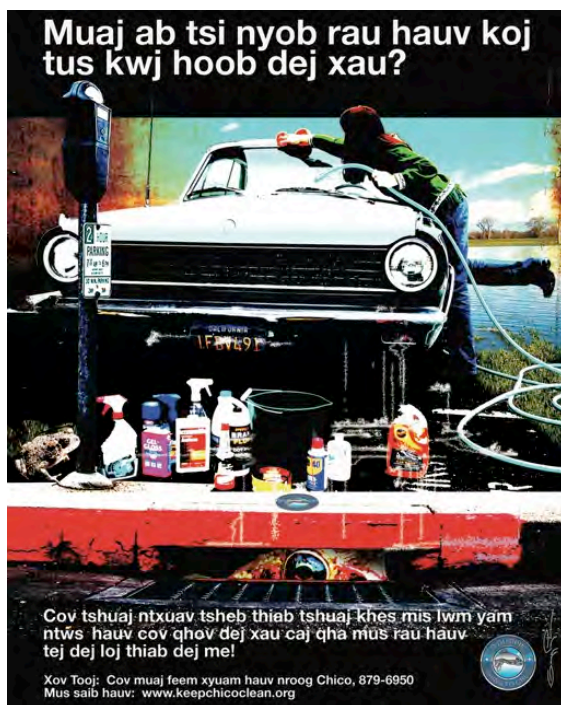
PLEASANT VALLEY HIGH SCHOOL

## Media Campaigns

A multimedia outreach campaign was conducted and outreach materials/media included public education and outreach messages such as but not limited to:

- *Remember, only rain down the storm drain*
- *What's in your gutter is in your Creek*
- *Water that flows into the gutter drains directly to our creeks*
- *Never fertilize or apply pesticides when rain is predicted*
- *Clean up after pets*
- *Never dump anything down a storm drain or gutter*
- *Wash cars at car wash or on lawn rather than in driveway*
- *Dispose of cigarette butts in ashtrays —never toss onto the ground, street, sidewalk or gutter.*
- *Eco-friendly car washes prevent soap, chemicals and trash from being washed into storm drains.*

Building upon the results of the 2010 citywide public knowledge survey, existing outreach materials and media were adapted and new materials were developed. The 2011 messages were broadcast through nine different media channels. Posters were translated into Spanish and Hmong.



Posters, educational display units and appearances by educational character, Stanky the Butt, conveyed public outreach messages and promoted the use of pocket ashtrays for proper cigarette butt disposal in downtown Chico during April and May 2011. Seven hundred and fifty pocket ashtrays were given away to the public. The majority of pocket ashtrays were distributed to smokers during one-on-one outreach at the Thursday Night Market in spring 2011. Some pocket ashtrays were also left at downtown coffee shops and bars (Naked Lounge, LaSalles, The Banshee) for proper cigarette disposal. Using

the media blast method, this one-on-one anti-butt litter outreach was conducted during April and May, while TV and radio messages were broadcast regularly, along with print ads in weekly newspapers. In addition, there was considerable press coverage of the SWM EOP's runoff pollution prevention messages during April and May 2011.

Regarding public response to the media campaign, the 2011 survey results show:

"...in general, the EOP outreach activities have successfully reached the Chico residents, as well as having expanded outside into neighboring communities. This is important because the City of Chico attracts visitors from neighboring communities whose behaviors impact the Chico community waterways. These results suggest that visitors are also reached by the EOP activities.

More specifically, the data suggest that the 2011 EOP outreach activities have generally reached an increased percentage of respondents than the past... The greatest exposure seems to have come from television, storm drain markers, and booths at public events as outreach sources. ... 50-54 percent of the respondents identified having seen or heard messages from television. Further, the data results also show 15 to 25 percent of the respondents identified seeing or hearing messages from the radio, 15-20 percent from daily newspapers, 6-12 percent from weekly newspapers, and 15-24 percent from posters." (Schmidt, 2011 Convenience Survey Report)

Newspaper advertisements with anti-cigarette butt litter messages were developed. The ads also contained a general storm water quality message, the program website url and contact information. The ads were printed in the *Chico News & Review* the week of April 28<sup>th</sup>, and in the *Synthesis*, a weekly newspaper, April 25<sup>th</sup>- May 8<sup>th</sup> 2011. In addition a press release was printed in the *Synthesis* to coincide with the ad placement. The public message focused on the threats to water quality that butt litter poses.



Gutters and Storm Drains Flow Directly to Creeks

Cigarette butts can take over ten years to biodegrade. They contain toxins that are harmful to wildlife and water quality.

Phone: City of Chico, 879-6950  
Visit: [www.keepchicoclean.org](http://www.keepchicoclean.org)



(See Appendix C Newspaper Ads/Public Service Announcements/Press Coverage)



The Contractor used three City-supplied TV Public Service Announcements (PSAs) developed under the Chico USA EOP, and modified under a previous contract. Oman Communications coordinated more than 271 thirty-second broadcasts on the Fox 20 TV network during the period 04/25 to 06/02/10. The PSAs contain educational information on the use of BMPs to protect water quality. Broadcasts totaled 94 English language prime time “spots”, 74 non-profit PSA English language “spots”, 64 Spanish language prime time “spots”, and 39 non-profit PSA Spanish language “spots”.

The Contractor used the City supplied radio PSA developed under the Chico USA EOP and modified under a previous contract. The English and Spanish versions of the 60-second PSA contain educational information on the use of BMPs to protect water quality. The Contractor coordinated a total of 157 radio spots that were broadcast on KMXI, KHSL, KCKS, KHHZ and KPAY from 04/30 to 06/30/10, with a concentrated broadcast from 4/30 to 05/08/11.

PSAs were approved prior to being broadcast. All ancillary materials were approved prior to being printed. All printed materials contained the City SWM EOP logo.

3,500 Chico Clean Creeks 2011 Calendars were printed and distributed to the general public. See Outreach section for details.



### **Storm Water Classroom Presentations**

The SWM EOP Classroom Outreach component of the program, *Clean Creeks in the Classroom* (CCC) was implemented in fifth-grade classrooms in Chico public schools and consisted of two one-hour presentations to each classroom on two different class days, and one four-hour field day per classroom. Lessons and activities meet select California State Fifth-Grade Education Standards. Lessons included:

- Activities that promoted watershed awareness and hands-on experience.
- Learning objectives that were easily translated into runoff pollution prevention behaviors.
- Classroom instruction that was linked to existing resource management efforts to enhance opportunities for youth to apply learned content and participate in on-going community events.
- Instruction that encouraged collaboration and informed stewardship.
- Opportunities for students to interact directly with their peers in an outdoor setting where knowledge gained in the classroom could be implemented through hands-on activities.

The Clean Creeks in the Classroom curriculum may be viewed in Appendix B.

Letters introducing the curriculum to parents of students in the classrooms served were translated to Spanish. English and Spanish versions were provided to classroom teachers.

A total of sixteen fifth-grade classrooms participated in the CCC Program:

Eight classes were served in the fall 2010

- One class at Four Winds School
- One class at Parkview Elementary School
- Two classes at Chapman Elementary School
- Two classes at Emma Wilson Elementary School
- Two class at Citrus Elementary School

Eight classes were served in the spring 2011

- Two classes at Rosedale Elementary School
- Two classes at Chapman Elementary School
- Two classes at Hooker Oak School
- Two classes at McManus Elementary School

Approximately 500 fifth-grade students were served for a total of 72 hours of CCC instruction during the 2010-11 school year. The field trip portion of the program consisted of 9 field trips, with two classrooms attending each field trip, to Five Mile Recreation area and Verbena Fields. *Kids & Creeks* staff, student and parent volunteers conducted classroom visits and field days. Program Coordinator, Jennifer Oman-Payne, and Kids & Creeks Coordinator, Scott Itamura, trained the staff and volunteers, and provided classroom/field day instruction. The staff included two credentialed teachers.





*Clean Creeks in the Classroom* 5<sup>th</sup> graders and Fish & Game Biologists search for aquatic insects to determine the health of Big Chico Creek. 5-Mile Recreation area, Spring 2011.



*Clean Creeks in the Classroom* 5<sup>th</sup> graders learn about the riparian habitat at the Mechoopda station, 5-Mile Recreation area. Spring 2011.





*Clean Creeks in the Classroom* 6<sup>th</sup> graders learn about erosion and its effects on our waterways. Chico Country Day School. Spring 2011.

In Spring 2011, Kids & Creeks extended the Clean Creeks in the Classroom Program, in collaboration with the SWM EOP and Neighborhood Services for the City of Chico. The urban watershed program was adapted to 6<sup>th</sup> grade education standards and students participated in service learning through restoration to an urban greenway site at 9<sup>th</sup> Street and Hazel. Chico Country Day School students learned about the effects of erosion on waterways and planted native plants at the restoration site. (Detailed report provided to Shawn Tillman, Senior Planner, Neighborhood Services.)



*Clean Creeks in the Classroom* 6<sup>th</sup> graders learn about the riparian zone and stewardship through restoration. 9<sup>th</sup> St. & Hazel. Spring 2011.

## Clean Water Business Partnership Program

Since 2006, when the Clean Water Business Partnership Program (CWBP) was initiated under the Chico USA EOP, the program has grown from eight to thirty Clean Water Business Partners. During the 2010- 2011 year, the program grew with the addition of four new partners, and the number of Pressure Washers has increased from one to three after targeting this group in 09-10.

In spring 2011 a new brochure, survey and pledge form were developed for Concrete and Masonry Contractors. (See Appendix D). A&A Concrete Supply is the first CWBP pervious concrete supplier.



Tree frog, Monarch and Pipevine Swallowtail.  
Aerosol art on bridge support, Lindo Channel.



**Concrete  
& Masonry  
Contractors  
Business  
Partners**

**WHAT IS URBAN RUNOFF?**

URBAN RUNOFF can be harmful, and even lethal to our creeks. Water in our gutters drains to our creeks and groundwater. For example, whenever cars are being washed, and when driveways and sidewalks are hosed down, fertilizers, pesticides, litter, and pet waste, go into the creek as urban runoff.

**Support our  
Community...  
Help Keep Chico's  
Creeks Clean!**

Butte County Public Works Department  
Solid Waste and Recycling Division  
[www.recyclebutte.net](http://www.recyclebutte.net)



The Storm Water Management Education and Outreach Program is funded by the City of Chico  
[www.keepchicoclean.org](http://www.keepchicoclean.org)



Oman Communications maintained the current City of Chico Clean Water business Partnership (CWBP) Program by providing brochures for educational outreach to partners' customers; the 2011 CWBP logo; and 2011 Chico Clean Creeks Calendars to new CWBP's. Free advertising was provided to 2011 CWBPs on the CalWater insert, the calendar, and the storm water web site [www.keepchicoclean.org](http://www.keepchicoclean.org).

A California Water Service Company (Cal Water) insert promoting the CWBP Program was mailed to customers during the March 2011 billing cycle. The insert included a call



to action to the public to help protect local water quality by patronizing CWBPs, a general clean water message, and the website url and telephone contact information. Approximately twenty-seven thousand inserts were mailed. The Contractor coordinated the mailing with California Water Service. Content was approved by the City of Chico prior to printing (see Appendix D).



**CLEAN WATER BUSINESS PARTNERS 2011**

**Work together to keep  
Chico's creeks and riparian habitat clean.  
Make a statement against pollution.  
Support businesses that support the community.  
Hire Clean Water Business Partners  
for your commercial and residential services.**

**Water that flows into the gutter, drains directly to our creeks.**  
For more info, visit: [www.keepchicoclean.org](http://www.keepchicoclean.org) City of Chico, [rburgi@ci.chico.ca.us](mailto:rburgi@ci.chico.ca.us) 879-6950



To further acknowledge the commitment of the CWBPs to the protection of water quality, vinyl decals portraying the CWBP 2011 logo were distributed to the 2011 CWBPs in Spring 2011.





Local businesses participating in the program are:

**Carpet Cleaners**

Carpet Restoration  
Clean King by DeHart  
Cleanrite Buildrite  
Dean's Upholstery & Carpet Care  
Lincoln Cleaning & Restoration  
Service Master Select  
SJS Carpet Cleaning  
Sunrise Carpet Cleaners

**Landscape Contractors**

Dugan's Landscape  
East Meets West Landscaping  
Ewing Irrigation  
Gaia Creations Ecological Landscaping  
Greenscape  
KCL Custom Landscapes  
Lawns-R-Us  
Lifescapes  
Performance Design & Landscape

**Nurseries**

Floral Native Nursery  
Geffray's Gardens  
Native Springs Nursery  
Spring Fever Nursery & Gardens

**General Contractors**

Home Prep  
Chico Green Builders

**Pressure Washer Contractors**

Olli's Pressure Washing  
Clean Green Industries  
Michael Watson Painting

**Vehicle Maintenance Contractors**

Russ' Auto Detailing  
Covert Window Tinting

**Equipment Suppliers**

Industrial Equipment

**Pervious Concrete**

A&A Concrete Supply

Recruitment of new Clean Water Business Partners involved calling potential CWBP's to query and invite them to participate in program. Surveys and pledges were reviewed with potential new partners. Contacts and data were tracked. Onsite visitations and phone interviews were performed to answer questions regarding the CWBP program.

## Outreach materials developed from 2006 to 2011

(See samples in Appendices A and C):

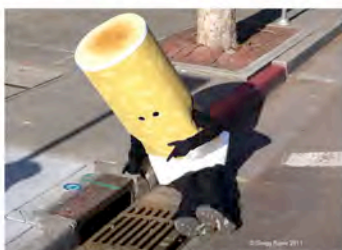
**Posters** – 8 posters – Three of the posters contain the general messages with image of car wash wastewater draining into the gutter, image of oil spill on 1-Mile Big Chico Creek swimming area, and image of landscaping tools and toad in the back of work truck. Four of the posters target the cigarette butte issue and read, “Keep your butt out of the gutter,” and “Water that flows into the gutters drains directly to the creeks.” The sixth poster developed under the 08-09 contract targets the car wash issue. Two new posters were developed in 2011, featuring Stanky the Butt, with the message “Keep your butt out of the gutter!” Five posters were translated into Spanish and Hmong.

## PHOTO ALBUM

### THE ADVENTURES OF STANKY THE BUTT



Ouch! I hate it when I get flicked out of car windows!



I went down right here and ended up in the creek!



Whoa that was a close one! I almost became a statistic.



Oh no! There goes one of my little friends. Brrr.. See ya pal!



Does this outfit make my butt look big? Hey, who's that?



We appreciate business owners that provide public ashtrays!

**Gutters and storm drains flow directly to creeks.**

**PLEASE USE ASHTRAYS!**



Cigarette butts can take over ten years to biodegrade.

They contain toxins that are harmful to wildlife and water quality.

Phone: City of Chico, 879-6950 Visit: [www.keepchicoclean.org](http://www.keepchicoclean.org)

**TV Commercials** – Three runoff pollution prevention 30-second commercials: One addresses related landscaping pollution causes, such as fertilizers and pesticides. The other addresses auto fluids, and the third address general pollutants, such as litter, pet waste, car washing (soap, etc.). The commercials are posted online at [www.keepchicoclean.org](http://www.keepchicoclean.org) and are broadcast annually in Spanish and English.

**Radio Commercial** – One radio 60-second commercial that addresses general pollutants, such as litter, cigarette butts, pet waste, car washing (soap, etc.) is posted online at [www.keepchicoclean.org](http://www.keepchicoclean.org) and is broadcast annually in Spanish and English.

**Daily/weekly newspaper ads** – 1. In past years the ad with the general runoff pollution prevention message has been printed (with image of car wash wastewater draining into the gutter). 2. In 2011 a new ad that specifically targeted the cigarette butt litter issue was printed. The ad features the character, Stanky the Butt, and reads: “Keep your butt out of the gutter.” Two versions of the ad were printed in 2011 for a total of 2 weeks. The ads also include general messages, “Water that flows into the gutters drains directly to the creeks;” and “Remember, only rain down the storm drain.”

**Daily/weekly newspaper articles/PSAs** – Press coverage is generated to encompass articles that cover various topics (e.g. calendar project – which includes general messages such as, “Water that flows into the gutters drains directly to the creeks” and “If it isn’t rainwater, it doesn’t belong in the gutter.”) In 2010-2011 five articles and one PSA were printed in daily and weekly newspapers covering SWM EOP messages and inviting the public to participate in the calendar project. The messages focused on anti-butt litter and general SWM EOP BMPs.

**Murals** – In 2006 two murals were created in downtown Chico, under the Chico USA EOP. The murals portrayed creek wildlife, a storm drain pipe emptying into a waterway, and a message thanking Chico for preventing runoff pollution of local creeks. The mural on 3<sup>rd</sup> Street was painted over in 2008. The last remaining mural on 4<sup>th</sup> Street was painted over in February 2011. The funding used for both murals was originally allocated for billboard messages, under the Cal Fed Chico USA program.

**Booth at a public event** – All outreach messages are conveyed at the booth, with the central message, “Water that flows into the gutters drains directly to the creeks.” Booth outreach is conducted annually at the Home & Garden Show, Thursday Night Market, and Silver Dollar Fair.

**Fifth-Grade Classroom/Field Trip Presentations** - All BMP outreach messages are imparted during Clean Creeks in the Classroom instruction, with the main message of, “Water that flows into the gutters drains directly to the creeks.” The students receive calendars and detailed information regarding potential pollutants, litter, cigarette butts, pet waste, car washing (soap, etc.), fertilizers and pesticides. I

**Chico Clean Creeks Calendar** – The outreach information is comprehensive and includes inspirational images of beautiful local urban creek scenes. Creek Watch Hotline information is listed in the calendar. The calendar refers readers to additional information sources. It also provides information on all of the City storm water



management programs, such as the Clean Water Business Partnership Program and the Clean Creeks in the Classroom Program. The calendar is a collaborative tool, and includes City Waste Water Treatment Plant messages and Department of Park Services volunteer information. In addition it highlights community programs that provide links to water quality protection.

**Storm Drain Markers** – The markers convey the simple message, “No Dumping – Drains to Creek.” Program logos and outreach messages integrate the marker to facilitate the connection of the educational message to the physical location of the storm drains.

**Press Coverage** - Two newspaper articles and a video were printed (and posted online) for the daily Enterprise Record: “Creek Photos Being Sought for 2011 Chico Clean Creeks Calendar,” September 15, 2010; “Anti-smoking Action Figures Roam Chico Streets,” April 23, 2011. Three newspaper articles/blurbs were printed in the weekly Chico News & Review: “Chico Clean Creeks Calendar is Here,” January 06, 2011; “Butt Watch,” March 03, 2011; and “Be On the Lookout for Stanky the Butt,” March 10, 2011. One collaborative radio interview was given with the Marsh Jr. High KLEAN Team and broadcast on KCHO Public Radio on May 13, 2011. One TV Interview was broadcast on KNVN local news on April 22, 2011. (See Appendix C for press releases and newspaper clippings; see [www.keepchicoclean.org](http://www.keepchicoclean.org) or enclosed disc for Radio and TV coverage audio and video files.)



#### Northstate Public Radio

Our News Director, Lorraine Dechter, visited with the KLEAN team students at Chico's Marsh Junior High to talk about how they clean up local parks by picking up cigarette butts. "Stanky Butt" was also at school! The kids will explain why they are concerned about people's health, and environmental health and the cleanliness of our watersheds on this week's Friday Forum, airing Friday morning at 10 minutes to 8.



**Internet website** [www.keepchicoclean.org](http://www.keepchicoclean.org) houses images documenting all of the outreach programs, and provides outreach materials downloads, Eco-friendly car wash fundraisers tips, TV and radio commercials in Quick Time files, Clean Water Business Partnership Program surveys and pledges, Creek Watch Hotline information for reporting illegal dumping, and links to the Butte County Storm Water Management Program online. The website includes links to other sites that provide additional information for those who choose to get involved and educate themselves further, such as the link to the Stream Team Program. The website includes urban watershed educational games for children and outreach materials in Spanish and Hmong.

**Video** – A Six-minute informational video on how to conduct an Eco-friendly car-wash fundraiser event is posted online at [www.keepchicoclean.org](http://www.keepchicoclean.org) (produced in 2010). The City's car wash kit is featured and viewers are encouraged to develop their own car wash kits. The Butte College MESA students' efforts are highlighted as a model for other groups who want to build their own runoff pollution prevention car wash kit.


**Facebook** – A Facebook page was created for the SWM EOP in June 2011. Basic content and SWM EOP media will be uploaded throughout June, and relevant posts can be added thereafter. In addition, SWM EOP messages were posted on Stanky the Butt's Facebook page throughout spring 2011.




Stanky Butt added 4 new photos to the album Thursday Market.



Thursday Market

 May 6 at 9:47pm · Like · Comment · Share

 AnnaFiina Caul-Swenson likes this.



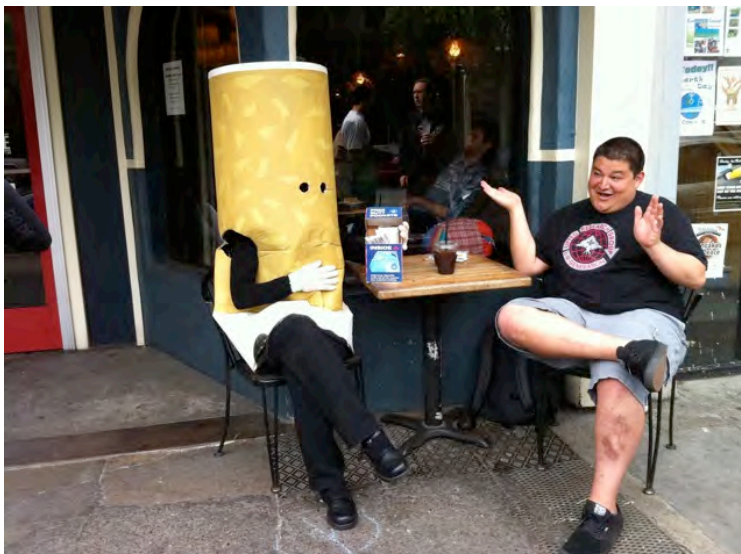
Stanky Butt I love going to the Thursday Night Market.  
May 6 at 10:12pm · Like

### Community Outreach Activities:

1. The Downtown Chico Business Association (DCBA) invited the SWM EOP and Stanky the Butt to distribute pocket ashtrays to smokers at Downtown Thursday Night Market events in April and May 2011. Approximately 600 pocket ashtrays were distributed to the public as part of one-on-one outreach on anti-butt litter/water quality protection education. Over 100 pocket ashtrays were distributed at local coffee shops and bars in the downtown area. The Naked Lounge, a popular Chico coffee shop, implemented a smoking ban in the entryway area. The SWM EOP supported this effort by providing pocket ashtrays and one-on-one education to patrons, as the ban dramatically cut down on butt litter in the entryway area. The DCBA collaborated with the SWM EOP to provide outreach to downtown business owners and managers via the Constant Contact messaging system. The dissemination of the pocket ashtrays was also announced in the runoff pollution prevention PSA, which appeared in the weekly *Synthesis* newspaper for two weeks, and coincided with an anti-cigarette butt litter ad that was printed for two weeks, during late April and early May 2011.



Anti-butt litter one-on-one outreach at the Thursday Night Market, May 2011. Stanky the Butt provides outreach and assists with pocket ashtray distribution.



Anti-butt litter one-on-one outreach in front of the Naked Lounge, April 2011. Stanky the Butt provides outreach and assists with pocket ashtray distribution.



2. Presentations to all middle and high school ASB Clubs on Eco-friendly car wash fundraiser BMPs were provided in the Fall 2010 (Marsh Jr. High, Bidwell Jr. High, Chico Jr. High, Chico High and Pleasant Valley High schools). All three Chico high schools (Pleasant Valley, Fair View and Chico High School) were provided with training and long-term loaner car wash kits to be stored on site at the schools to be used during all charity car wash events.

3. Hands-on, runoff pollution prevention, educational activities were provided at the CUSD Chico Science Fair on March 30<sup>th</sup> and 31<sup>st</sup>, 2011. Jennifer Oman-Payne, Program Coordinator, coordinated with Kids & Creeks staff to provide Enviroscope model interactive runoff pollution prevention demonstrations to school groups attending the fair, reaching 400+ CUSD students on urban watershed education.



Chico Science fair students participate in Enviroscope interactive demonstration. Students learn about BMPs for the prevention of runoff pollution of waterways.



Chico Science fair students participate in interactive "Fishing Game" demonstration. Students learn about urban watershed concepts and how to protect water quality.

## Calendar and Brochure/Post Card/ Poster Dissemination



### Calendars

3,250 Calendars were printed in 2011, which was an increase from 2,500 in 2009 and 3,000 in 2010. The additional copies were printed in collaboration with the Wastewater Treatment Plant and Cal Water (The cost for Cal Water's 250 calendars was billed directly to Cal Water and Cal Water distributed their allotment.) In addition to Storm Water Management educational messages, BMPs that addressed water conservation and proper disposal of waste via the sewer system were included. (See Appendix A)

3,250 copies were distributed as follows:

- Home & Garden Show - 185
- Butte County Library – 1,050
- CARD - 175
- City of Chico employees - 525
- City of Chico Park Department volunteers - 25
- City of Chico Wastewater Treatment Plant for distribution-250
- Cal Water - 250
- Chico Unified School District teachers and staff – 75
- Kids & Creeks staff - 10
- Clean Creeks in the Classroom students, teachers, staff and volunteers - 525
- Butte College students and instructors - 30
- Big Chico Creek Watershed Alliance volunteers - 50
- CWBPs -95
- Project documentation - 5



## **Post Cards**

1000 postcards were printed and 975 have been disseminated. The remaining 25 will be distributed through the Public Library in June 2011.

(See Appendix A)

Library - 200

Silver Dollar Fair - 475

City of Chico, City Hall – 200

Local businesses - 100



Photo donated by Larry Leigh. © Larry Leigh

## **Posters**

Two new posters featuring Stanky the Butt were developed and included the phrase, "Keep Your Butt Out of the Gutter." A total of 350 posters were printed and 150 were displayed at the local businesses and venues listed below. The remaining 200 posters will be used for the 2011-12 SWM EOP. 70 posters, printed under the 2009-10 program, were also distributed (See list below). Five SWM EOP posters were translated into Hmong and Spanish and are available for printing and download at [www.keepchicoclean.org](http://www.keepchicoclean.org). (See Appendix A)

Downtown Chico stores, shops, restaurants, bars.

5<sup>th</sup> & Ivy Street businesses.

Chico State University campus

Various areas in the City of Chico limits (CWBP locations, etc.)

Silver Dollar Fair

CUSD classrooms (Clean Creeks in the Classroom participants)



# Stanky the Butt Says...



## KEEP YOUR BUTT OUT OF THE GUTTER!

### Please use ashtrays!

Gutters and Storm Drains Flow Directly to Creeks.

Cigarette butts can take over ten years to biodegrade.  
They contain toxins that are harmful to wildlife and water quality.

Phone: City of Chico, 879-6950 Visit: [www.keepchicoclean.org](http://www.keepchicoclean.org)



### **Pocket Ashtrays**

A press release, printed in the Synthesis weekly (April 25<sup>th</sup> – May 8<sup>th</sup>) notified the public to watch for the pocket ashtrays at local bars and coffee shops in April and May 2011. Constant Contact DCBA messages were sent to downtown business owners alerting them to the pocket ashtray distribution. (See Appendix C).



Approximately 750 Pocket Ashtrays were disseminated to individual smokers, and downtown bars and coffee shops from April 22<sup>nd</sup> through May 30<sup>th</sup> 2011:

- LaSalles - 20 pocket ashtrays
- The Banshee – 20 pocket ashtrays
- Naked Lounge Coffee Shop – 100 pocket ashtrays
- Thursday Night Market SWM EOP booth – 80 pocket ashtrays
- Silver Dollar Fair SWM EOP booth – 30 pocket ashtrays
- One-on-one outreach with Stanky, downtown Chico – 500 pocket ashtrays

## Storm Water Web Site [www.keepchicoclean.org](http://www.keepchicoclean.org)

The SWM EOP website was maintained and the following new pages were added:

- “Pervious Concrete” FAQs and resource page
- “Keep Your Butt Out of the Gutter,” Cigarette Butt Litter Prevention page
- “Español” Media page
- “Hmong” Media page

All outreach materials, community resources, CWBP listings, and Creek Watch Hotline material will continue to be housed on the website.



## Creek Watch Hotline

The Creek Watch Hotline information is listed online and the dedicated phone line was maintained at the Butte Environmental Council (BEC) office. The Hotline is kept up to date with current contact information for reporting illegal dumping. The public is urged to report any dumping or pollution to our creeks directly, or via the storm drain system, that they have witnessed.

### Creek Watch Hotline Calls – Total 77

|                |                                      |
|----------------|--------------------------------------|
| July 2010      | 6 calls                              |
| August 2010    | 4 calls                              |
| September 2010 | 4 calls                              |
| October 2010   | 4 calls                              |
| November 2010  | 3 calls                              |
| December 2010  | 1 call                               |
| January 2011   | 4 calls                              |
| February 2011  | 23 calls                             |
| March 2011     | 3 calls                              |
| April 2011     | 16 calls                             |
| May 2011       | 8 calls                              |
| June 2011      | 1 call (as of June 9 <sup>th</sup> ) |



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**CONVENIENCE SURVEY 2011 REPORT:**  
**IMPACT OF STORMWATER MANAGEMENT**  
**EDUCATION AND OUTREACH PROGRAMS**

**By**  
**Dr. Diane E. Schmidt**  
**For**  
**Oman Communications**  
**and**  
**City of Chico, CA**  
**June 19, 2011**

## EXECUTIVE SUMMARY

The City of Chico contracted for a brief convenience survey on water pollution to provide mechanism for monitoring the veracity of previous and continuing outreach activities. The 2008 survey had 14 questions and the 2009-2011 survey had 8 questions. The 2009-2011 surveys were administered at three locations to receive feedback on program effectiveness: The annual *Home, Garden & Antique Show* (seven hours on March 21, 2009), Downtown Chico's *Thursday Night Market* event (four hours on May 15, 2008) and at the *Silver Dollar Fair* event (five and half days from May 22-26, 2008). In addition, the 2010 survey was administered at the CSU Chico *Footprint Festival* (three hours on May 1, 2010). The 2011 survey was scheduled as an on-line survey to be taken at each event, but due to Internet connectivity problems and inclement weather, only 32 surveys were collected on-line, the rest were administered by paper. The purpose of the convenience survey was to provide a snapshot of whether educational outreach messages, both before and current with each survey year, are still continuing to promote the program goal. The program goal for educational outreach efforts was to promote best management practices (BMPs) for prevention of urban runoff pollution. The objectives included:

- Improving awareness of runoff pollution issues.
- Increasing knowledge about pollution prevention.
- Fostering behavior changes consistent with BMPs.
- Modifying or creating supportive attitudes for water quality protection.

The results of the survey indicate that the goal of the outreach program continues to be met and the objectives continue to be achieved. Exposure to past and present outreach activities is associated with knowledge and awareness of runoff issues and causes of creek pollution. In addition, knowledge of where runoff from yards, gutters, streets, and roads ends up is associated with exposure to educational outreach activities. Further, self-reported changes in handling of yard, household, and garden waste and materials is also associated with exposure to educational outreach activities. In particular, television commercial, booths at public events, and the storm drain markers are especially related to knowledge, awareness, and positive changes in respondent engagement in targeted best management practices. In sum, past and present educational outreach activities promoting best management practices for handling chemicals and waste from the household, yard, and garden have been highly effective in increasing awareness, knowledge, and use of these best practices.

## INTRODUCTION

The City of Chico contracted in 2008-2011 for a brief convenience survey on water pollution to provide snapshot mechanism for monitoring the veracity of previous and continuing outreach activities. The 2008 survey had 14 questions and the 2009-2011 surveys had 8 questions<sup>1</sup>. The 2008 survey was administered in two locations to receive feedback on program effectiveness: Chico's *Thursday Night Market* event (four hours on May 15, 2008) and at the *Silver Dollar Fair* event (five and half days from May 22-26, 2008). The 2009 survey was administered at three locations: The annual *Home, Garden & Antique Show* (seven hours on March 21, 2009), Chico's *Thursday Night Market* event (four hours on May 14, 2009) and at the *Silver Dollar Fair* event (five and half days from May 20-25, 2009). The 2010 survey was administered at four locations: The annual *Home, Garden & Antique Show* (two days from March 20-21, 2010), CSU Chico *Footprint Festival* (three hours on May 1, 2010), Chico's *Thursday Night Market* event (four hours on May 13, 2010) and at the *Silver Dollar Fair* event (four and a half days from May 27-31, 2010). The 2011 survey was administered at three locations: The annual *Home, Garden & Antique Show* (two days from March 19-20, 2011), Chico's *Thursday Night Market* event (four hours on May 19, 2011) and at the *Silver Dollar Fair* event (four and a half days from May 26-30, 2011). On-line surveys were administered by booth staff each event, however, due to Internet connectivity problems and inclement weather, only 12 surveys were collected at the *Home, Garden & Antique Show*, 17 surveys were collected at the *Thursday Night Market*, and 3 surveys were collected at the *Silver Dollar Fair*. Due to the Internet survey software malfunction, booth staff switched to administering paper surveys. The paper surveys, originally designed as alternatives for people with disabilities, particularly with vision impairments, were printed on 11x17 size paper with enlarged fonts; 172 *Silver Dollar Fair* attendees completed these disability accessible paper surveys. At each event, and each year, the survey was offered to event attendees who passed by or stopped at the City of Chico *Storm Water Management Education and Outreach Program* (SWM EOP) booth staffed by Jennifer Oman-Payne, SWM EOP Coordinator. Give-aways including environmentally-friendly merchandise and kids' prizes were used as inducements to take the survey.

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<sup>1</sup> The on-line survey actually had 9 questions because one of the questions, regarding changes made after seeing messages, was broken to two questions due to programming constraints in *the Survey Monkey* software.

## BACKGROUND

The purpose of the convenience survey was to provide a snapshot of whether educational outreach messages administered over the years are continuing to promote the program goal. The program goal for the current and previous educational outreach efforts has been to promote best management practices (BMPs) for prevention of urban runoff pollution. The objectives included:

- Improving awareness of runoff pollution issues.
- Increasing knowledge about pollution prevention.
- Fostering behavior changes consistent with BMPs.
- Modifying or creating supportive attitudes for water quality protection.

As part of the Chico Urban Streams Alliance (CUSA) two *Public Knowledge of Water Quality Surveys* (2005 and 2007) were administered to a cross-section of Chico residents and an *Education and Outreach Program 2006* (EOP) was designed to address urban run-off issues. Based on goals set by the coalition of Chico USA, the focus of the questions and the EOP were to address:

### ***POLLUTION RUNOFF FROM***

Fertilizers  
Pesticides  
Herbicides  
Cleaners  
Animal waste

### ***IMPROPER BEHAVIOR SUCH AS***

Discarded cigarettes  
Dumping trash in creek  
Motor oil not recycled  
Green waste in creek  
Applying pesticides before a rain

The EOP involved the following activities over the 2006-2011 time periods (see Appendix A for full descriptions):

*Radio and television advertising*  
*Posters and public murals*  
*Internet site postings*  
*Public event booths with give-aways.*  
*Stanky the Butt (community performance, Facebook icon)*  
*Clean Creeks in the Classroom program*  
*Clean Water Business Partnership Program*  
*Eco-friendly car wash training*  
*Chico Clean Creeks Calendars*  
*Facebook page*  
*Storm drain marker*



As part of event driven outreach, Oman Communications has been facilitating eco-friendly carwash events annually for the past three years. For the 2010-2011 outreach, Oman Communications created a performance character, *Stanky the Butt*. This character appears throughout the community to raise awareness and heighten the saliency of cigarette butt pollution as a serious community problem. *Stanky the Butt* has a Facebook page and has become a regular performance at community events.

While the murals, storm drain markers, posters, and brochures are displayed in public spaces throughout the year, and the website is available online at all times, Oman Communications plans and implements a concentrated period of outreach annually in the spring. Chico Clean Creeks Calendar dissemination is the "kick-off" to the outreach effort (January through March followed by

- A "blast" of messages via the radio and TV commercial broadcasts in April and May
- The booth outreach at the *Home & Garden Show*, *Thursday Night Market* and the *Silver Dollar Fair*
- *Clean Creeks in the Classroom* program implementation in 5th Grade classrooms March-May (the program is also implemented in the fall)
- Newspaper ads in May (2 newspapers are selected annually)
- TV, newspaper and radio press coverage to raise awareness of the impacts of butt litter on water quality (in collaboration with schools and youth groups)
- Presentations to school and community groups

## 2011 CONVENIENCE SURVEY

Just as in 2008 – 2010, 2011 survey respondents were self-selected and filled out the survey in the presence of Ms. Oman-Payne or SWM EOP assistants and student interns. Each respondent received a booth give-away prize in return for completing the survey. While the previous surveys in 2005 and 2007 were conducted on random samples of Chico residents by telephone interviews, the 2008, 2009, 2010, and 2011 surveys were conducted with event attendees using a paper survey, with the exception of the 2011 survey. The 2011 initiated the EOP experiment in paperless surveys using *Survey Monkey* Internet software for on-line survey administration and data collection. This experiment was designed to test the viability of conducting a paperless survey as an environmentally responsible and eco-friendly alternative to printing hundreds of copies of the survey that could only be used once. As an investment in developing sustainable alternatives in evaluating outreach outcomes, Oman Communications invested in securing *Survey Monkey* software access and two refurbished laptops to reach environmentally responsible sustainability goals of **reducing** reliance on paper surveys and **reusing** through the purchase of reconditioned/refurbished laptops from *Computers for Classrooms*. Only 32 respondents took the on-line survey on laptops provided by Oman Communication at the EOP booth; the limited number is due to Internet connectivity and inclement weather. Oman Communications is currently investigating ways to reduce the vulnerability of on-line paperless survey administration to connectivity issues for the 2012 EOP so that the majority of the surveys will be paperless.

The 2008, 2009, 2010, and 2011 (paper) Convenience Surveys are almost identical with a few exceptions. The total number of surveys completed in 2011 is 204, with most questions answered and very few missing or no answers. Most of the survey questions were derived from the survey in 2007 included questions regarding awareness or knowledge of water drainage, runoff, and dumping issues, as well as questions about exposure to educational messages and behavioral changes related to viewing the messages. In 2011, Oman Communications expanded its outreach methodology to include paper surveys on 11x17 inch large font format to increase accessibility to respondents with disabilities, especially those with visual impairments. In prior years, the surveys were administered on 8.5x11 inch with small fonts to conserve paper. Due to the Internet connectivity problems with the paperless survey, most of the surveys were collected on these extra large format surveys. While administering all the surveys on the large format was not the original plan, all but 32 surveys were collected on these. While most people managed fine with the large font, it was somewhat difficult for some with other disabilities. In the future Oman Communications will have a variety of formats available for respondents including on-line, 8.5x11 inch, and 11x17 inch large font formats for flexibility in offering choices to event attendees while providing disability accommodation for those with visual or other impairments that may limit their access to providing their opinions and receiving booth give-a-ways.

Another way the 2011 survey was different from the previous surveys is that the on-line survey

had a few programming glitches. There are three surveys in *Survey Monkey*.- The first survey does not include Stanky the Butt (only version 2 and 3 have Stanky listed as a message that was seen or heard). Stanky the Butt is a new public event and is also accessible through *Facebook*. The first survey was created for the *Home and Garden Show*, and only a few responses were collected due to windstorms. The second survey was created for the Thursday Night Market and the Silver Dollar Fair, however, there was a glitch with it and it would not cycle back to the beginning for the next user. Version 2 and 3 are identical. Repeated attempts to repair version 2 while staffing the public booth at the Thursday Night Market were unsuccessful. To continue collecting data, the *Survey Monkey* on-line survey was abandoned and the 11x17 survey paper copy was administered to respondents. All the data collected in the paper copy were entered by hand by Ms Oman and her staff. (See Appendixes: Paper Version, On-line Version 1, and On-line Version 3.

In addition to some of the glitches in the software used to administer the survey, there were several programming errors that may have influenced the 2011 responses. In previous years, the survey instrument included instructions of “check all that apply” on q3, q6, and q8 and the option for *Other* in q8. These instructions were accidentally omitted in the on-line versions. In addition, the programmer changed the question order for responses *I did not hear or see any messages* and *I did not make any changes*. In previous versions of the survey, 2009-2010, respondents were given these choices only after they were asked to respond to the question *Which activities have you changed as a result of local messages about protecting our creeks from water pollution within the past year?* The programmer created a new response set including *I have made one or more changes –If checked you can specify which changes on the next page*. The programmer created a new question, q8, *Which of the following activities have you changed?* Finally, in previous versions of the survey, respondents were prompted with *Now I do* and *Now I do not*. This was changed in 2011 to *I* statements such as *I wash my vehicle on lawn or car wash* and *I NEVER litter*. This was done due to programming constraints using *Survey Monkey*. Finally, the programmer provided zip code response categories; in early versions respondents wrote their zip code into the survey.

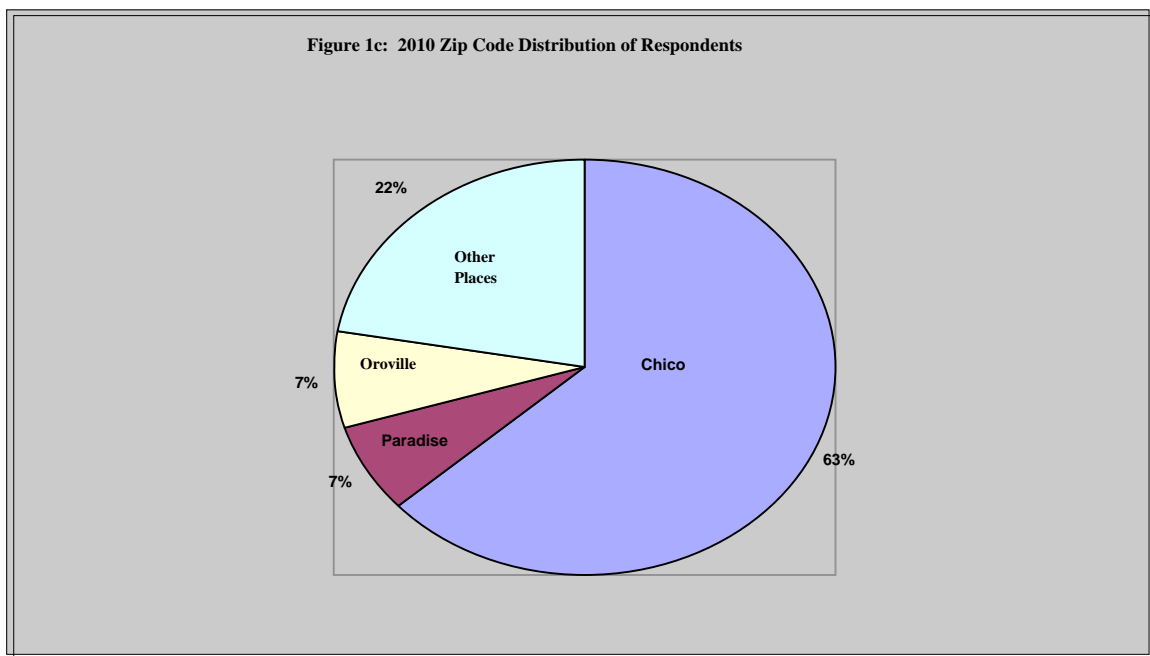
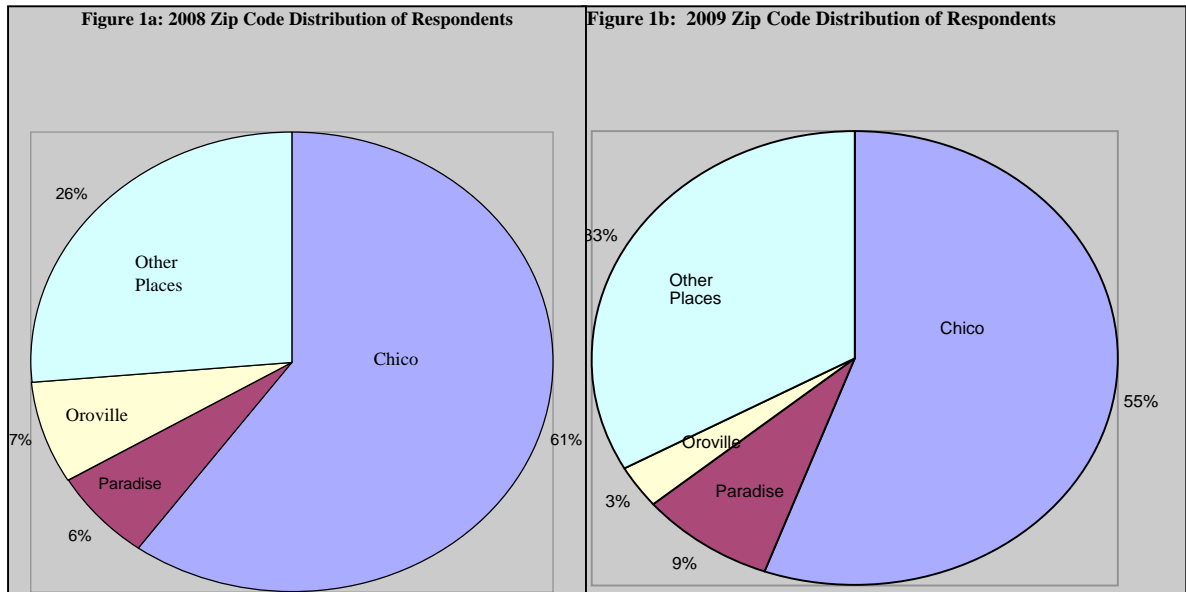
Fortunately, only 32 surveys were administered without the instructions to check all that apply and the change in question order. Booth staff recall being ask by respondents if they can check more than one response; it is reasonable to expect very little impact on the data results. The question order and format changes were more problematic for time series analysis. If anything, the 2011 data may under-represent the strength of the EOP program due to these changes. All discussions from this point forward will refer to question formats as they appear on the paper copy of the 2011 survey.

Although the 2008-2011 survey results cannot be compared with the results from the 2005 or 2007 surveys because the data were not collected in the same way, the results from the 2008 - 2010 surveys can be compared to 2011. To shorten the survey and improve clarity, a number of redundant questions in the 2008 survey were deleted for the 2009 survey to create a one-page survey instrument. In addition, the question in 2008 about the storm drain markers was an independent question (q11); in the 2009-2011 surveys the storm drain marker question was integrated with a list of educational message sources in question 6. An additional option regarding the Internet site was also added to the list of sources for outreach education messages in 2010; in 2010 question 6 included an additional option about the *Environmentally Friendly Car Wash Fundraisers*. In 2011, another response option was added to question 6 *Stanky the Butt* to capture this as a performance event in the outreach program. Also in 2011, one additional response option was added to activities changed as a result of local messages; the response option included *Volunteer at Eco-friendly car wash fundraisers*. (see Appendix B for a copy of the 2008, 2009, 2010, and 2011 surveys. Appendix C has an annotated Codebook for 2008-2011 data as they were merged for this project). Finally, the question concerning changes in activities to prevent pollution as a result of the outreach messages (q13 in 2008) was reorganized in the 2009 survey (q7 in 2009) to reflect the difference between what respondents do now to prevent pollution and what they no longer do; this was retained for 2010 and 2011. The available responses are basically the same; the order in which the respondents view them is different.

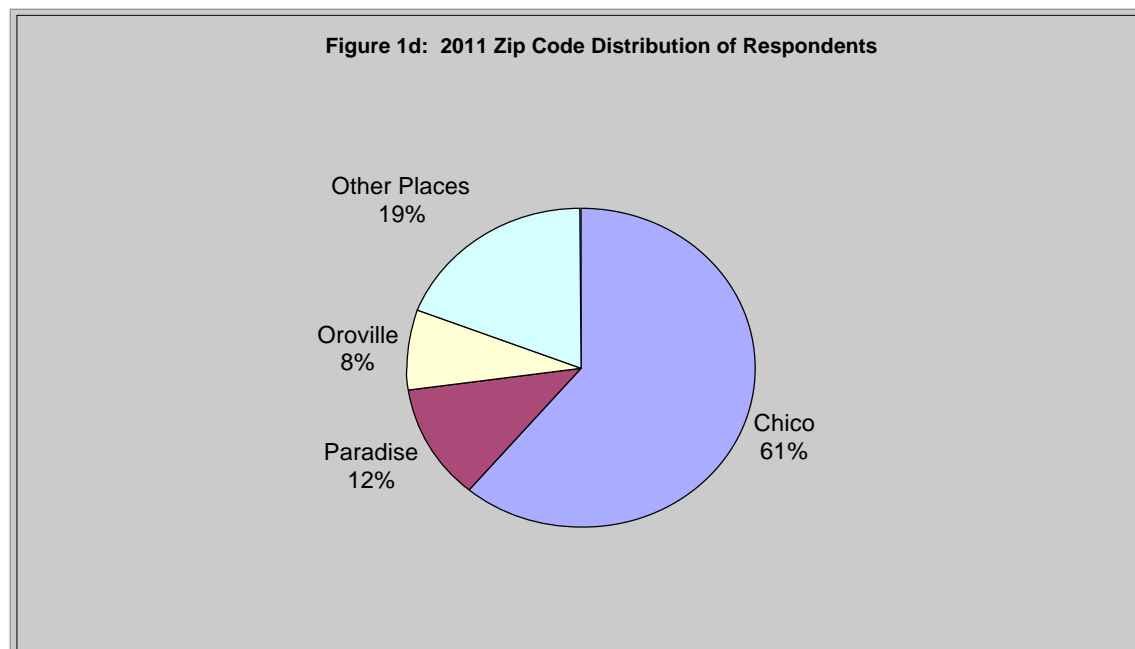
### **Snapshot of Respondents**

The survey included only one demographic question, the zip code of the respondent. As Figure 1a shows, in 2008, 61 percent of the survey respondents are Chico residents, 13 percent are Paradise or Oroville residents and the rest are from other places. As Figure 1b shows, in 2009, 55 percent of the survey

respondents are Chico residents, 12 percent are Paradise or Oroville residents and the rest are from other places. Figure 1c shows that in 2010, the percentages of each type of resident returned to the 2008 distribution patterns except for the proportion of the Chico respondents. The percentage of Chico respondents increased to 63 percent in 2010. In 2011, as seen in Figure 1d, the percentage of Chico respondents is 61 percent (identical to 2008) and the percentage of respondents from Paradise increased to 12 percent, which nearly matches the 2008 proportion. The percentage of respondents from Other Places is the lowest of any year at 19 percent. This demonstrates that the results are based on predominately Chico resident opinions and the distribution of respondents between the three surveys is somewhat similar. To assure that the data were not skewed differently because of the slight reduction of Chico residents, the data were compared between the full and the Chico only data. There was no considerable difference in the distribution of responses.





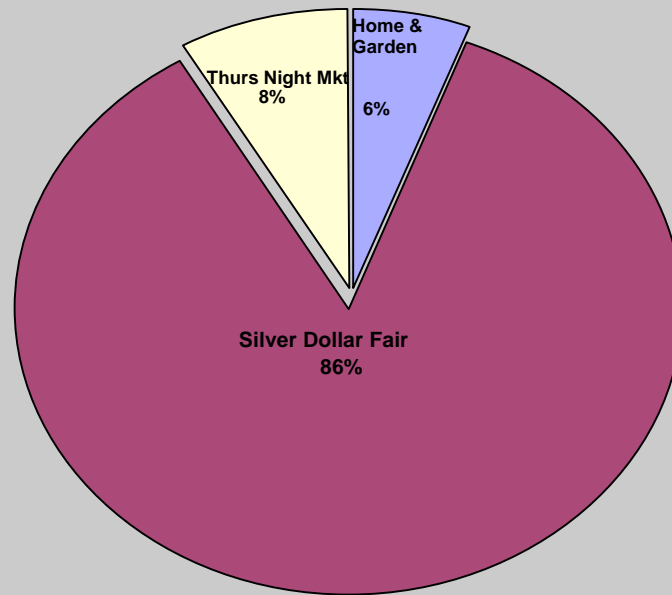


As seen in Figure 1e, in 2011, most of the surveys were conducted at the *Silver Dollar Fair* where there is a cross-section of the Chico population.<sup>2</sup>

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<sup>2</sup> One difference between earlier surveys and the 2010 survey is that the 2010 survey included a small number of Chico State Freshmen. Although these respondents comprised 10.4 percent of the survey, a comparison of the distribution of their responses indicates they demonstrate similar patterns to the other sets of respondents.

**Figure 1e: 2011 Populations Surveyed**

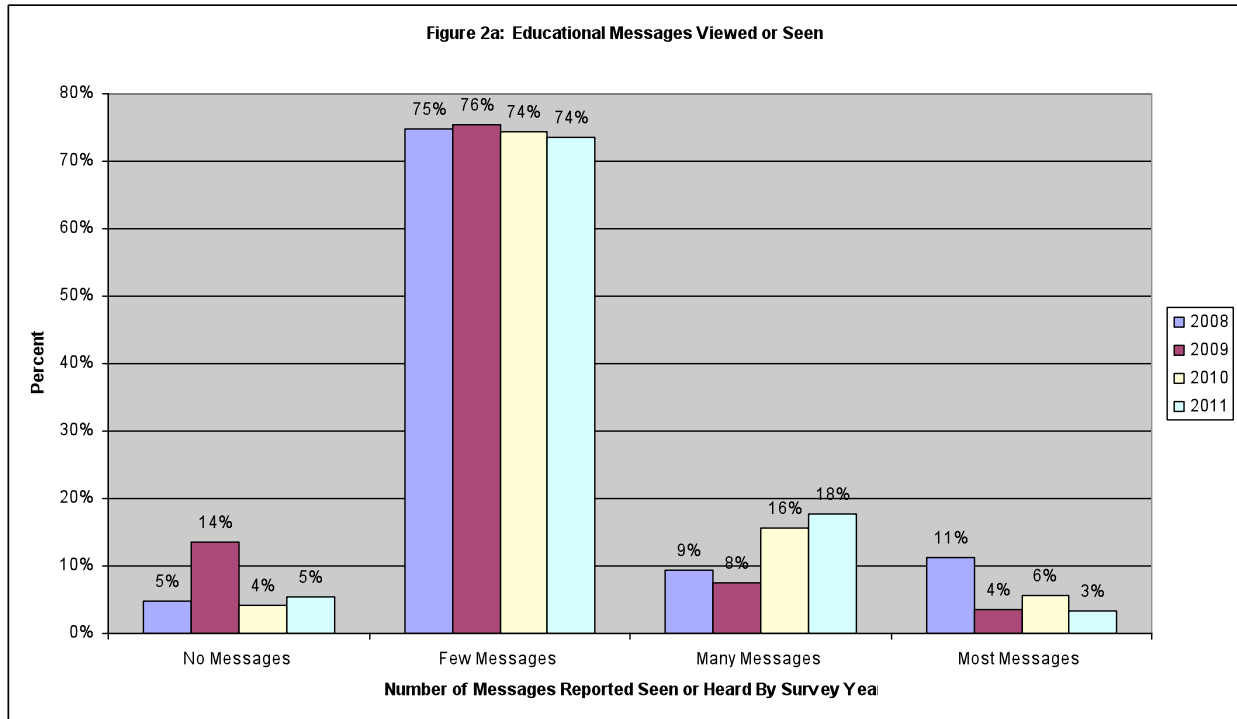


#### **Educational Messages**

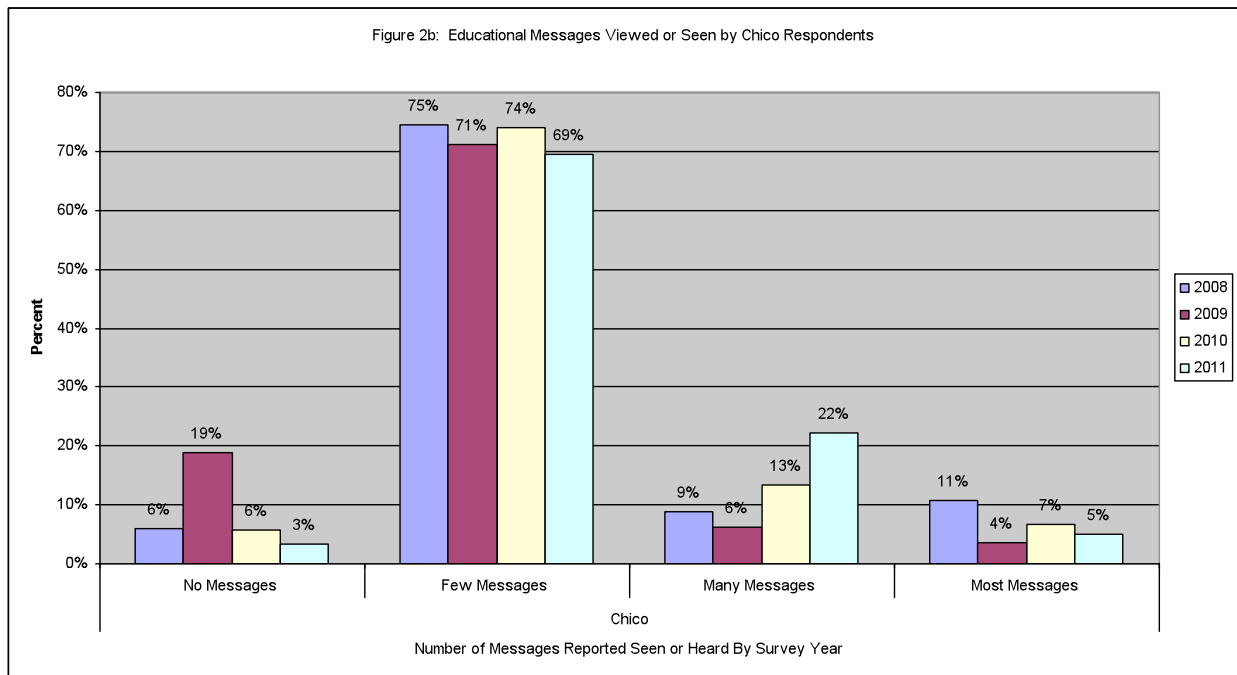
The 2008, 2009, 2010, and 2011 surveys included one question to identify which respondents have been exposed to past or present educational outreach messages, and in what format they were exposed to these messages. Respondents were asked:

*(2008 q10) (2009-2011 q6) Which of the following messages about keeping our gutters and local creeks free from pollution (such as litter, auto fluids, pet waste, fertilizer, and/or pesticides) did you hear or see recently? (Check all that apply)*

In this question, for the 2008, 2009, 2010, and 2011 surveys, respondents had the same 9 different media options to choose from and could list other messages viewed or seen. In the 2009 survey, the Storm Drain Markers and Internet site options were added to the list, and in 2010 the Environmentally-Friendly Car Wash Fundraiser and in 2011 the Stanky the Butt were also added. Most of those who checked the “other” option listed events such as Chico Clean up Day, Endangered Species Fair, or Storm Drain Markers in their answers in addition to identifying similar items to those listed. Using just the media options listed in the surveys, the responses were recoded to group the number of types of messages seen or heard to *No Messages*, *Few Messages* (1-3), *Many Messages* (4-6) and *Most Messages* (7-14). Figure 2a shows that an average of 74-75 percent of the respondents viewed or heard 1-3 messages, and the percentage of the respondents who heard or saw many messages close to *doubled* from previous years in 2010 and increased to 18 percent in 2011. This suggests that many respondents were exposed to multiple messages about keeping the creeks free of pollution. Although there was a slight increase in the percentage of those who did not see the messages in 2009, which is understandable given that the percentage of *Other* (non-Chico) respondents increased as well, this proportion of the survey returned to 2008 levels in the 2010 and 2011 surveys. It is encouraging that there is a persistent core of messages (1-3 educational sources) that respondents remember viewing or hearing.



As seen in Figure 2b, the Chico respondents are nearly identical to the full survey indicating that with the exception of the percentage of respondents who did not identify having seen or hear messages, the percentage of the respondents seeing or hearing the outreach messages has been fairly stable in every category, with a few more respondents in 2011 having seen *Many Messages*.

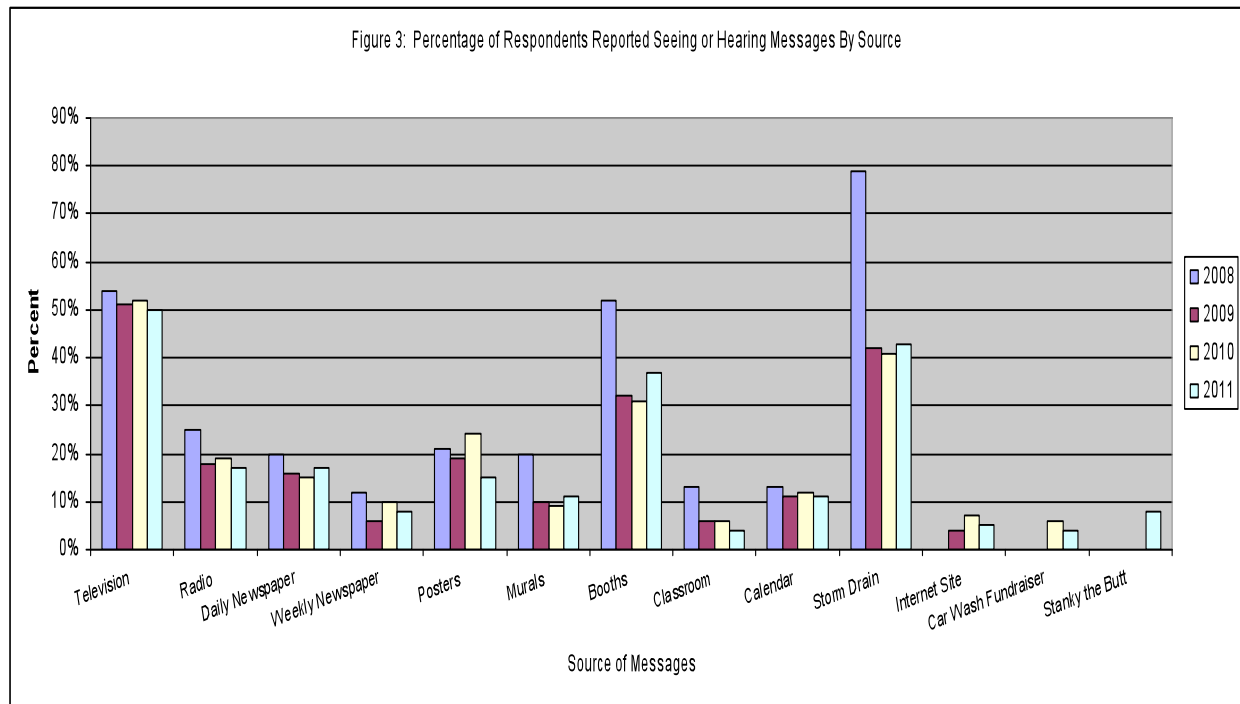


This suggests that, in general, the EOP outreach activities have successfully reached the Chico residents, as well as having expanded outside into neighboring communities. This is important because the City of Chico attracts visitors from neighboring communities whose behaviors impact the Chico community



waterways. These results suggest that visitors are also reached by the EOP activities.

More specifically, the data suggest that the 2011 EOP outreach activities have generally reached an increased percentage of respondents than the past. Figure 3 shows the percentage of respondents who checked off each of the activities on the list for each survey. The greatest exposure seems to have come from television, storm drain markers, and booths at public events as outreach sources. As Figure 3 demonstrates, 50-54 percent of the respondents identified having seen or heard messages from television. Further, the data results also show 15 to 25 percent of the respondents identified seeing or hearing messages from the radio, 15-20 percent from daily newspapers, 6-12 percent from weekly newspapers, and 15-24 percent from posters.



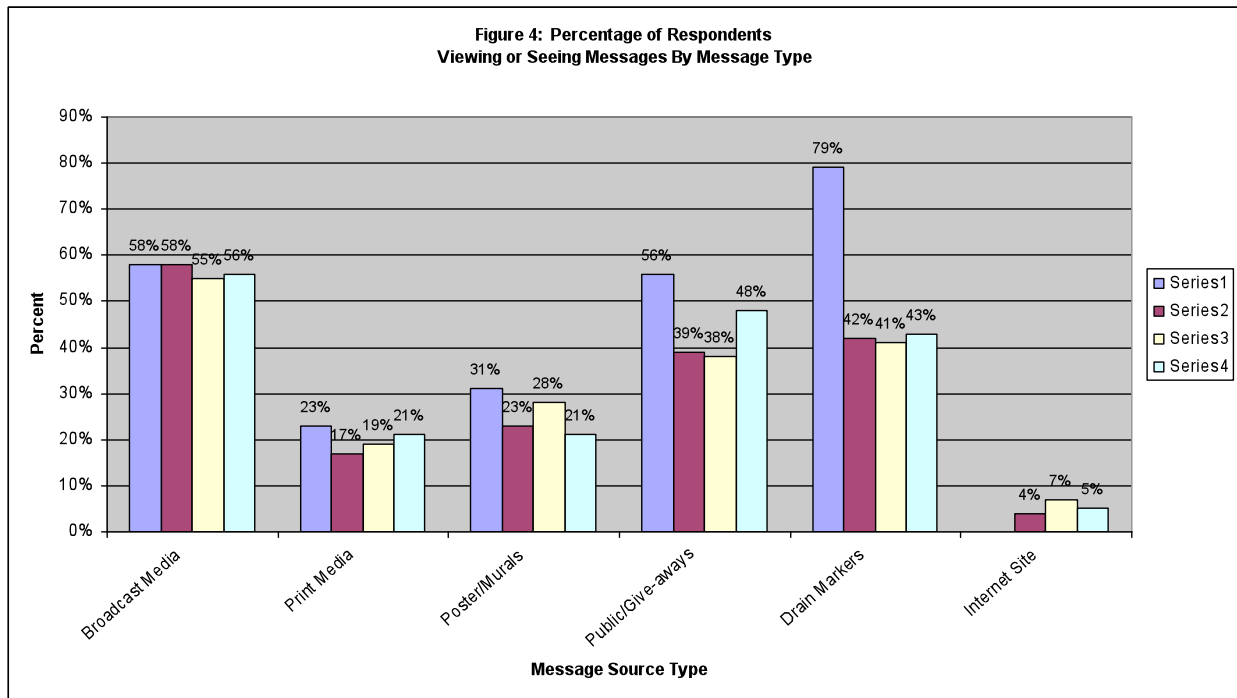
Although the percentage of respondents that reported having seen or heard messages at booths declined from 2008, in 2011 the percentage of respondents increased from 31 percent to 37 percent. Indeed, almost each category of outreach activity increased or stayed about the same. The percentage of respondents having seen a message about *Stanky the Butt* is 8 percent. Particularly, as in the past surveys, television, booths at public events, and the storm drain markers are still important components of the educational outreach plan.

The drop from 2008 to 2009 in the percentage of respondents identifying that they had seen or heard the messages may be a result of the question wording. Although the question wording stayed the same, the survey question [(2008 q10) (2009-2010 q6)] asks the respondent to identify messages they had heard or seen **recently**. The word **recently** was perfectly appropriate for the 2008 survey when most of each type of the messages were fairly new to the community. By 2009, the murals, posters, and storm drain markers, for example, would not necessarily be messages the respondent saw recently, but may have been seen within the last two years. Only the messages in television, radio, newspapers, and public events (such as booths or the car wash fundraiser) have been routinely **recent** in characteristics. Ironically, many respondents (68 percent in 2009, 69 percent in 2010, and 63 percent in 2011) did not choose *Booth at a public event* even though they all (100 percent) were administered the survey in a booth at a public event! The word **recently** is ambiguous enough as to suggest that some respondents may have seen or heard the messages, but did not indicate such because they did not do so **recently**. In light of this concern, it is important to note that even with this ambiguity perhaps suppressing the percentage that identified seeing or hearing messages, the percentage of respondents increased in each category, except for those who answered that they saw or heard none of the messages.

Alternatively, the drop in the percentage of respondents in the 2009 identifying storm drain markers as a source may be the result of a change in how the question about storm drain markers was asked in each survey. In 2008, the respondents were asked specifically about the storm drain markers in a separate question, whereas in 2009 - 2011, it was near the end of an 11-13 item list. Nevertheless, the percentage of those respondents identifying storm drain markers as a source of information is still an impressive 41 percent in 2010 and 43 percent in 2011; these data show that the storm drain markers reach a consistent 41-43 percent of respondents.

Further, as seen in Figure 4, using data combined by type of media, messages seen through broadcast media were checked-off by 55-58 percent of the respondents. The percentage of respondents identifying print media ranged from 23-17 percent. Public events, which include *Stanky the Butt*, were the

sources for 39 to 56 percent of the respondents (with a particularly nice increase from 38 percent in 2010 to 48 percent in 2011), and 21-31 percent of the respondents viewed or heard the messages through viewing posters or murals. In sum, among the sources of outreach messages viewed or seen, broadcast media, public events, and storm drain markers are the predominant media accessed by most of the respondents from 2008-2011.

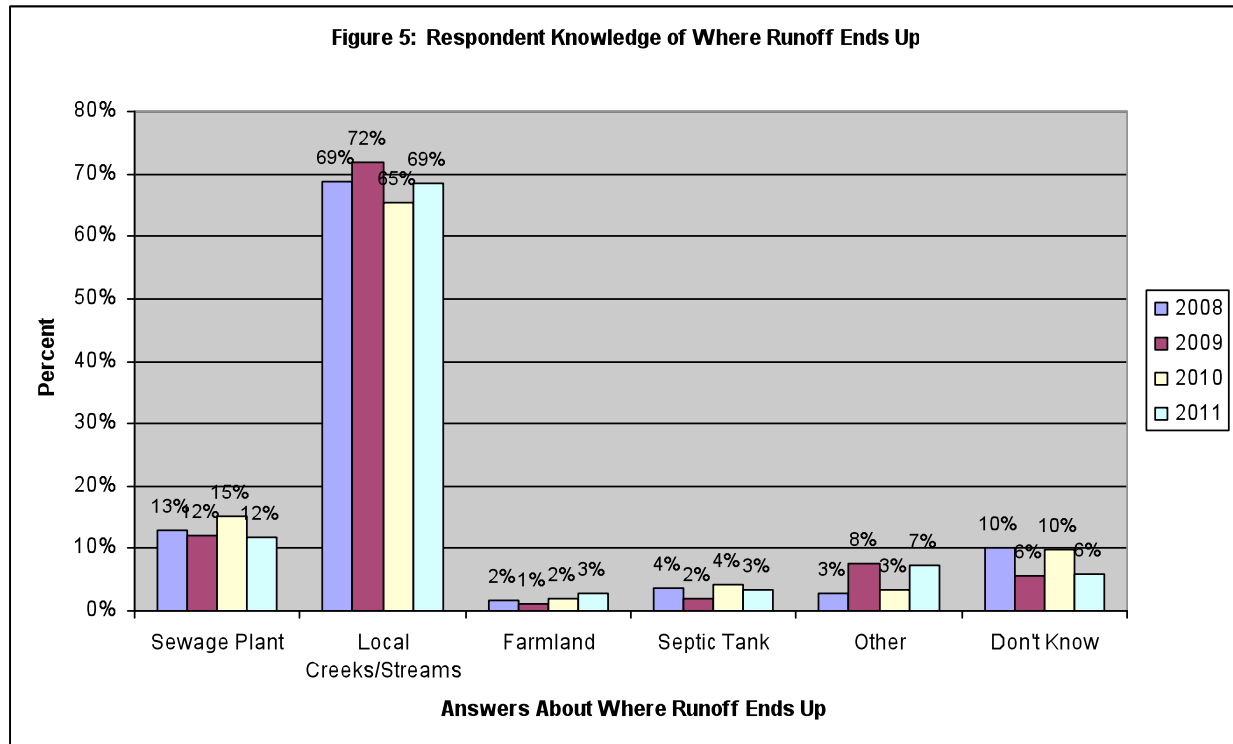


### Awareness and Knowledge of Water Drainage and Runoff

Each year the surveys included two questions about the respondent's awareness and knowledge about where water drainage ends up in the community. The survey results suggest that most of the respondents correctly identified the difference between where runoff and waste water ends up. This is not surprising given the depth and breath of outreach messages in the past and current programs.

**Runoff water.** Respondents were asked (*q1*) *In your opinion, where does most of the runoff water from your yard, gutter, street, or road end up?* Figure 5 shows the distribution of respondent opinion about where runoff water ends up.





The survey shows two-thirds of the respondents consistently and correctly identified that the runoff ends up in the local creeks and streams. Consistently, 10 percent or less did not know where the runoff water went, and a few answered that it went into the ground water or some other combination of local creeks and other places<sup>3</sup>.

More specifically and interestingly, as seen in Figure 6, of those respondents who correctly identified that the runoff ends up in the creek, 49-51 percent of the respondents report having seen a few messages (one to three message sources).<sup>4</sup>

<sup>3</sup> Some of the respondents failed to understand that they were to choose one response and they basically answered the question as though it said “check all that apply.” We created a separate variable, *Other*, for those types of answers.

<sup>4</sup> *Internet site* responses were not in the 2008 survey in question 6.

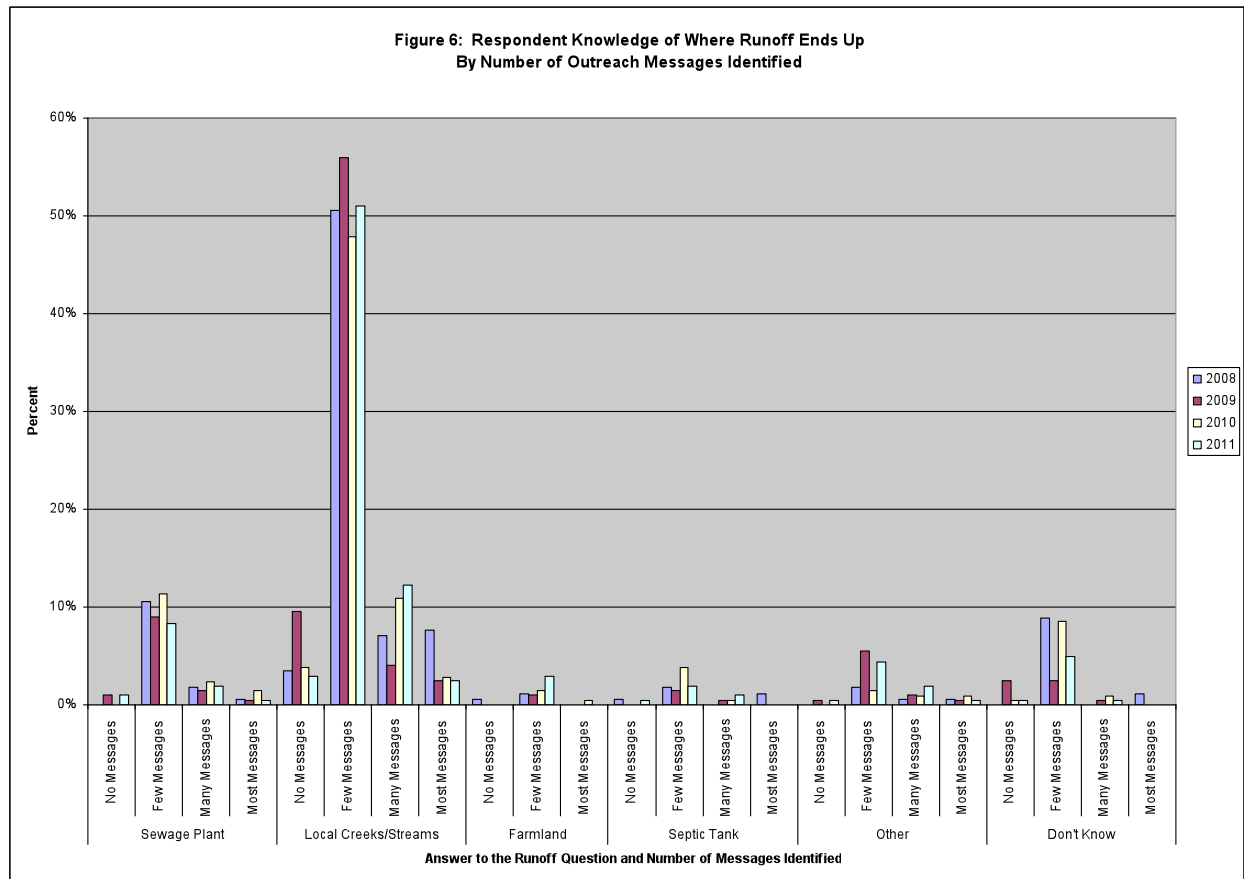
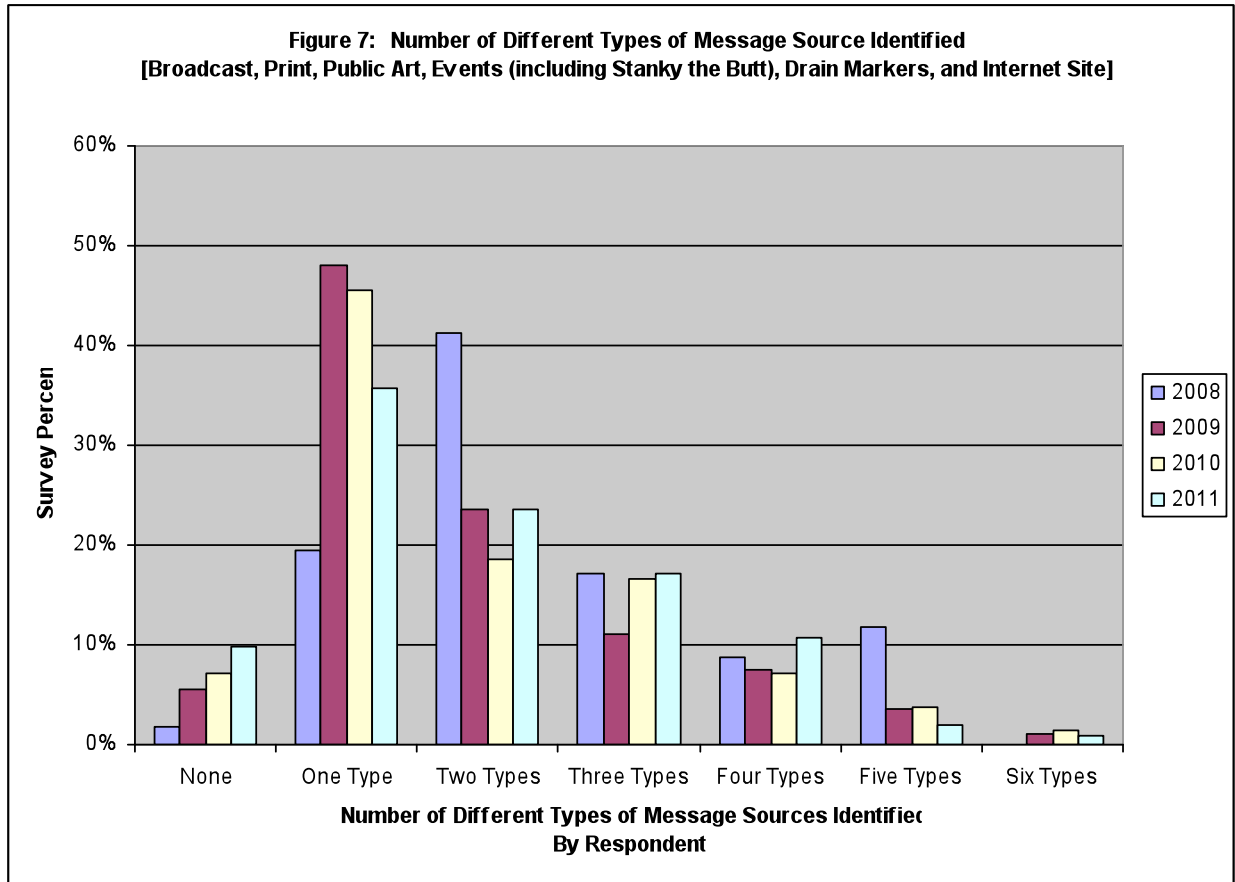


Figure 7 provides additional information about respondents' knowledge by examining the type of media identified as the source of recent information about pollution. Thirty-six to 48 percent of the 2009-2011 respondents identified one type of source, which is up from 19 percent in 2008 but down from 45 percent in 2010. In 2011, 24 percent of the respondents identified two types of sources, which is within the 18 to 24 percent range for 2009-2010. Eleven percent of the respondents in 2011 identified four types of outreach sources, which is up from 7 percent in 2010 and outside the range of 7-9 percent in 2009-2010. Most of the results are reasonably consistent and stable after 2008.

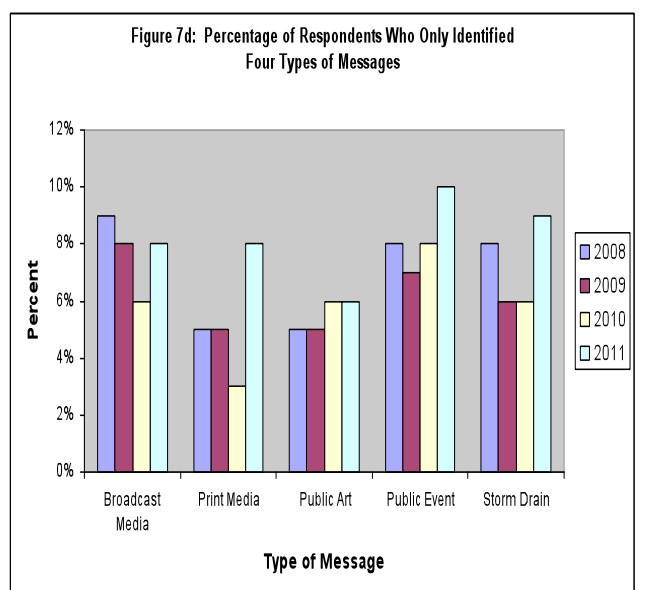
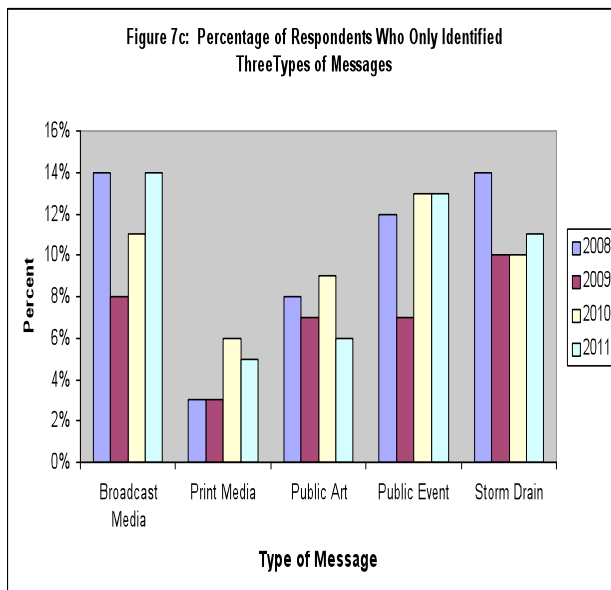
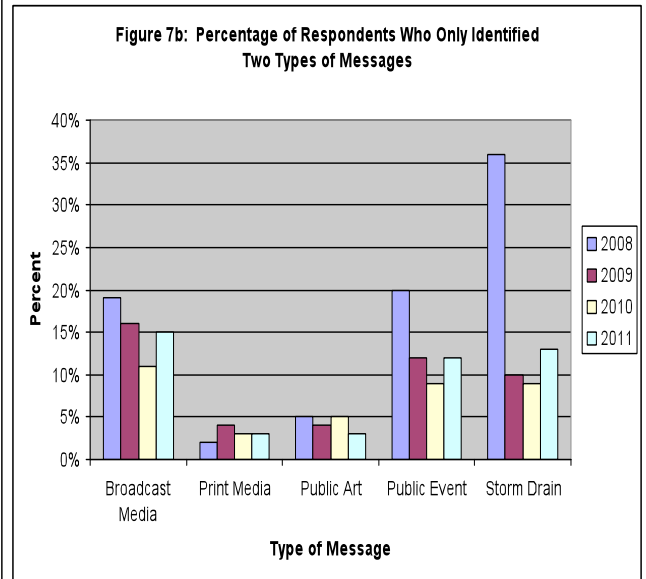
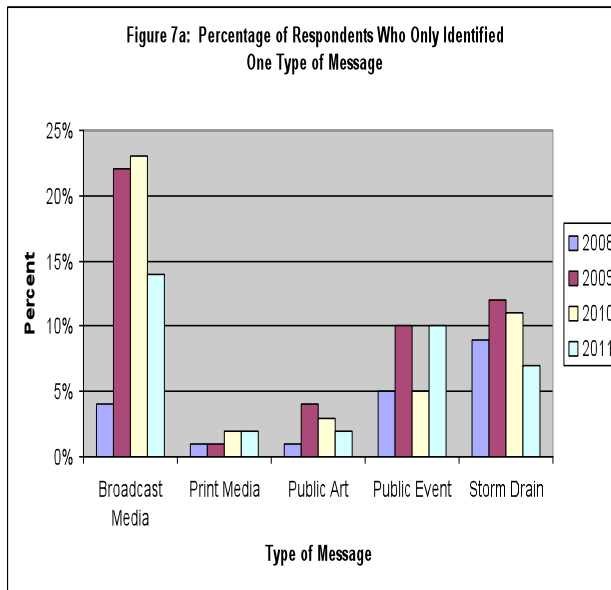


Although the percentage of respondents that identify two types of messages has declined by about half since 2008, the percentage that identified four types of message sources has increased since 2009.<sup>5</sup> Figures 7a-7d, break down the types of messages into the four most frequently mentioned types<sup>6</sup>.

<sup>5</sup> In 2010, 2011, and 2008, more Chico residents (the targets of the EOP outreach) answered the surveys.

<sup>6</sup> The Internet Site was not chosen by those respondents identifying One Type or Three Types.

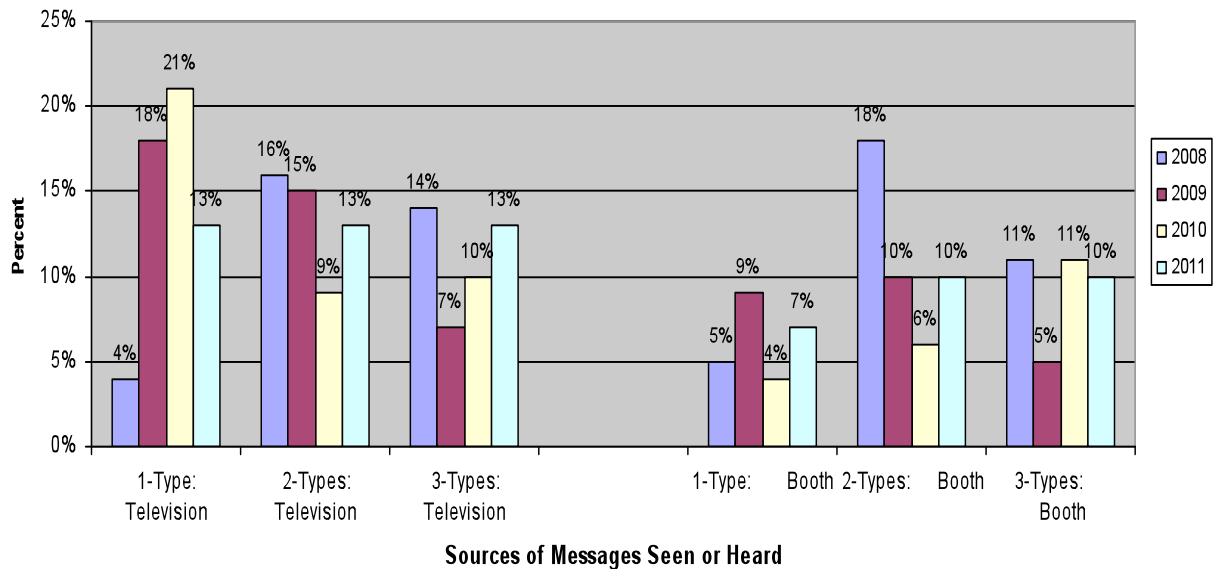




As seen in Figure 7a, *Broadcast Media* outreach messages were consistently viewed by twice the percentage of respondents (who only heard or saw one type of message) as any other EOP message source in 2009 and 2010 but declined in 2011. Figure 7b shows an increase in the percentage of respondents who viewed at least two sources of messages in *Broadcast Media*, *Public Events*, and *Storm Drain*; Figures 7c and 7d show an increase (or stable percentage) of respondents viewing three to four message sources; this increase is particularly strong in the *Broadcast Media*, *Public Events* and *Storm Drain* categories. The *Storm Drain Markers* category is also prominently identified (close to 10 percent) in cases where respondents identified one or more message sources. These figures show that broadcast media is the predominant source of messages for those respondents who identified one to four types of media. After broadcast media, public events, and storm drain markers messages are the most prevalent sources mentioned.

More specifically Figure 7e shows that it is messages from television and public event booths that dominate the memories of respondents.

**Figure 7e: Percentage of Respondents Who Saw or Heard Messages on Television or From a Booth at a Public Event and Who Only Identified One, Two, or Three Sources**



Of those respondents that identified *Television* alone as the source, the percentage of respondents increased from 4 percent in 2008 to 21 percent in 2010 but down to 13 percent in 2011. Those respondents who reported seeing or hearing two to three types of EOP messages, *Television* was identified by at least 9-16 percent of the respondents, with an increase in 2011. Of those respondents who identified *Booths at Public Events* as a single source of information, the percentage of respondents increased from 5 percent in 2008 to 9 percent in 2009 but declined in 2010 to 4 percent and rose to 7 percent in 2011. Of those respondents who reported seeing or hearing three types of EOP messages, a consistent 10 to 11 percent identified a message from *Public Event Booth*. Clearly the media “blasts” prior to administering the survey in 2009, 2010, and 2011 at the *Public Event Booth* appear to have had an important and durable impact on the recall of respondents about sources viewed or seen about pollution.

Now, how do these results relate to respondent knowledge about where water run-off ends up? Taking the results from analyses of Figures 7, 7a-7e, Figure 8 shows a cross-tabulation between number of different types of messages viewed or heard by the respondent. Of those respondents (2009, 2010, and 2011) who correctly identified local creeks as the place where run-off ends up, 26-35 percent or close to a third of the respondents also identified one outreach source for information about pollution. The figure also shows an increase in the percentage of respondents viewing 2 to 4 types of media who also correctly chose local creeks as their answer.

Figure 8: Knowledge of Where Runoff Ends Up By Number of Different Types of Message Source (Broadcast, Print, Public Art, Events, Drain Markers, and/or Internet Site)

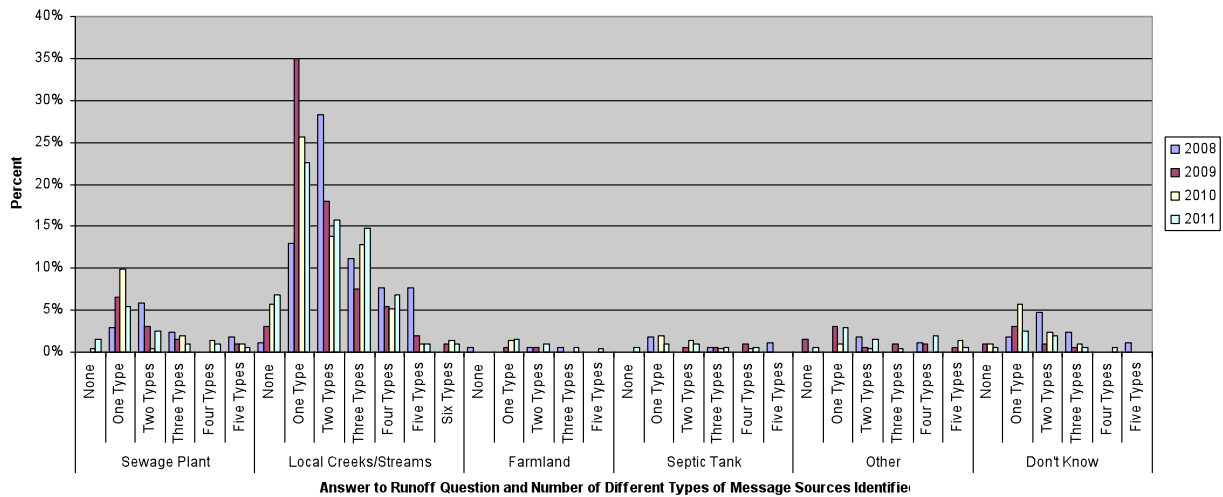
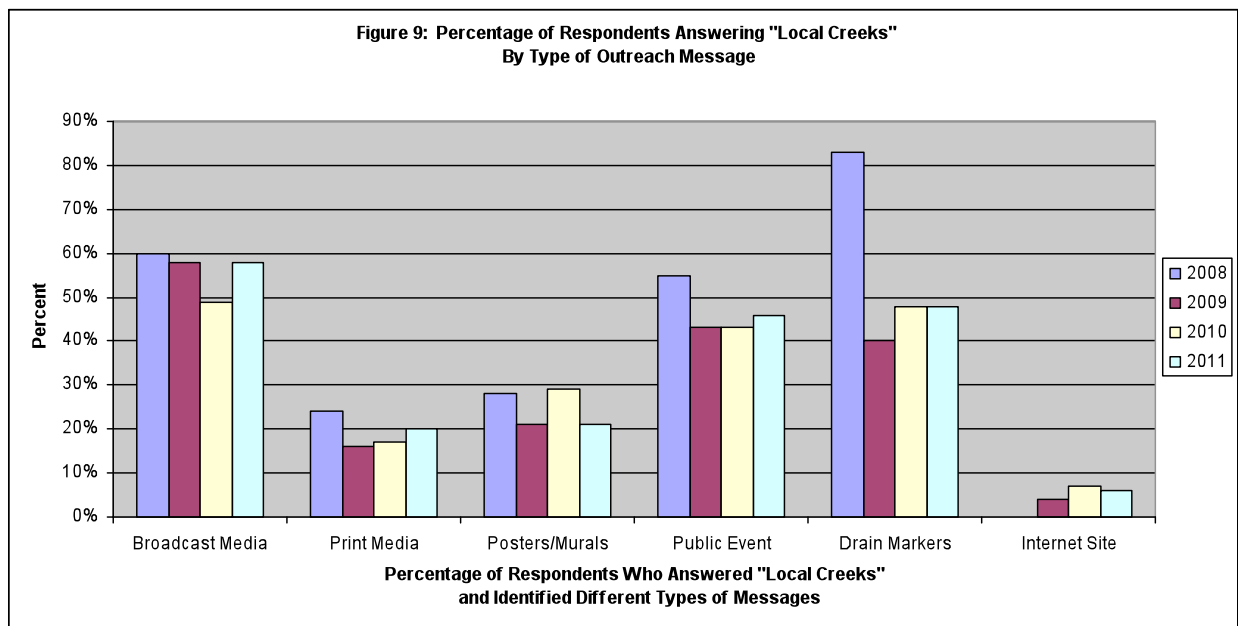
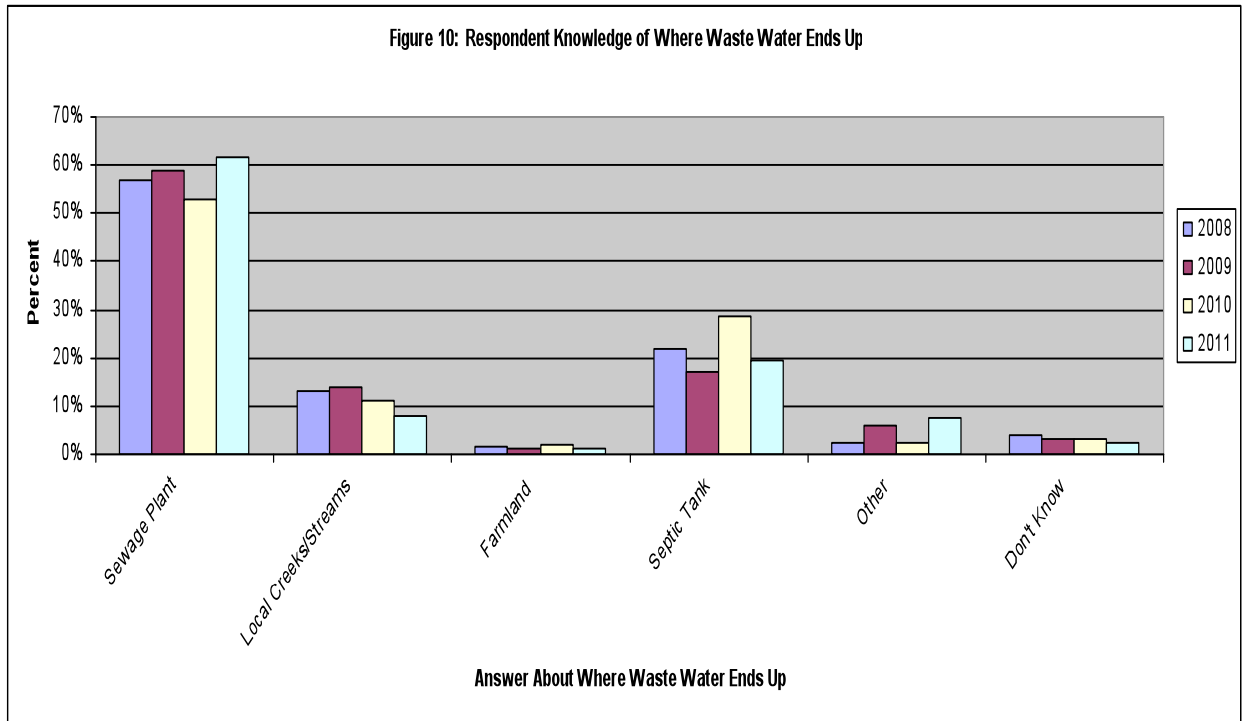


Figure 9 shows this same relationship from another perspective. Clearly, respondents who answered that local creeks are where run-off ends up also identified the categories of *Broadcast Media*, *Public Event*, and *Storm Drain Markers* as outreach sources of information about pollution of local creeks.

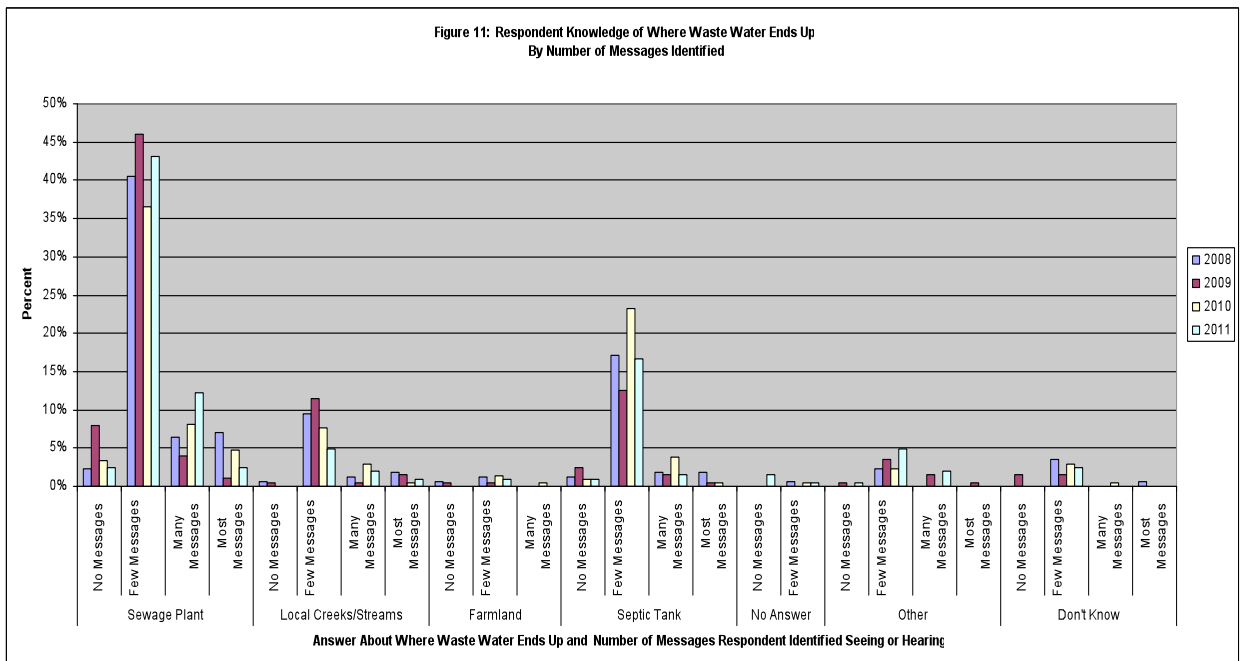


In sum, the data in Figure 6 through Figure 9 are strong indicators of the veracity and durability of the effect of broadcast media, public events, and the storm drain markers for increasing awareness and knowledge of runoff issues. In particular, the data suggest that television commercials, booths at public events, and storm drain markers are the driving and persistent forces for creating a knowledge base within the community over the past four years.

**Waste water.** Respondents were asked (q2) *In your opinion, where does most of the waste water from flushed toilets, kitchen sink, and bathtub drainage end up?* Figure 10 shows the distribution of the respondent opinion about where waste water ends up. The data show that over 82 percent of the respondents in the 2010 and 2011 surveys correctly identified that waste water goes into the sewage treatment or septic tank, while around 18 percent incorrectly identified that the waste water went into the streams, creeks, or farmlands.



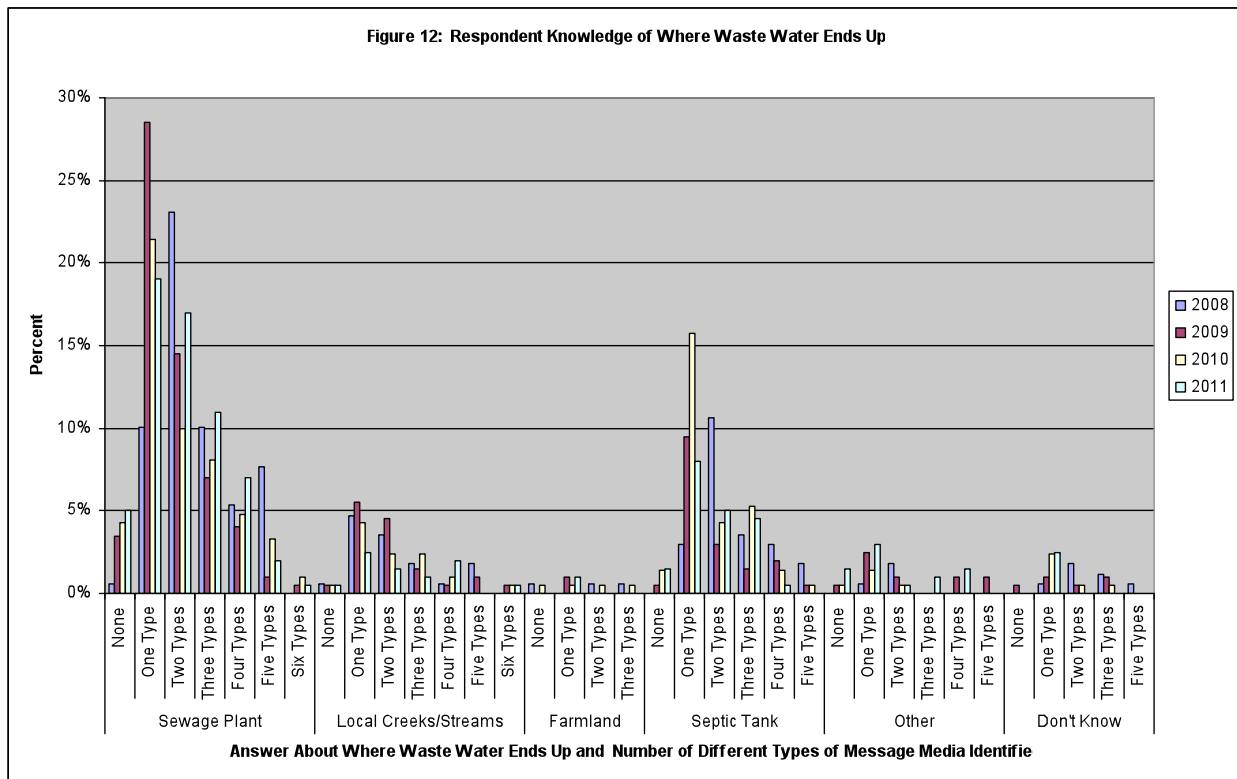
More specifically, Figures 11 and 12 show a closer examination of the relationship between knowledge of where wastewater ends up and messages seen or heard. As seen in Figure 11, the data suggest that of those respondents who identified having seen or heard a few messages; over 60 percent of the respondents in each survey understand correctly that wastewater ends up in sewage treatment plants or septic tanks.



Likewise, Figure 12 shows that of the different types of messages that respondents reported having seen or heard, those respondents that correctly identified *Sewage Treatment Plant* and *Septic Tanks* also reported seeing or hearing a single type of outreach media; these results are similar to the responses regarding where run-off ends up. Over 20 percent of respondents identified having one seen one type of

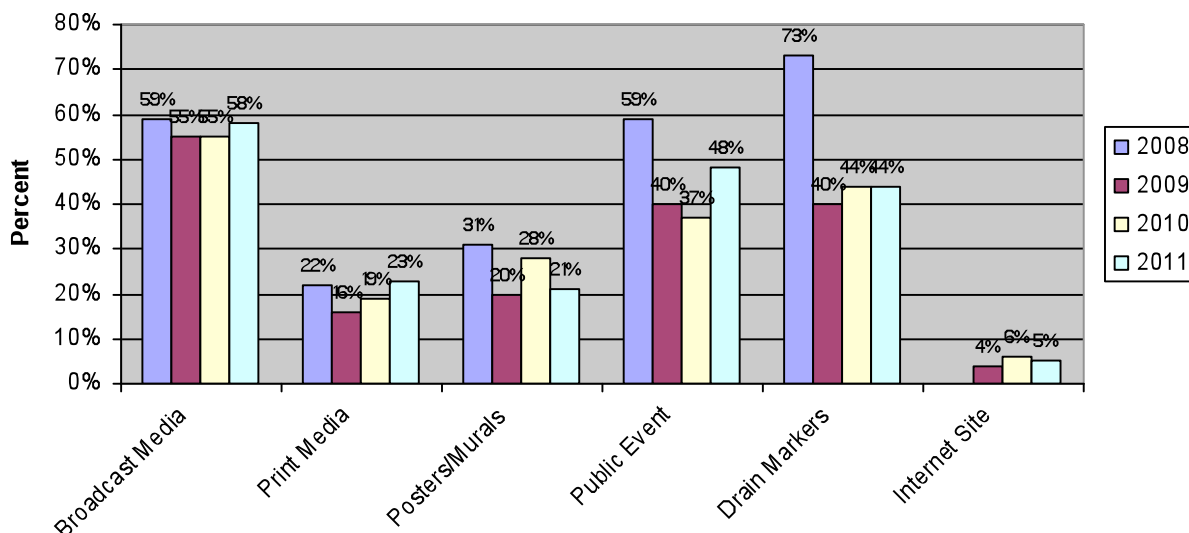


message in 2010; in 2011 the percentage of respondents having seen one type of message dropped slightly but the percentage that saw two or three types increased among those correctly identifying sewage treatment or septic tanks for answers. Interestingly, it appears that as the number of messages increases, more respondents appear to answer correctly that wastewater ends up in sewage treatment or septic tanks.



Finally, Figure 13 further refines the relationship between respondent knowledge of where wastewater ends up and messages seen or heard. Of those respondents who correctly identified the categories of *Sewage Treatment Plant* or *Septic Tank*, over 55 percent continue to refer to *Broadcast Media*, 37-59 percent identify *Public Events* and 40-44 percent identify *Storm Drain Markers* (73 percent in 2008), as the sources of their information about water pollution over the past four years. Notably, those who identified *Public Events* in 2011 increased to 48 percent, which is up from 37 percent in 2010. Certainly, the *Public Events* category of outreach messages has strongly increased over the past year. With the addition of *Stanky the Butt* and associated publicity for that and other performance events (i.e., eco-friendly car washes), it is reasonable to suggest that *Public Events* as a category is a strong contributor to shaping or influencing public knowledge about run-off problems and issues.

**Figure 13: Percentage of Respondents Answering "Sewage Treatment" or "Septic Tank" By Type of Outreach Message**



**Percentage of Respondents Answering "Sewage Treatment " or "Septic Tank" and Identified Different Types of Messages**

In sum, the data in Figure 10 through Figure 13 provide additional evidence of the veracity and durability of the effect of broadcast media, public events, and storm drain markers for increasing awareness and knowledge of wastewater issues. These data validate the results in Figure 5 through Figure 9 indicating that broadcast media and public events are important public outreach education tools, and particularly television and booths at public events, as steadfast and effective components of an educational outreach program. Permanent visual displays, such as posters, murals, and storm drain markers, also persistently reach over between 20 to 44 percent of the respondents.

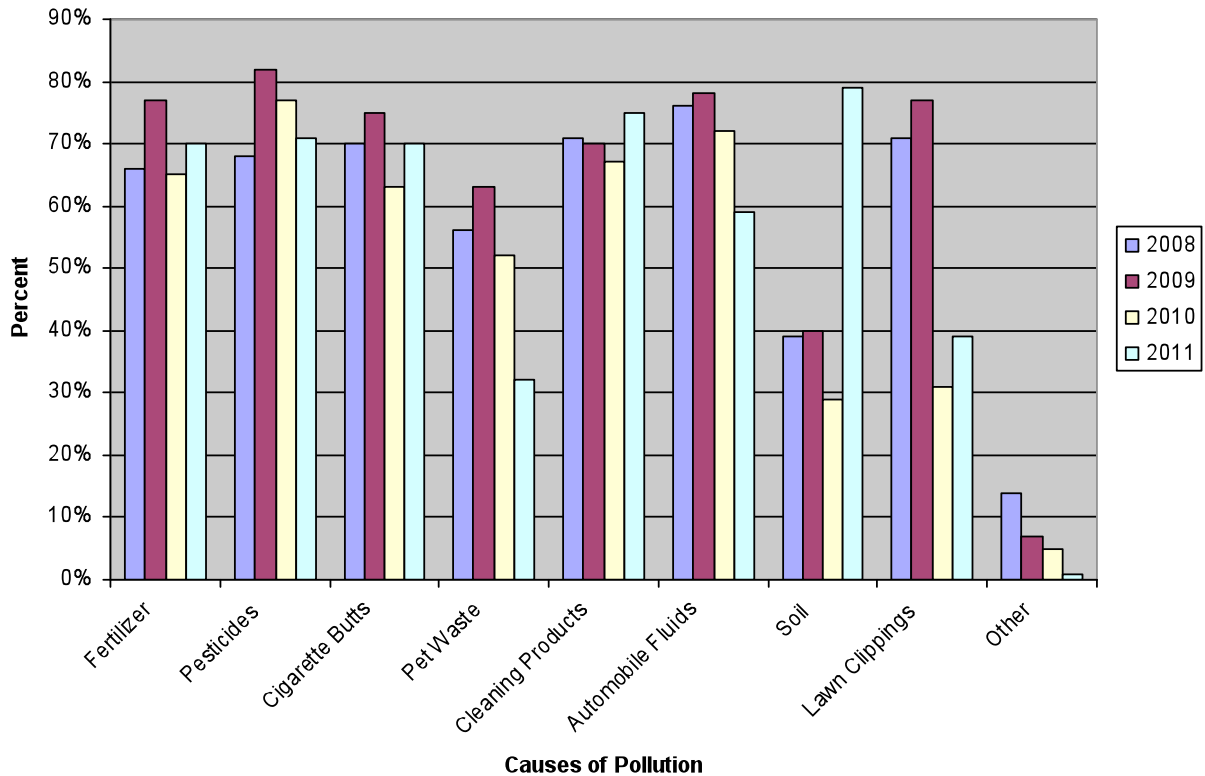
#### **Awareness and Knowledge of Causes of Creek Pollution**

The survey included questions that ask respondents to identify pollutants from a list as well as their opinions about particular items on the list. Various media outreach messages particularly targeted pollution from fertilizer, pesticides, cigarette butts, pet waste, cleaning products, automobile fluids, soil, and green waste. TV commercials focused on either pollution from pesticides and fertilizers, or automobile fluids, or general pollutants such as litter, pet waste, cleaning products (i.e. car washing). Radio commercials targeted general pollutants. These broadcast media messages were direct and used concrete language identifying the offending behavior or products. Alternatively, the newspaper ads, posters, murals, Stanky the Butt, and booth events focused on more artistic, abstract, and creative messages about the harmful effects of pollutants. The survey results indicate both knowledge and awareness of materials known as pollutants, particularly those pollutants directly mentioned in the broadcast media messages. The results suggest a much larger percentage were knowledgeable or aware of pollutants, which were repeatedly targeted in the outreach activities. Some of the less targeted items, such as soil and green waste, had a smaller percentage of respondents who either recognized or thought of these items as pollutants of creeks and streams.

**Identification of causes of creek pollution.** Respondents were asked (q3) *Which of the following do you think causes pollution of our local creeks?* The respondents were then given a list of pollutants and asked to choose all those response categories they thought were causes of pollution of local creeks. A summary of the results, as shown in Figure 14, indicates a large increase from 2010 to 2011 in the percentage of respondents that correctly identified soil as one of the pollutants. Fertilizer and lawn clippings also showed an increase in responses for 2011. Not surprisingly, in 2011, the percentage of

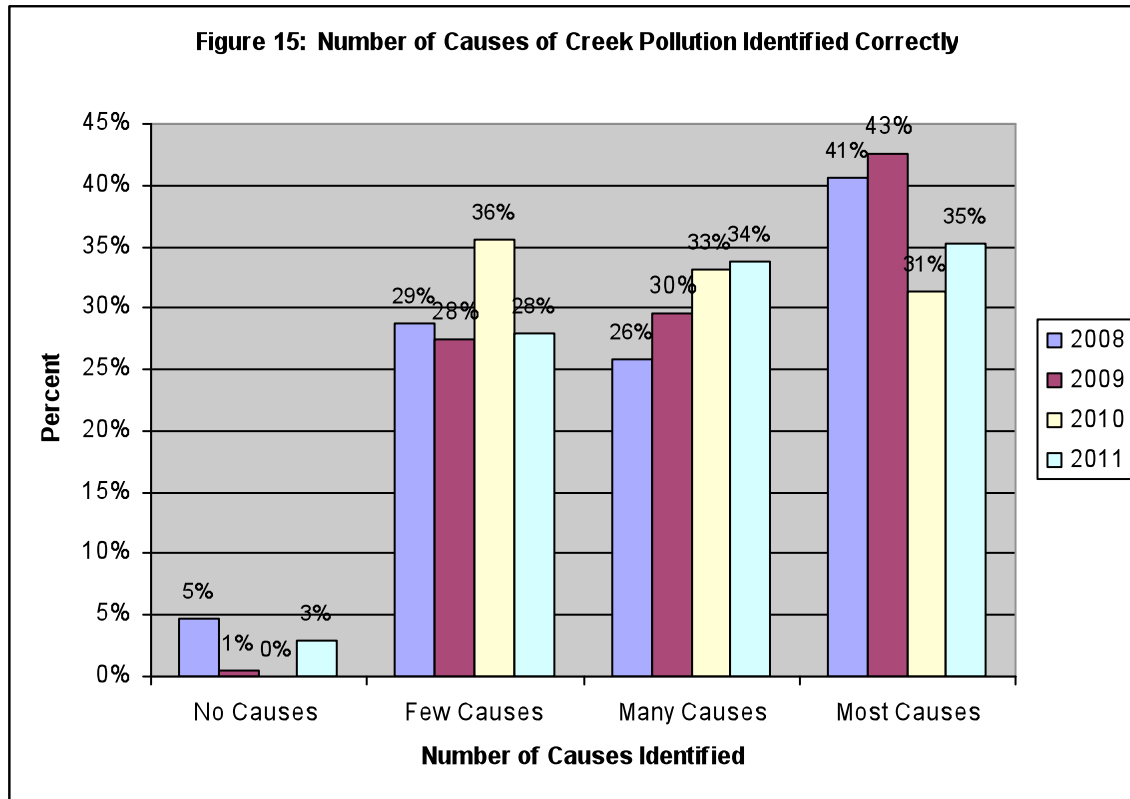
respondents correctly identifying cigarette butts as pollutants increased from 63 to 70 percent, although that percentage is within the four-year average.

**Figure 14: Percentage of Respondents Correctly Identifying Causes of Creek Pollution**



Still, in the past four years, over two-thirds of the respondents correctly identified fertilizer and pesticides as pollutants. Over half of the respondents identified pet waste as a pollutant. Nearly 70 percent of the respondents continued to identify cleaning products, between 60 and 70 percent identify automobile fluids, and in 2011 close to 80 percent identified soil as causes of creek pollution. The increase in the percentage of respondents identifying soil increased from 29 percent in 2010 to 79 percent in 2011. Clearly, special outreach events on soil as a pollutant seems to have had a very positive impact on public knowledge. Notably, there has been an overall decline in those identifying lawn clippings, pet waste, and automobile fluids as a cause of pollution; this indicates, perhaps, an area that may need additional attention in future EOP activities.

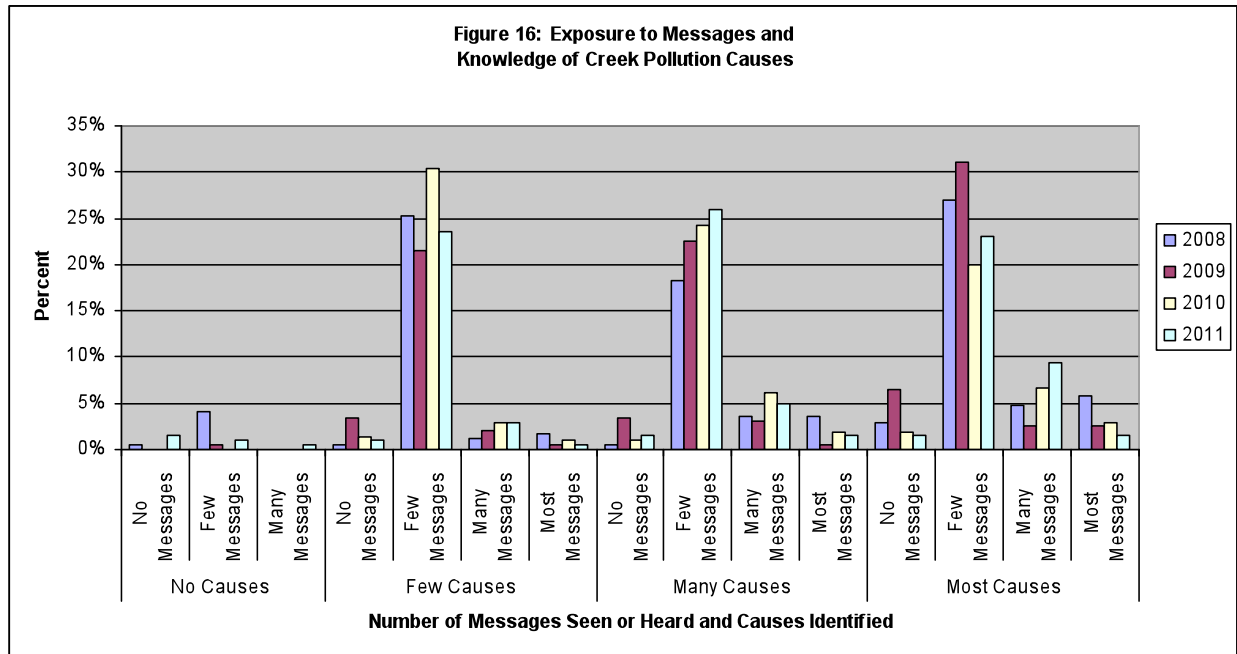
Another way to view respondent knowledge of pollutants is to examine the number of items correctly identified in q3 (*knowledge of causes*). Figure 15 shows a notable drop, from 5 percent to 0 percent, of the respondents that were *unable* to identify any of the items from the list as pollutants from 2008 to 2011. Almost all the respondents were able to identify at least a few items, whereas 35 percent of the respondents were able to identify most if not all of the items as pollutants in 2011. The category of *Many* (4-6 causes) shows increases from 2008 to 2011. This suggests that the respondents in the 2011 survey were more knowledgeable about causes of creek pollution than those in the earlier surveys.



**Educational messages and knowledge of causes.** One way to indirectly examine the impact of exposure to outreach messages is to check the relationship between knowledge and exposure. Using cross tabulation, Figure 16 shows the relationship between q3 (*knowledge*) and q10 (2008) and q6 (2009-2010) (*messages*). In 2010 and 2011, over 24-30 percent of the respondents identified a *Few* causes of creek pollution. Over 24-26 percent of the respondents who saw a *Few* (1-3 ) outreach messages also correctly identified *Many* (4-6) of the causes of creek pollution.

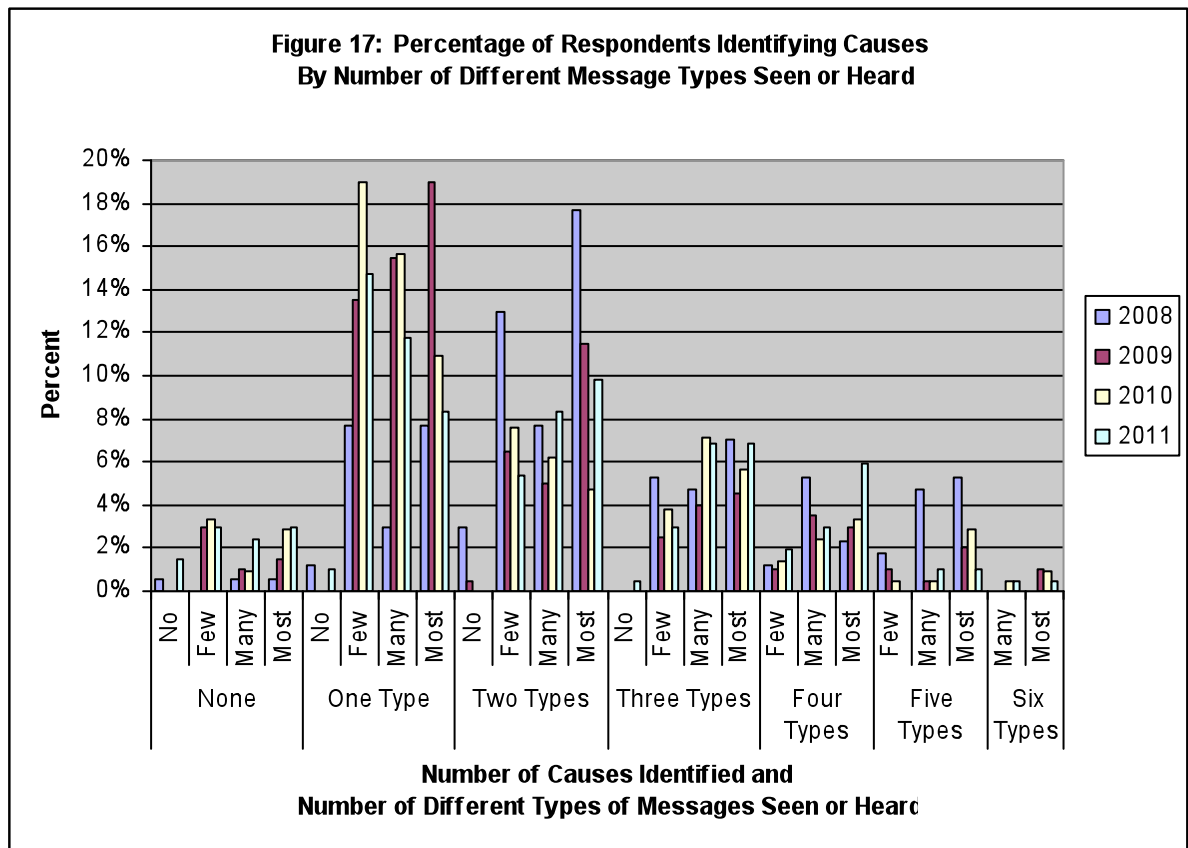


Further, as Figure 16 shows, of the respondents that identified *Most* (7-9) all of the causes of creek pollution identified in the survey, 20-23 percent identified these causes with just a few messages in 2010 and 2011. There is a notable increase in the percentage of respondents who can identify *Many* causes in 2010 and 2011. Given that all these causes of creek pollution were direct and indirect targets of a variety of outreach messages, particularly of the television and radio media “blasts” just prior to administering the survey, the results suggest that the outreach messages have been, and continue to be, important educational and knowledge building tools in the community.



Finally, as the data so far suggest, it appears that just a few messages have had efficient and effective impacts on respondent knowledge of creek pollution. To examine this further, the data in Figure 17 demonstrate the cross-tabular relationship between how many types of messages respondents reported having seen or heard and how many causes they were able to correctly identify.

As suggested earlier, one type of message, usually television, booths at public events, and/or storm drain markers, is associated with high levels of respondent knowledge about run-off and creek pollution. The data show that one type of message is associated with respondents who know a *Few* causes, *Many* causes, and *Most* causes comprising approximately 36-48 percent of the survey responses since 2009. Markedly, the percentage of respondents who reported hearing or seeing the messages recently and who cannot identify any causes is nonexistent in the 2010 and 2011 surveys. Without a doubt, the outreach messages are creating a meaningful and durable knowledge base within the community.



#### Direct and Indirect Measures of Behavior Changes

The primary goal of the previous and current outreach programs was to promote best management practices (BMP) for preventing urban runoff, particularly by changing behavior through educating the public so that their behavioral choices are consistent with these practices. The survey included three questions that directly or indirectly identify respondent behaviors that exhibit best management practices. These questions include:

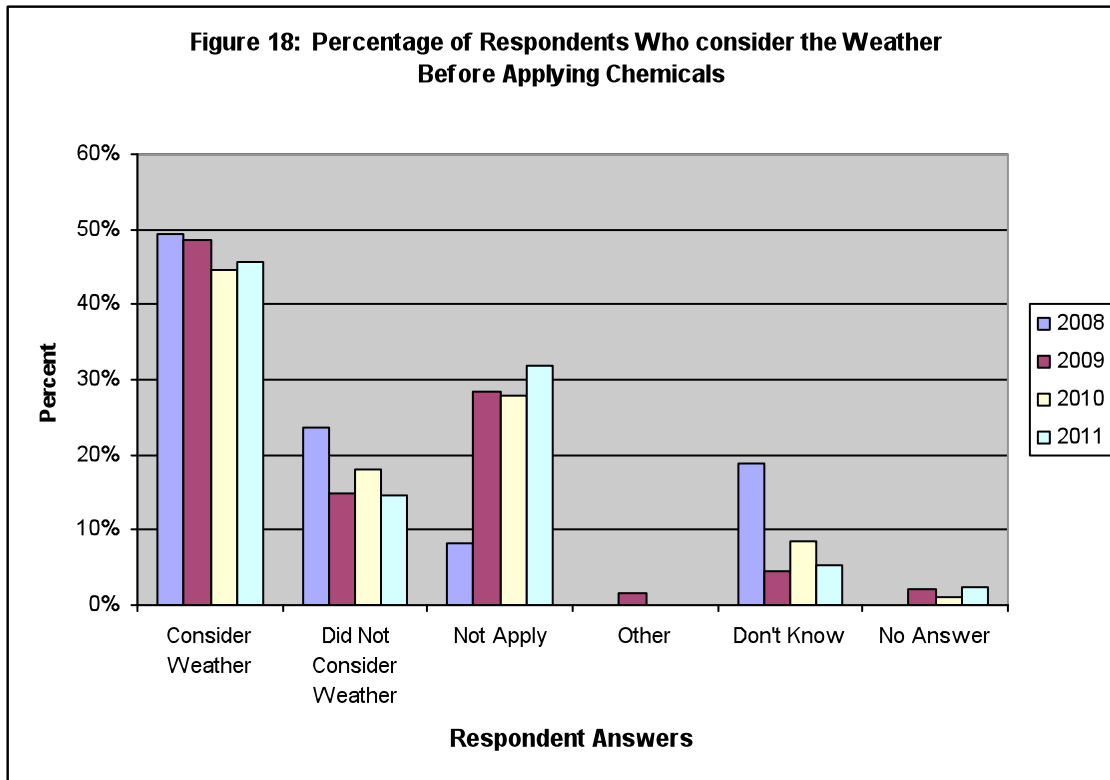
*(q4) Do you consider the weather forecast before applying or having someone apply pesticides and fertilizers to your lawn, garden, or outside plants?*

*2008 (q5) Where do you wash your motor vehicle, lawn mower, camper, and/or RV? (Check all that apply)*

*2009-2011 (q5) Where do you wash your motor vehicle, lawn mower, camper, and/or RV **most of the time**?*

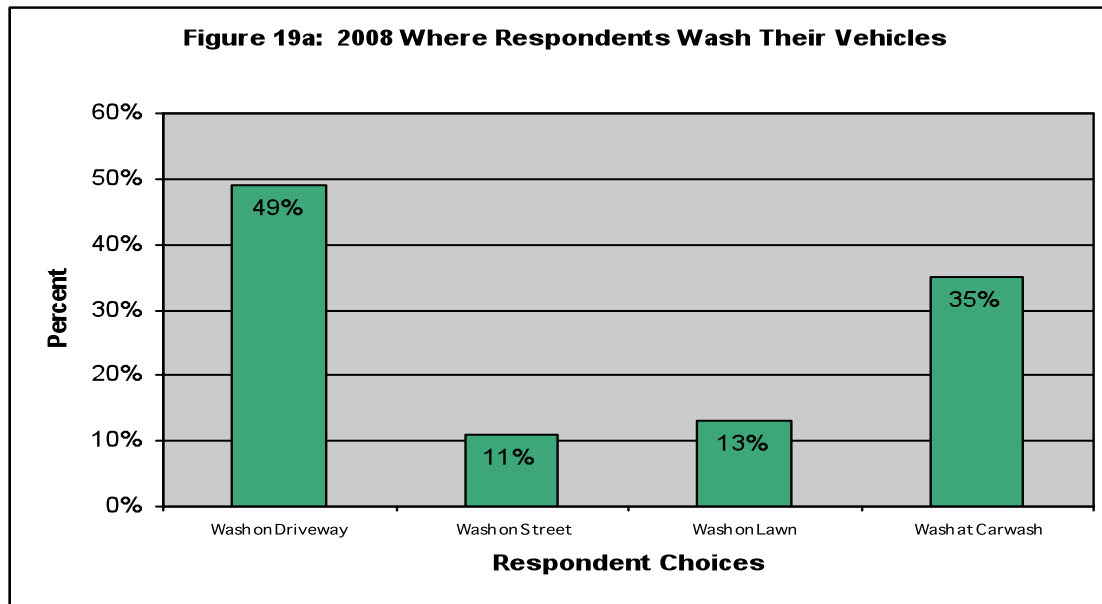
*(2008 q13) (2009-2011 q7) Which of the following activities have you changed as a result of local messages about protecting our creeks and streams from water pollution within the past year? (Check all that apply)*

**Checking the weather.** Proper use of pesticides and fertilizers has been the target of broadcast media outreach and some public event outreach messages. One direct measure of whether behavior is consistent with BMPs is if the respondent checks the weather before applying lawn and garden care chemicals to minimize potential pollution through runoff due to rain (q4). As Figure 18 shows, 45 to 50 percent of all respondents acknowledge that they checked the weather forecast before applying plant chemicals.

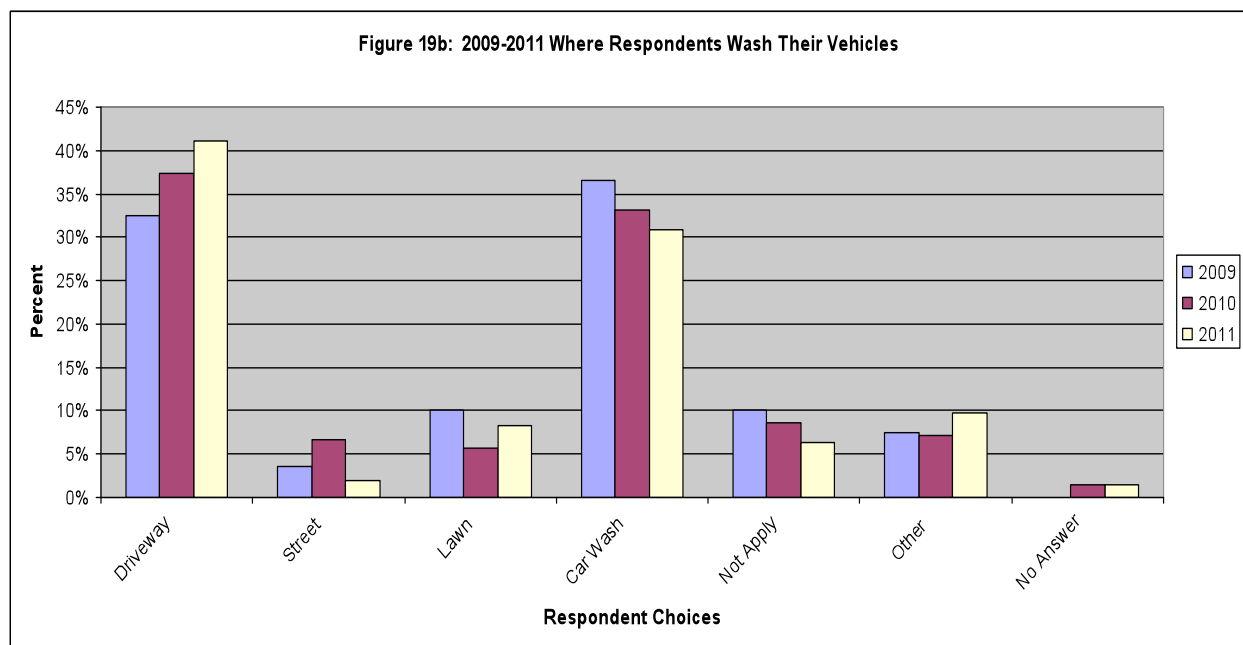


Only 15 percent of the 2011 respondents do not check the weather, which is down from 24 percent in 2008. Interestingly, the percentage of respondents who answered *Not Applicable* increased appreciably in 2009 to 2011 from 2008 percentages; this may be an indicator of a shift in housing choices, given that often only home dwellers have lawns and gardens. Also of note is the large decline in those respondents answering *Don't Know*, from 19 percent in 2008 to 5 percent in 2009 and 2011. This indicates that respondents are consistently demonstrating BMPs regarding use of fertilizers and pesticides, and more are knowledgeable about the need to do so.

**Washing vehicles.** Run-off pollution from car washing (soap as a pollutant) has been the focus of a variety of high profile outreach messages, including *Broadcast Media*, *Print Media*, *Public Art* (posters and murals), and *Public Events* (especially the booths and environmentally-friendly car wash fundraisers). In 2010 and 2011, a concentrated effort was placed on educating charity car wash fundraiser groups on how to conduct eco-friendly car washes. This outreach was documented by the press, which raised general awareness of the issue. Another direct measure of the effectiveness of these outreach messages in achieving BMPs is whether respondents are avoiding washing their vehicles where runoff could end up in the creeks through the gutters, as measured through q5 responses. As noted earlier, q5 (where respondent washes vehicles) was asked differently in 2008 with *Check all that apply* but in 2009-2011 respondents were asked to choose one method they use *most of the time*. As seen in Figure 19a many 2008 respondents used the street (11 percent) or driveway (49 percent) to wash their vehicles; 35 percent of the respondents reported using a carwash, and only 13 percent reported using the lawn.



In 2009-2011 (Figure 19b), 33-41 percent of respondents reported using the driveway but only 2-7 percent use the street to wash their cars. While the survey data from 2008 and 2009-2011 cannot be compared due to question-wording differences, there appears to be a larger percentage of respondents who use carwashes (40-44 percent) in 2009-2011.



Alternatively, in 2010 and 2011, the percentage of respondents saying they wash their cars on the driveway increased. This result may be related to question wording problems. Although respondents were not asked to provide additional methods, many treated the question as though it was a *Check all that apply* format. Some respondents who said they washed the car on the driveway also wrote that their driveways were gravel. The reason the question was changed from 2008 was to force respondents into identifying which method they use the most. Clearly, many respondents use a combination of methods. Given the focus of the outreach messages on using the lawn for car washing as a best management practice, it is expected that the percentage of exclusive use of these places would be higher; it was neither in 2008 nor

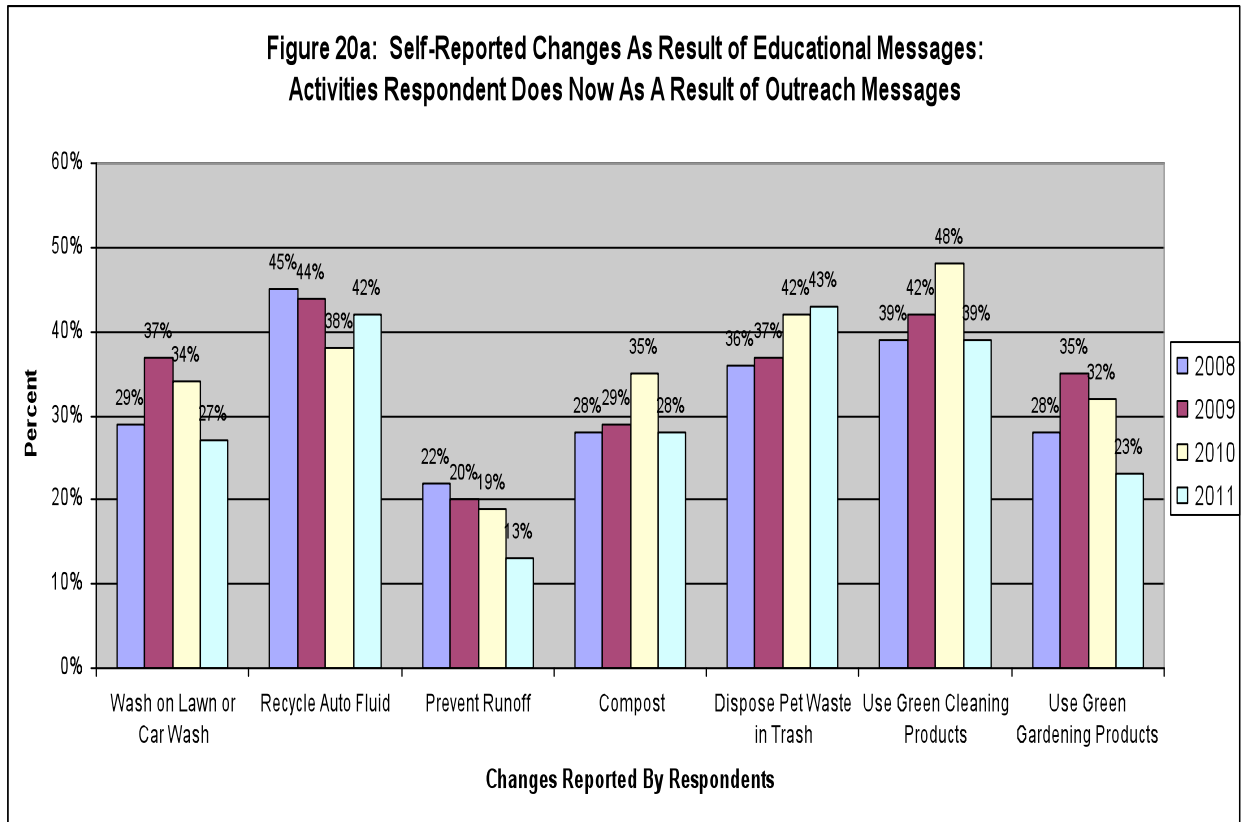


2009-2011. Perhaps the question should be divided into two parts where the first part asks respondents where they wash their vehicles most of the time, and then the second part asks respondents to report where else they wash their vehicles. It is also possible that during the recent economic downturn, some respondents who would have washed their cars at a car wash may have switched to washing the car at home. Regardless of the possible reasons, increasing the visibility of environmentally-friendly car wash techniques is clearly warranted.

**Identified changes in behavior.** Questions q13 in 2008 and q7 in 2009-2011 require the respondent to identify changes in their practices occurring after they viewed or heard messages. In 2008, prior to answering q13, respondents were asked if they have made changes in activities after viewing any message about local water pollution and 49 percent of the respondents answered *yes*. In 2009-2011, respondents were given the question in the negative as a choice toward the end after a 14 item list of activities that were changed in q7. The choice now is to check (or not) the box next to the phrase *I did not make any changes*; only **10 percent of the survey respondents said they did not make any changes**. This implies that 90 percent of the respondents in 2009 made changes; in 2010 and 2011, more than 96 percent of the respondents did not check that box. While these two questions are clearly not comparable because of question placement and question wording differences, it is suggestive that almost all respondents made changes in their activities after hearing or seeing messages about causes of local creek pollution.

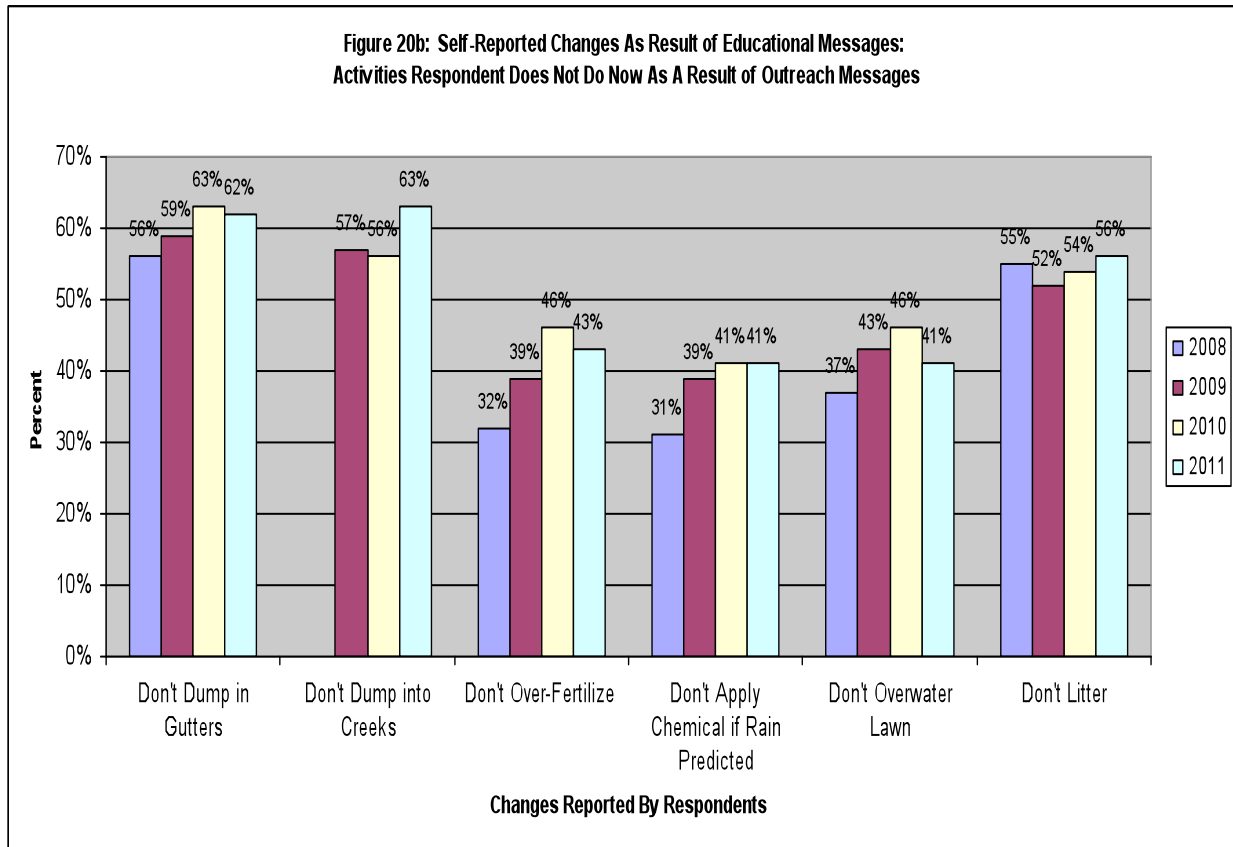
Question 13 (in 2008) and question 7 (in 2009-2010) ask respondents to identify changes in activities or practices they made after hearing or seeing local messages about creek pollution from a provided list; they were asked to check all that apply to them. In 2008, the list was somewhat random, and not grouped into any particular categories or order. Both new practices and curtailed bad practices were listed together. To determine the difference between new positive behaviors and negative behaviors no longer practiced, in 2009-2011 the list of activities were reorganized along ***Now I do*** (new practices) and ***Now I do not*** (behaviors no longer practiced). The descriptions of the activities stayed the same for the most part, with a few grammatical changes in a few of the items in the list. One descriptive word change, from *environmentally-friendly* to *green*, was made to more closely mirror popular culture terminology.

As seen in Figure 20a, the 2008-2011 survey results show increases in the percentage of respondents reporting that they now use BMPs as a result of local messages about water pollution in composting (28 percent mostly), pet waste disposal (42 percent mostly), and green cleaning products (32 percent mostly). Using BMPs for car washing, and green gardening products is down a bit from 2009 levels.



Likewise, respondents also self-reported that they have positively changed other practices that cause pollution. As shown in Figure 20b, a greater percentage of 2010 and 2011 respondents than in 2008 and 2009 report that they *Do Not*, as a result of local pollution-prevention messages, dump in gutters, over-fertilize, apply chemicals if rain is predicted, or over-water lawns ; 41-63 percent of changed these practices.<sup>7</sup> A consistent majority of respondents in 2008-2011 report that they *Don't Litter* but that is somewhat understandable, given that admonitions against littering are well-founded within American culture and many respondents may have already chosen not to litter prior to hearing or seeing outreach messages about littering.

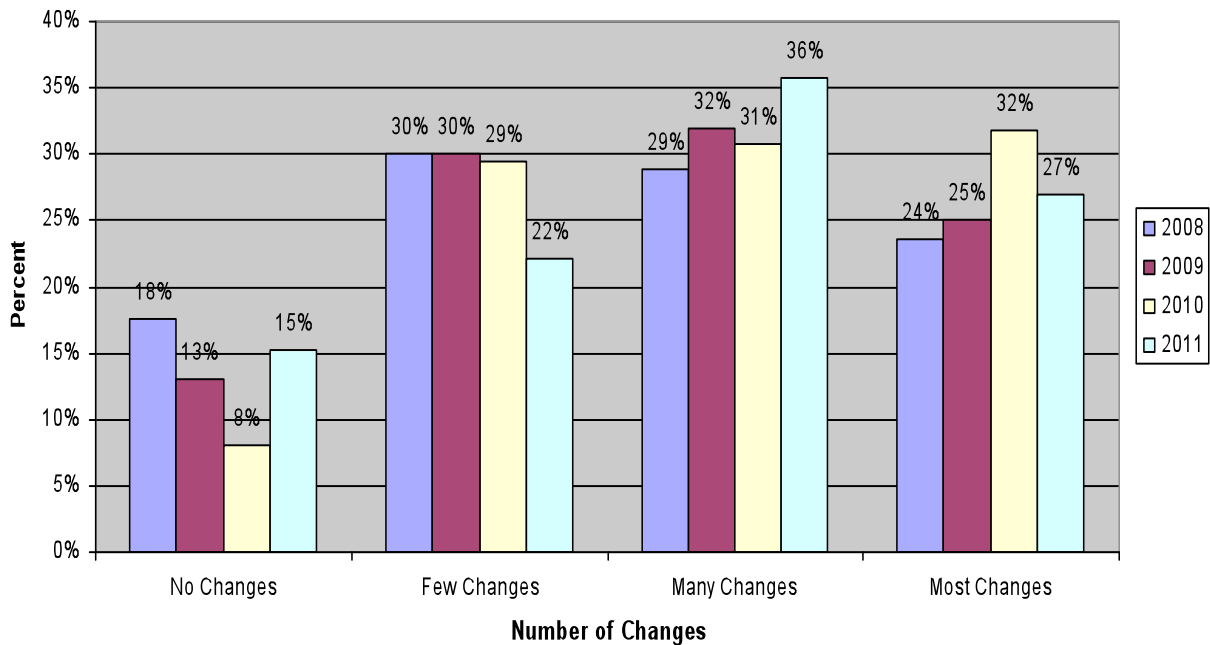
<sup>7</sup> The response *Dump anything into creeks or streams* was not in the 2008 survey.



It might be expected that the percentage of the respondents who acknowledge changing to good habits or breaking old habits should be higher; and indeed it could be. One problem that is not immediately apparent but could be depressing the percentage of those who embrace BMPs is that the survey question (q7) does not distinguish between those who have the opportunity to change their activities, and those who do not. More specifically, respondents who do not own vehicles, have a lawn, have a pet, have a garden, or smoke would only be able to choose changes involving green cleaning products, dumping (gutters or creeks), and littering with trash. Alternatively, the survey question does not provide an opportunity for those who already engage in BMPs to indicate that they already use these practices. This situation provides such a respondent the choice of not marking these or saying they do these activities now when in fact, they already did them prior to hearing or seeing messages. The question clarity might be improved by providing the options of *Not Apply* and *Already Do* or *Never Did* (respectively) so that the survey responses can be clearly identified for respondent changes when such changes can be made.

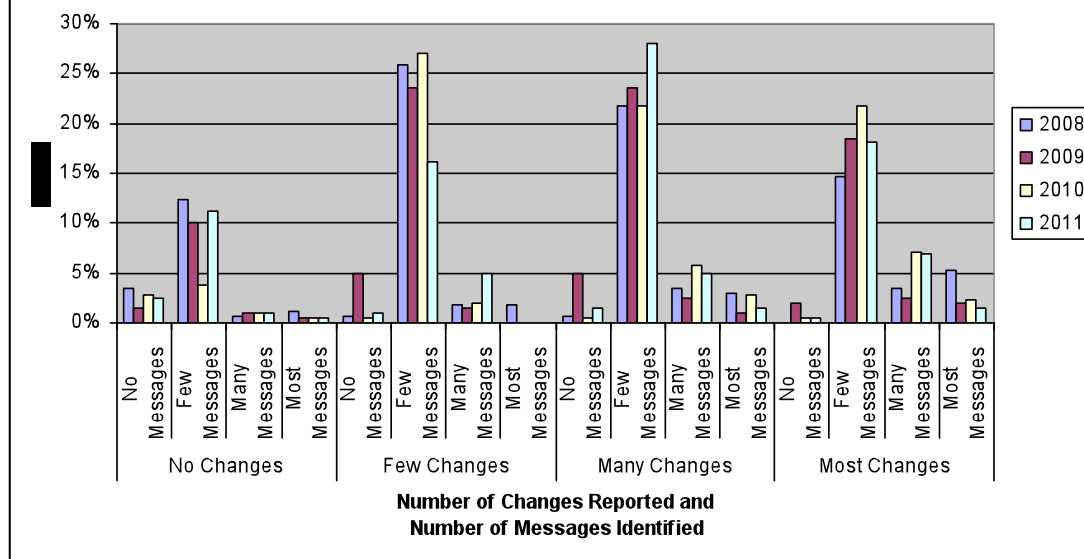
Further examination of the data suggests that more respondents in 2009 -2011 claim to have made at least one change as a result of local pollution messages than in 2008. Figure 21 shows that in 2011 15 percent of the respondents report no changes, while 22 percent report 1-3 changes, 36 percent report 4-7 changes, and 27percent report 8-13 changes in the direction of the outreach messages. These data show that 85 percent of the respondents report changes in the direction of the outreach messages regarding BMPs for prevention of pollution.

**Figure 21: Percentage of Respondents Reporting Changes After Seeing or Hearing Messages**



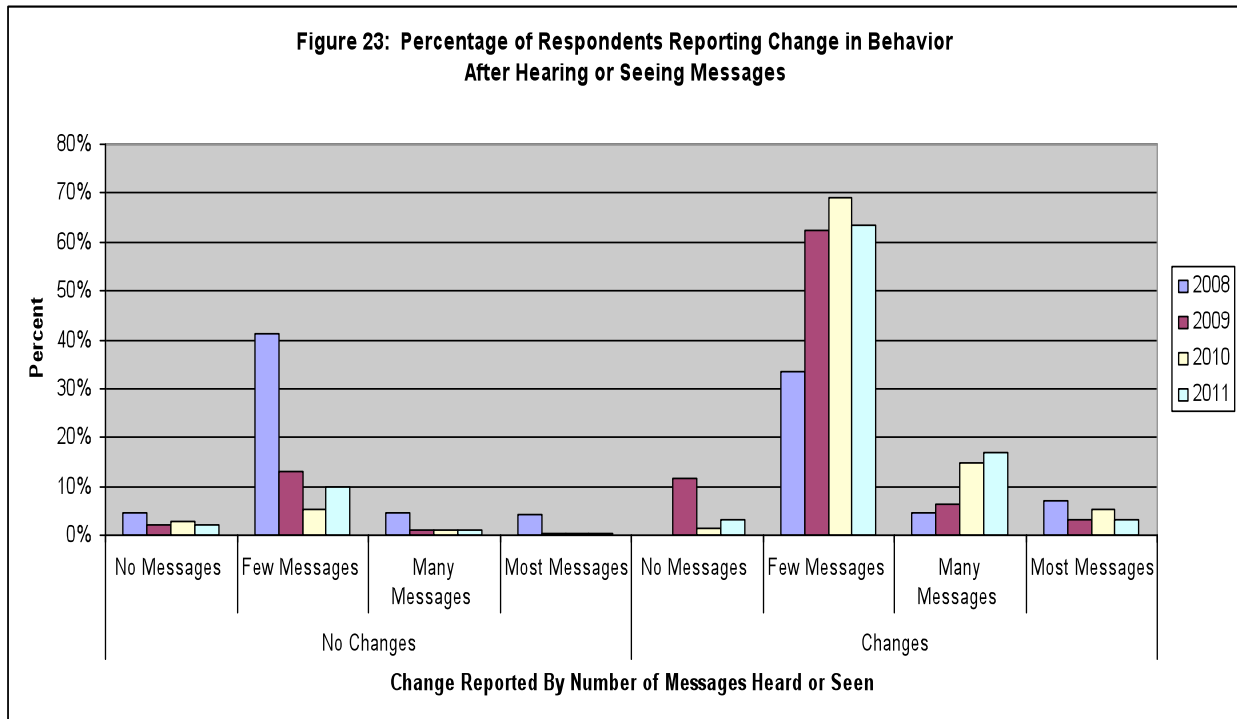
In a final examination of the veracity of the self-identified changes, Figures 22-24 show the strong relationship between exposure to outreach messages (2008 q10) (2009-2011 q6) and self-reported changes as a result of viewing those messages (2008 q13) (2009-2011 q7). Figure 22 shows that 16-27 percent of those making 1-3 changes also identified 1-3 messages. The percentage of respondents making *Many* changes after seeing or hearing *Few* outreach messages increased in 2011 from levels in 2008, 2009, and 2010.

**Figure 22: Percentage of Respondents By Number of Messages Identified and Number of Changes Reported**

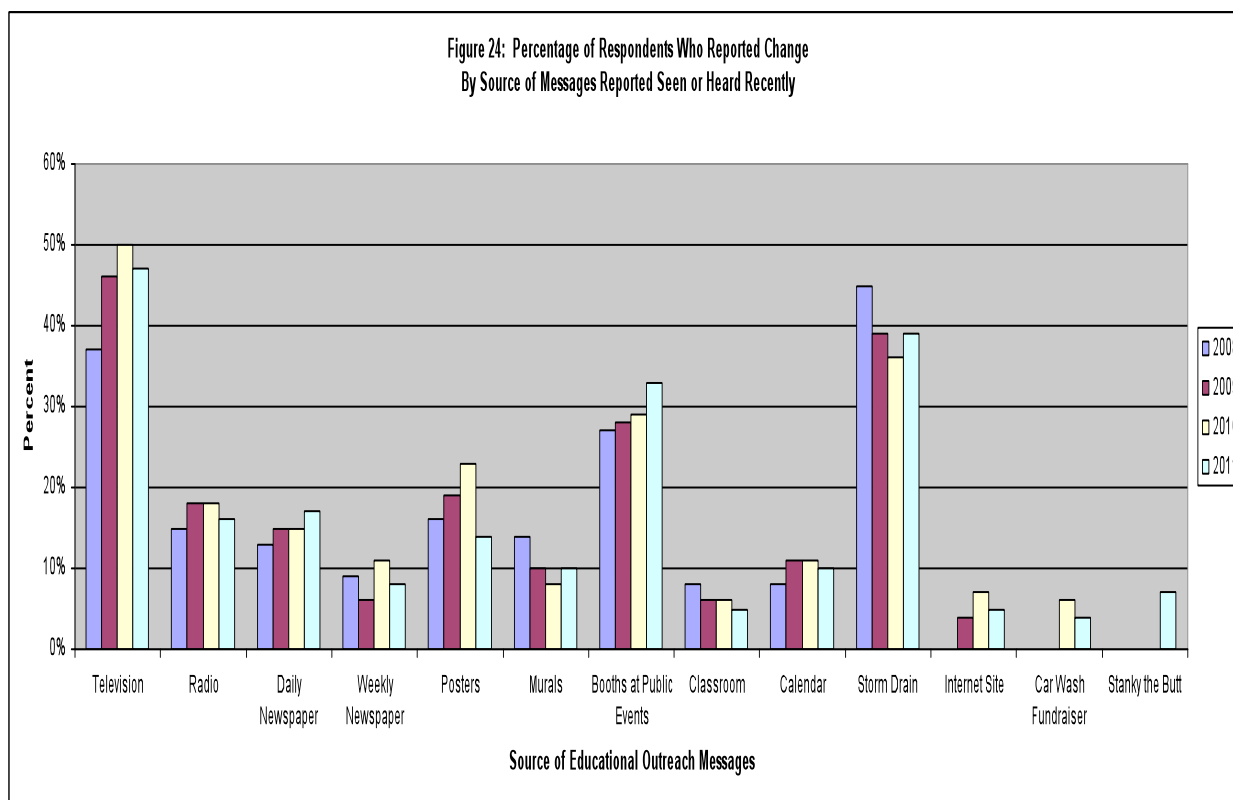




More specifically, according to the results in Figure 23, the percentage of respondents reporting making any changes at all increased from 40 percent in 2008, to 66 percent in 2009, to 70 percent in 2010 for those respondents who identified having seen or heard only a few messages about protecting local creeks and streams; this was down to 64 percent in 2011. An impressive 84 percent in 2009, 91 percent in 2010, and 87 percent in 2011 of respondents made some kind of change as a result of seeing or hearing the EOP outreach messages.



More specifically and interestingly, among the types of messages heard or seen recently that are related to self-reported changes in behavior, the results in Figure 24 show increases in the percentage of respondents reporting having made at least one change and who also reported having recently seen or heard outreach messages on television, weekly newspapers, posters, public events, and Internet sites since 2008. In 2011, the increase focused on Booths at Public Events which increased from 29 percent in 2010 to 33 percent in 2011. The percentage of respondents answering that they made changes and viewed messages has stayed remarkably stable and somewhat consistent over the four years. About half of these respondents said they saw or heard television commercials, almost a third identified booths at public events, and almost 40 percent saw the storm drain markers.



The storm drain markers, while showing a slight decrease, still exhibit a strong presence; of the respondents reporting having made changes, 39 percent identified having seen storm drain markers in 2011. Ironically, despite that no ads were placed in daily newspapers, it seems that local news coverage of the outreach activities at public events is associated with those respondents who self-reported making positive changes to BMPs. Interestingly, while ads were placed in the weekly newspapers, the messages accessed on the Internet site are almost as strongly related as the messages from the car wash fundraisers to those respondents who identified at least one change. The message from *Stanky the Butt* shows a competitive response rate to classrooms, weekly newspaper, and the Internet.

As noted earlier, the percentage of respondents having seen or heard any of the outreach messages may be depressed due to the inclusion of the word *recently* in the question. The question (q7) about changes the respondent made does not constrain respondents to their interpretation what is defined as *recent*; the question only limits the respondent to *within the past year*. Still, even that limitation may depress responses to murals and storm drain markers, which were placed in the community almost four years ago. As such, even given the possibility that the data may be a bit depressed due to time context ambiguities, the data in Figure 24 strongly supports the assertion that educational outreach activities are associated with not only increased public knowledge (Figures 14-17), but also with positive behavioral changes embracing the BMPs promoted by these messages, particularly those involving television commercials and booths at public events.

## CONCLUSION

The purpose of the *2011 Storm Water Management Public Knowledge Survey* was to provide an indicator of the veracity and durability of current and past educational outreach efforts for promoting best management practices for the prevention of urban runoff pollution. Although the results cannot be compared to 2005 and 2007 cross-sectional survey results, analysis of the 2008, 2009, 2010, and 2011 convenience survey results validates the conclusion from those studies that the educational outreach program has been highly efficient and effective in increasing the Chico community's knowledge base and support for best management practices for reducing and preventing urban run-off pollution of local

waterways.

A comparative of the 2008, 2009, 2010, and 2011 survey data suggest the educational outreach program has been and continues to be highly effective in improving awareness, increasing knowledge, and changing behavior consistent with best management practices for preventing pollution of waterways through the storm drain system from household, yard, and garden runoff. In particular, the data indicate a strong relationship between knowledge of causes of local creek pollution and exposure to past or current outreach activities. The 2011 survey results strongly support the effectiveness of timely outreach message placement, particularly through television commercials and booths at public events, as mediums for not only enhancing public knowledge about the causes of local waterway pollution, but also for stimulating changes in behavior that embrace best management practices for handling materials that contribute to water pollution through urban run-off. The new addition of a performance character, *Stanky the Butt*, appears to have increased public awareness as part of the public events source of outreach messages.

While the survey provides an indication of the veracity of the outreach results, there are a few ways it can be improved for future monitoring. First, questions regarding issues particular to housing with yards, to owning pets, to having vehicles, parenting status, etc should include a response option of “*I already do this*” This should help distinguish between respondents who have the opportunity to utilize BMPs and those for whom the issues are irrelevant.

Second, questions about outreach messages should give respondents a clear time period as well as an opportunity to acknowledge seeing or hearing the messages outside the time period. Given that some of the public art (murals and posters) and storm drain markers have been fixtures within the community for over four years, it is reasonable that some outreach messages may have had an impact prior to the current year’s outreach program activities. Giving the respondent an opportunity to recognize current and past outreach messages allows for an examination of the longevity of those messages within the community.

Third, the question regarding where vehicles are washed (q5) should probably be a two-part question where the respondents are asked what method they use most, and then the respondents are asked if there is another method they use in addition. That change will provide the opportunity for determining what methods are predominate, while satisfying the respondent’s need for full disclosure of all the methods they use. Perhaps it might be helpful to also indicate if there is a reason why respondents do not wash cars on the lawn or car wash. It is possible that the survey is missing information about motivations for not using BMPs for car washing.

Finally, the modifications from 2008 to the 2009 survey format reduced the survey from two pages to one page by eliminating questions that could be confusing or perceived as redundant. This made the survey implementation easier; however, to create the suggested clarity in the question responses, such changes may lengthen the survey. Lengthening the survey not only increases the time it takes to fill-out the survey (thereby reducing its attractiveness to potential respondents) but also doubles the paper used to produce the survey. One way Oman Communications chose to solve both problems is to create a paperless survey through the use of e-surveys or web survey on laptop computers. Using a survey software program, *Survey Monkey*, the survey was set-up on two computers where respondents take the survey on the computers. This change eliminated the paper copy and associated errors for recording the responses but because of Internet connectivity problems did not improve survey efficiency. Once resolved, the paperless survey approach will expand the effectiveness of the survey by solving the length problem given that the respondent will not see the length of the survey and the instrument will not be constrained by the size of one 8.5 by 11 inch page. Eliminating the paper copy is also a more appropriately environmentally friendly approach to surveying by reducing reliance on paper for gathering the data. To ensure an accessible survey tool, a number of paper copies can be held in reserve for individuals who are not interested in taking the survey using the computer, or for possible computer glitches that can and do occur with all computers and software programs at one time or another.

In addition and as complementary, the primary benefits of using survey software can provide a variety of secondary benefits to enhance the quality of the data collected once connectivity issues are resolved. First, using an e-survey will reduce recording errors due to respondents selecting more than one response when only one is expected. In addition to being more environmentally friendly, the e-survey will also reduce data entry errors that often occur in hand-entered data. If desired, an e-survey can also be used to expand the survey field from public events such as fairs and shows, to those who visit the website or experience the messages in other media forums. For fair or show attendees too busy to stop and take the survey, the survey can be sent electronically to a PDA, iPhone, or email address. Further, the survey could be launched at different times and the public could be encouraged in outreach messages to take the survey.

Most web or e-survey software contains a confirmation response; to induce potential respondents to take the survey, coupon give-aways from local commercial vendors could be provided upon completion of the survey in that confirmation response. Finally, the web or e-survey can be produced in several languages; notably it is necessary to have the survey in English, but having the survey available in Spanish will diversify the respondents and be more reflective of the Chico population.

In sum, the 2011 survey, confirms the veracity and durability of the educational outreach activities by showing clear and convincing evidence that the activities impact knowledge, awareness, and behavior of those respondents exposed to these messages. The data also indicate a strong relationship between exposure to past or current outreach activities and self-reported changes in handling of household, yard, and garden waste. In particular, highly visual outreach activities, particularly television commercials, booths at public events, and storm drain markers are independently associated with knowledge and awareness of runoff issues.

(see Appendices for Convenience Survey 2011 Report: IMPACT OF STORMWATER MANAGEMENT EDUCATION AND OUTREACH PROGRAMS, by Dr. Diane E. Schmidt, in Appendix E)

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## Evaluation

According to the 2011 SWM EOP Convenience Survey Report, the SWM EOP outreach messages are creating a meaningful and durable knowledge base within the community and 85 percent of survey respondents report changes in the direction of outreach messages regarding BMPs for prevention of pollution.

A comparative of the 2008, 2009, 2010, and 2011 survey data suggest the educational outreach program has been and continues to be highly effective in improving awareness, increasing knowledge, and changing behavior consistent with best management practices for preventing pollution of waterways through the storm drain system from household, yard, and garden runoff. In particular, the data indicate a strong relationship between knowledge of causes of local creek pollution and exposure to past or current outreach activities. The 2011 survey results strongly support the effectiveness of timely outreach message placement, particularly through television commercials and booths at public events, as mediums for not only enhancing public knowledge about the causes of local waterway pollution, but also for stimulating changes in behavior that embrace best management practices for handling materials that contribute to water pollution through urban run-off. The new addition of a performance character, *Stanky the Butt*, appears to have increased public awareness as part of the public events source of outreach messages.

(Schmidt, 2011 Convenience SWM EOP Survey Report).

The 2011 survey, confirms the veracity and durability of the educational outreach activities by showing clear and convincing evidence that the activities impact knowledge, awareness, and behavior of those respondents exposed to these messages. The data also indicate a strong relationship between exposure to past or current outreach activities and self-reported changes in handling of household, yard, and garden waste. In particular, highly visual outreach activities, particularly television commercials, booths at public events, and storm drain markers are independently associated with knowledge and awareness of runoff issues. (Schmidt, 2011 Convenience SWM EOP Survey Report).

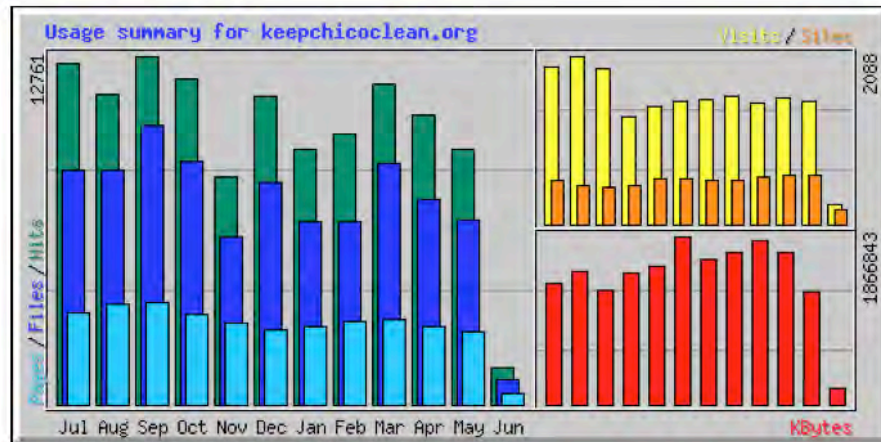
Other methods of program evaluation have been employed in addition to survey results. Website traffic for [www.keepchicoclean.org](http://www.keepchicoclean.org) has been tracked and evaluated in correlation with media blast messages.



## SWM EOP Website

### Usage Statistics for keepchicoclean.org

Summary Period: Last 12 Months  
Generated 06-Jun-2011 04:35 PDT



| Summary by Month         |           |       |       |        |                |                 |              |              |              |               |
|--------------------------|-----------|-------|-------|--------|----------------|-----------------|--------------|--------------|--------------|---------------|
| Month                    | Daily Avg |       |       |        | Monthly Totals |                 |              |              |              |               |
|                          | Hits      | Files | Pages | Visits | Sites          | KBytes          | Visits       | Pages        | Files        | Hits          |
| <a href="#">Jun 2011</a> | 227       | 153   | 69    | 42     | 172            | 176091          | 255          | 419          | 922          | 1365          |
| <a href="#">May 2011</a> | 301       | 218   | 86    | 49     | 611            | 1247385         | 1525         | 2676         | 6784         | 9356          |
| <a href="#">Apr 2011</a> | 352       | 250   | 94    | 52     | 608            | 1681072         | 1570         | 2844         | 7503         | 10570         |
| <a href="#">Mar 2011</a> | 377       | 285   | 101   | 48     | 592            | 1822853         | 1504         | 3131         | 8848         | 11700         |
| <a href="#">Feb 2011</a> | 354       | 240   | 108   | 56     | 550            | 1689773         | 1591         | 3051         | 6720         | 9929          |
| <a href="#">Jan 2011</a> | 300       | 215   | 91    | 49     | 545            | 1609964         | 1540         | 2830         | 6691         | 9327          |
| <a href="#">Dec 2010</a> | 363       | 263   | 88    | 49     | 567            | 1866843         | 1530         | 2744         | 8171         | 11282         |
| <a href="#">Nov 2010</a> | 276       | 204   | 100   | 48     | 569            | 1542038         | 1455         | 3015         | 6130         | 8308          |
| <a href="#">Oct 2010</a> | 385       | 287   | 106   | 43     | 488            | 1456296         | 1334         | 3300         | 8904         | 11940         |
| <a href="#">Sep 2010</a> | 425       | 340   | 124   | 64     | 464            | 1257657         | 1923         | 3734         | 10217        | 12761         |
| <a href="#">Aug 2010</a> | 366       | 276   | 118   | 67     | 478            | 1467655         | 2088         | 3684         | 8556         | 11352         |
| <a href="#">Jul 2010</a> | 402       | 277   | 108   | 63     | 534            | 1351840         | 1959         | 3352         | 8594         | 12483         |
| <b>Totals</b>            |           |       |       |        |                | <b>17169467</b> | <b>18274</b> | <b>34780</b> | <b>88040</b> | <b>120373</b> |

Generated by [Webalizer Version 2.01](#)

The website shows a consistent trend throughout the 2010-2011 program year. A total of 18,274 visits from 07/10 to 06/09/10 were reported, which is 2,829 visits more than the previous year, indicating an 18% increase. While viewership remained consistently high throughout the year, peak viewership occurred during July, August and September 2010. This may indicate that the Clean Creeks Calendar outreach, which was conducted in early fall 2010, helped to direct more website traffic than is historically "the norm" for that time of year (The SWM EOP

outreach began earlier in the fiscal year of 2010 than in year's past; beginning in early August, rather than September or October.) The usage statistics may also indicate that the release of the 2011 calendar at the end of December 2010 boosted web site visits throughout the remainder of the fiscal year, as the number of visits dipped slightly from 1,334 in October to a consistent range of 1,500+ from December to May. The website shows high public use, and has proved to be a successful method for disseminating information on Best Management Practices, access to Creek Watch Hotline information, contact information for Clean Water Business partners, links to other educational websites, and access to the Stream Team Program.

### **Creek Watch Hotline**

The number of calls to the Creek Watch Hotline increased from 60 calls in 2009-2010 to 77 total calls in 2010-2011, showing a 28% increase over all. While there was an increase in calls for this year, the total usage still remains low. Again, this may be due to more and more people finding this type of information online, rather than by telephone. The increasingly high website use in 2010-2011 indicates this may be the case and emphasizes the importance of providing online resources through a dedicated website.

### **Clean Water Business Partner Feedback**

A feedback survey was distributed to 2011 renewing CWBPs. Twelve CWBPs returned completed surveys. (See Appendix D)

#### **2011 Clean Water Business Partner Survey**

Share your ideas and program feedback! Please take a moment to answer the following questions, for the improvement of the Clean Water Business Partnership Program (CWBP).

1. Has your business used the program logo in any advertising or promotional activities?
2. Would you prefer to have the logo made available to you in print form, rather than digital form?
3. Do you receive inquiries from the public and potential customers due to your status as a CWBP?
4. Which outreach media provides the most effective promotion for your business? (e.g. TV commercials, Radio commercials, print media, website, etc.)
5. How can the CWBP program better support your Clean Water business?

Thank you for your commitment to local healthy creeks and streams! We look forward to your feedback.

Q1) Three out of the twelve businesses have used the program logo in advertising and promotional activities.

Q2) Four businesses indicated that they would prefer to have the logo in print form, rather than digital form; Three stated that they would like the logo in both formats; Two stated they prefer only digital format; and Three did not answer question two.

Q3) Two out the twelve businesses expressed that they do receive inquiries from the public as result of their participation in the CWBP program; Two businesses answered that they do not know if they receive business as a result of their CWBP status; and Nine reported that they do not receive new customers.

Q4) The following are the most effective advertising media, as reported by the CWBPs (some selected more than one media avenue):

TV – 1

Website – 4

Print - 6

Customer referrals/Word of mouth – 4

Direct mail – 1

Public outreach (Farmers Market) – 1

Q5) The following is a summary of the CWBPs' suggestions on how the CWBP program can better support their business. For detailed responses, see Appendix D.

1. Enforce compliance with competition.
2. Advertise name of business.
3. More TV and newspaper ads.
4. Educate the public further on the CWBP program.
5. Listing business name (\*The CWBP, Sunrise Carpet Cleaners, made this request. Their business has been listed for four consecutive years on the keepchicoclean.org website.)
6. I don't know
7. Billboard advertising

In response to the request for the CWBP logo in print format, the 2011 logo was printed on an adhesive vinyl material and distributed to all CWBPs. In regards to most effective media formats indicated for advertising, the CWBP program currently provides promotion of the CWBP program by listing all partners on the program website and advertising the url in print ads and the Cal Water insert; on posters; and in TV and radio commercials (Spanish & English). The individual CWBPs are directly promoted (business names are listed) in the Clean Creeks Calendar and on the website.

Raising public awareness of the CWBP Program would better support the CWBPs and educate the public. (See recommendations section.)

### ***Clean Creeks in the Classroom***

Among the evaluation tools used for the Clean Creeks in the Classrooms are: Pre-Post brainstorming with students, Pre-Post tests, application of knowledge by students, observation of staff and volunteers, feedback from students and teachers.

Staff and Volunteers observe that students gain:

- Awareness of their own local watershed
- Knowledge of common pollutants that enter waterways through storm drain system
- First-hand knowledge of how a healthy riparian zone helps maintain clean and healthy water ways locally
- Vocabulary of watershed terms and run-off pollution prevention terms
- Ability to identify BMPs, or behaviors that they as individuals and their family members can adopt to prevent pollution of our waterways through the storm water drain system.
- Self-identity that includes “steward” of local waterways

Classroom and Field Day Evaluation Measurements:

- Pre-post brainstorming sessions
- Creation of songs and chants incorporating new knowledge
- Design of t-shirts with educational messages, which are then worn by the students, giving them the opportunity to inform the public.
- Listing or naming behaviors that are BMP's;
- Students identify themselves as stewards (stewardship cheer).

An indicator of program success for the 2010-2011 *Clean Creeks in the Classroom Program* was high teacher/student demand for the program. Sixteen classes were served in 2010-11, which exceeds the contract requirement of fourteen classes. There continues to be a waiting list for the program, and returning teachers year after year. Those teachers who have participated in the program are proactive in signing up for the next school year in advance. This may indicate that teachers and students are benefitting from the program. Rosedale, Chapman, Parkview, Emma Wilson, Citrus, Four Winds and Hooker Oak schools have consistently participated in the program since 2008.

In fall 2010 a draft 5<sup>th</sup> grade level Pre-Post test, on urban watershed concepts, was developed for the Clean Creeks in the Classroom Program by the Consultant and Kids & Creeks staff. It will be revised and implemented during the 2011-12 school year.



Kids and Creeks – Clean Creeks in Classroom \_\_\_\_\_-test

Name: \_\_\_\_\_ Date \_\_\_\_\_

True or False: Circle the correct answer:

1. A watershed is a building in which one can store water bottles. T / F
2. A watershed is an area of land where rainwater and snow falls, and then drains into streams, creeks, rivers, lakes and oceans. T / F
3. Soil, minerals, native plants, fish, wildlife and people are all part of a watershed. T / F
4. The riparian zone is a wildlife habitat found along the banks of a river, stream or creek. T / F
5. In cities and towns there are storm drains that lead to pipes under ground that capture the rainwater and water from driveways, streets and sidewalks, and then drain directly to our creeks. T / F
6. Water that flows into storm drains goes through treatment before it enters our creeks and rivers. T / F
7. Plants, rocks and soil can clean polluted run off water before it enters our waterways or trickles down into our water table. T / F
8. Big Chico Creek drains to the Sacramento River, which drains to the ocean. T / F
9. It is important to pick up your pet's waste so that it doesn't pollute our local waterways. T / F
10. Litter and soda pop should be dumped in the gutter, so that they can go down the storm drain. T / F



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## Recommendations

1. In May 2011 three long-term loan car wash kits were provided to three high schools in Chico. The ASB Club advisors and students will serve as stewards of the kit for their school during the 2011-12 school year, and provide training for charity groups holding car wash events at their site. In support of their commitment to eco-friendly car wash events, the Consultant recommends that a checklist be developed for the clubs, detailing the set-up instructions (including the map that facilities created for their site.) This ongoing contact with the ASB students ensures that new students are educated and trained on how to educate their fellow students. General support for their efforts will be needed (e.g. Visit the first car wash of the season to ensure that students and teachers are setting up the kit properly.)
2. In regards to Car Wash Fundraiser Outreach, the development of an “Eco-friendly Car Wash” poster is recommended. Charity car wash groups that implement BMPs at their car wash events can display the poster. This was recommended for 2010-11, but was not accomplished.
3. The Consultant recommends the translation of the radio commercial into Hmong, and the coordination of regular broadcasts in 2011-12 as part of the media blast. There are a few Hmong radio shows broadcast weekly on KZFR (community radio station) on Saturday and Sunday mornings. The hosts may be able to assist with the translation, and the station will broadcast the translated 60-second spot as a public service announcement.
4. It is recommended that the posters translated into Hmong and Spanish be printed (25 of each poster) and distributed to businesses and organizations with Spanish and Hmong speakers in their employ. (PIC has expressed an interest in providing training for limited English-speaking employees, for the prevention of pollution of waterways through the storm drain system, and would benefit from having Spanish and Hmong materials.)
5. It is recommended that an evaluation form be developed for participating classroom teachers to fill out upon completion of the Clean Creeks in the Classroom Program. Teacher responses can be collected and used for feedback on program improvements. (This was recommended for 2010-11, but Kids & Creeks postponed the development of this survey until the following school year.)
6. The Consultant recommends that, in partnership with Kids & Creeks staff, the Pre-Post Test on urban watershed concepts be revised and administered to Clean Creeks in the Classroom students.

7. The Consultant recommends that the SWM EOP booth location for the 2012 Home & Garden Show be indoors, rather than outdoors. The weather has been unpredictable in late March, and in 2011 adversely affected outreach and data collection.

8. The two murals, with runoff pollution prevention messages (that were created under the Chico USA Program) have both been painted over and no longer exist. It is recommended that a new mural be created in the downtown area, as the murals were an effective means of generating press coverage and fostering stewardship of waterways by community members. The public felt ownership of the murals, and hence the message was embraced.

9. The Consultant recommends greater collaboration with the Stream Team Program. Stream Team volunteer opportunities can be promoted through joint press coverage (e.g. Stanky the Butt collects water samples). The Stream Team Coordinator can make a 10-minute presentation to Clean Creeks in the Classroom students, providing more accessible avenues for hands-on educational opportunities for water quality protection.

#### 10. 2011 Survey and Data Collection

The SWM EOP transitioned from a paper to a paperless survey in 2011. Some surveys were collected online and some on paper, depending upon access to the Internet. Using *Survey Monkey*, the survey was set-up on small laptops at the SWM EOP booth during the Home & Garden Show and Thursday Night Market, and respondents took the survey on the computers. Paper copies were available for individuals who were not interested in taking the survey digitally, and were used entirely at the Silver Dollar Fair, as the Internet signal was inaccessible at the SWM EOP booth location.

It is recommended that the survey questionnaire be transferred into software that allows data collection off-line, and can be uploaded to the Internet when a signal is present. This will allow for a completely paperless survey and will save on the cost for the Internet service. The laptops purchased for the survey in spring 2011 can be used for data collection in 2011-12.

The Consultant also recommends that the survey questionnaire be translated into Spanish.

11. The following survey revisions are suggested by Dr. Diane Schmidt:

First, questions regarding issues particular to housing with yards, to owning pets, to having vehicles, parenting status, etc should include a response option of “I already do this.” This should help distinguish between respondents who have the opportunity to utilize BMPs and those for whom the issues are irrelevant.

Second, questions about outreach messages should give respondents a clear time period as well as an opportunity to acknowledge seeing or hearing the messages outside the time period. Given that some of the public art (murals and posters) and storm drain markers have been fixtures within the community for over four years, it is reasonable that some outreach messages may have had an impact prior to the current year’s outreach program activities. Giving the respondent an opportunity to recognize current and past outreach messages allows for an examination of the longevity of those messages within the community.

Third, the question regarding where vehicles are washed (q5) should probably be a two-part question where the respondents are asked what method they use most, and then the respondents are asked if there is another method they use in addition. That change will provide the opportunity for determining what methods are predominate, while satisfying the respondent’s need for full disclosure of all the methods they use. Perhaps it might be helpful to also indicate if there is a reason why respondents do not wash cars on the lawn or car wash. It is possible that the survey is missing information about motivations for not using BMPs for car washing.

Lastly, making the transition successfully from a paper to an e-survey tool, will allow for a longer survey, giving the opportunity to implement clarity suggestions to questions particular to housing with yards, owning pets, having vehicles etc.; and questions about outreach messages viewed or heard within a certain time period. An e-survey will also reduce recording errors due to respondents selecting more than one response when only one is expected. In addition to being more environmentally friendly, the e-survey will also reduce data entry errors that often occur in hand-entered data. Further, an e-survey can be expanded to reach a wider survey field at different times throughout the year.

## **Appendix A**

### **Media Outreach Materials**

**Appendix B**  
**Classroom Instruction/Curriculum and Schedules**



**Appendix C**  
**Newspaper Ads/Public Service Announcements/Press Coverage**

**Appendix D**  
**Clean Water Business Partners/Cal Water Insert Samples**

**Appendix E**  
**Appendices from**  
**Convenience Survey 2011 Report:**  
**IMPACT OF STORMWATER MANAGEMENT EDUCATION**  
**AND OUTREACH PROGRAMS by Dr. Diane E. Schmidt**

**(Full report included in the Data Collection/Survey Results section)**

## **APPENDIX A: OUTREACH MATERIALS DESCRIPTION AND TARGETS**

**TV Commercials** – Three 30-second TV commercials. One addresses related landscaping pollution causes, such as fertilizers and pesticides. The other addresses auto fluids, and the third address general pollutants, such as litter, pet waste, car washing (soap, etc.). The commercials are broadcast in Spanish and English.

**Radio Commercial** – One 60-second radio commercial that addresses general pollutants, such as litter, cigarette butts, pet waste, car washing (soap, etc.). It is broadcast in Spanish and English.

**Daily/weekly newspaper ads** – General message (with image of car wash wastewater draining into the gutter) or specifically targeting the cigarette butt issue, “Keep your butt out of the gutter.” Ads also includes general messages, such as “Water that flows into the gutters drains directly to the creeks.”; or “Remember, only rain down the storm drain.”

**Daily/weekly newspaper articles/radio and TV interviews** – Frequent press coverage, such as newspaper articles, and radio and TV interviews that cover various topics (calendar project; eco-friendly car washing; etc.), help to get the message to the public.

**Posters** – 5 posters – Three of the posters contain the general messages with image of car wash wastewater draining into the gutter, image of oil spill on 1-Mile Big Chico Creek swimming area, and image of landscaping tools and toad in the back of work truck. Two of the posters target the cigarette butte issue and read, “Keep your butt out of the gutter,” and “Water that flows into the gutters drains directly to the creeks.”

**Murals** – One mural remains in downtown Chico. It conveys the general message, “Thank you for keeping Chico’s creeks clean! Water in the gutters drains directly to the creeks.”

**Booth at a public event** – All of the program educational messages are disseminated at the booth, with the main message being, “Water that flows into the gutters drains directly to the creeks.”

**Information from Classroom outreach** - All of the program educational messages are taught in the classroom presentations, with the main messages, “Water that flows into the gutters drains directly to the creeks.”; and “Only rain down the storm drain.” The students receive calendars and detailed information regarding BMPs for the prevention of potential pollutants from entering the creeks through the storm drain system (such as litter, pet waste, car washing (soap, etc.), fertilizers and pesticides).

**Chico Clean Creeks Calendar** – The outreach information contained in the annual calendar is comprehensive and includes inspirational images of beautiful local urban creek scenes. Creek Watch Hotline information is listed in the calendar. The calendar refers readers to additional information sources for those who choose to educate themselves further. It also provides information on all of the City’s storm water management programs, such as the Clean Water Business Partnership Program and the Clean Creeks in the Classroom Program.

**Internet website [www.keepchicoclean.org](http://www.keepchicoclean.org)** - The website is comprehensive and includes images of all of the outreach programs, outreach materials downloads, TV and radio commercials in Quick Time files, Clean Water Business Partnership Program surveys and pledges, Creek Watch Hotline information for reporting illegal dumping, links to the Butte County Storm Water Management Program online. The website includes links to other sites that provide additional information for those who follow the prompts to educate themselves further.

**Storm Drain Markers** – The markers convey the message, “No Dumping – Drains to Creek.”

**Car Wash Kit** – The car wash kit is available for loan to charity car wash groups. While it physically prevents pollution of waterways during car wash fundraisers, the use of it also serves as an educational tool for the community.

**Stanky the Butt**—A character in the shape of a cigarette butt. The character mingles in the Chico downtown area and at local events providing outreach information, pocket ashtrays for smokers, and engaging in an entertaining, attention-getting performance to raise awareness of the negative impacts that cigarette butt litter has on water quality of local waterways.

**APPENDIX B:  
2008 CONVENIENCE SURVEY**

**We're conducting a brief and important survey on water pollution in our area. (4-30-08)**

In your opinion, where does most of the runoff water from your yard, gutter, street, or road end up?

- ☐ the city sewage treatment plant
- ☐ local creeks and streams
- ☐ outlying farmland
- ☐ a septic tank
- ☐ other \_\_\_\_\_ (please specify)
- ☐ Don't know

In your opinion, where does most of the waste water from flushed toilets, kitchen sink, and bathtub drainage end up?

- ☐ the city sewage treatment plant
- ☐ local creeks and streams
- ☐ outlying farmland
- ☐ a septic tank
- ☐ other \_\_\_\_\_ (please specify)
- ☐ Don't know

Which of the following do you causes pollution of our local creeks? (Check all that apply)

- ☐ Fertilizer
- ☐ Pesticides
- ☐ Cigarette butts
- ☐ Pet waste
- ☐ Cleaning products
- ☐ Automobile fluids
- ☐ Soil
- ☐ Lawn clippings (green waste)
- ☐ Other \_\_\_\_\_ (please specify)

Do you consider the weather forecast before applying or having someone apply pesticides and fertilizers to your lawn, garden, or outside plants?

- ☐ Yes
- ☐ No
- ☐ Don't know

Where do you wash your motor vehicle, lawn mower, camper, and/or RV? (Check all that apply)

- ☐ On the driveway
- ☐ On the street
- ☐ On the lawn
- ☐ Commercial car wash
- ☐ Don't have a motor vehicle, lawn mower, camper, or RV

In your opinion, does discarding oil, paint, wastewater, or any other chemicals into the gutter cause pollution of local creeks?

- ☐ Yes
- ☐ No
- ☐ Don't know

In your opinion, does discarding oil, paint, wastewater, or any other chemicals on to the ground cause pollution of local creeks?

- ☐ Yes
- ☐ No
- ☐ Don't know



In your opinion, does discarding lawn-dippings or other green waste into local creeks cause pollution?

- ☐ Yes
- ☐ No
- ☐ Don't know

In your opinion, does discarding lawn-dippings or other green waste along the banks of local creeks cause pollution?

- ☐ Yes
- ☐ No
- ☐ Don't know

Which of the following messages about keeping our gutters and local creeks free from pollution (such as litter, auto fluids, pet waste, fertilizer, and/or pesticides) did you hear or see recently? (Check all that apply)

- ☐ Television commercial
- ☐ Radio commercial
- ☐ Daily Newspaper ads
- ☐ Weekly Newspapers ads
- ☐ Posters
- ☐ Murals (downtown Chico)
- ☐ Booth at a public event
- ☐ Other \_\_\_\_\_ (please specify)

Have you seen any storm drain markers with messages such as "No Dumping, Drains to Creek?"

- ☐ Yes
- ☐ No
- ☐ Don't know

Have you changed any of your household, yard, or automobile care activities within the past year as a result of any message about local water pollution?

- ☐ Yes
- ☐ No
- ☐ Don't know

Which of the following activities have you changed as a result of local messages about protecting our creeks and streams from water pollution within the past year? (Check all that apply)

- ☐ Never dumping anything into gutters or storm drains.
- ☐ Wash your vehicle on the lawn, or at a car wash, instead of in the driveway.
- ☐ Recycle used motor oil or other automobile fluid.
- ☐ Not over-fertilizing your lawn.
- ☐ Never applying fertilizers or pesticides when rain is predicted.
- ☐ Not over-watering your lawn.
- ☐ Preventing runoff from the lawn through landscaping design.
- ☐ Composting or mulching lawn-dippings and other green waste.
- ☐ Picking up after your pet and disposing of the waste in the trashcan.
- ☐ Never littering (e.g. cigarette butts and/or general trash)
- ☐ Use environmentally-friendly cleaning products.
- ☐ Use environmentally-friendly gardening methods.
- ☐ Other \_\_\_\_\_ (please specify)

What is your zip code? \_\_\_\_\_

Thank you for taking the time to answer these questions and helping to keep our local creeks clean! You are the solution to pollution!

## APPENDIX B: 2009 CONVENIENCE SURVEY

Thank you for participating in the City of Chico's survey on water pollution in our area. You are the solution to pollution!

- 1) In your opinion, where does most of the runoff water from your yard, gutter, street, or road end up?
 

|  |  |
|--|--|
| <input type="checkbox"/> the city sewage treatment plant | <input type="checkbox"/> outlying farmland |
| <input type="checkbox"/> local creeks and streams        | <input type="checkbox"/> a septic tank     |
| <input type="checkbox"/> other _____ (please specify)    | <input type="checkbox"/> Don't know        |
  
- 2) In your opinion, where does most of the waste water from flushed toilets, kitchen sink, and bathtub drainage end up?
 

|  |  |
|--|--|
| <input type="checkbox"/> the city sewage treatment plant | <input type="checkbox"/> outlying farmland |
| <input type="checkbox"/> local creeks and streams        | <input type="checkbox"/> a septic tank     |
| <input type="checkbox"/> other _____ (please specify)    | <input type="checkbox"/> Don't know        |
  
- 3) Which of the following do you think causes pollution of our local creeks? (Check all that apply)
 

|   |   |
|---|---|
| <input type="checkbox"/> Fertilizer                   | <input type="checkbox"/> Pesticides                   |
| <input type="checkbox"/> Cigarette butts              | <input type="checkbox"/> Pet waste                    |
| <input type="checkbox"/> Cleaning products            | <input type="checkbox"/> Automobile fluids            |
| <input type="checkbox"/> Soil                         | <input type="checkbox"/> Lawn clippings (green waste) |
| <input type="checkbox"/> Other _____ (please specify) |   |
  
- 4) Do you consider the weather forecast before applying or having someone apply pesticides and fertilizers to your lawn, garden, or outside plants?
 

|                              |                             |                                     |  |
|------------------------------|-----------------------------|-------------------------------------|--|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know | <input type="checkbox"/> Doesn't apply |
|------------------------------|-----------------------------|-------------------------------------|--|
  
- 5) Where do you wash your motor vehicle, lawn mower, camper, and/or RV most of the time?
 

|   |  |
|---|--|
| <input type="checkbox"/> On the driveway              | <input type="checkbox"/> On the street       |
| <input type="checkbox"/> On the lawn                  | <input type="checkbox"/> Commercial car wash |
| <input type="checkbox"/> Other _____ (please specify) | <input type="checkbox"/> Doesn't apply       |
  
- 6) Which of the following messages about keeping our gutters and local creeks free from pollution (such as litter, auto fluids, pet waste, fertilizer, and/or pesticides) did you hear or see recently? (Check all that apply)
 

|   |   |
|---|---|
| <input type="checkbox"/> Television commercial  | <input type="checkbox"/> Radio commercial   |
| <input type="checkbox"/> Daily newspaper ads  | <input type="checkbox"/> Weekly newspapers ads  |
| <input type="checkbox"/> Posters  | <input type="checkbox"/> Murals (downtown Chico)  |
| <input type="checkbox"/> Booth at a public event  | <input type="checkbox"/> Information from my child's classroom  |
| <input type="checkbox"/> Chico Clean Creeks Calendar  | <input type="checkbox"/> Internet site ( <a href="http://www.keepchicoclean.org">www.keepchicoclean.org</a> ) |
| <input type="checkbox"/> Storm drain markers with messages "No Dumping, Drains to Creek?" <input type="checkbox"/> Other _____ (please specify) |   |
  
- 7) Which of the following activities have you changed as a result of local messages about protecting our creeks and streams from water pollution within the past year? (Check all that apply)
 

|  |   |
|--|---|
| <b>Now I do:</b><br><input type="checkbox"/> Wash my vehicle on lawn or car wash.<br><input type="checkbox"/> Recycle used automobile fluid.<br><input type="checkbox"/> Prevent runoff from the lawn.<br><input type="checkbox"/> Compost or mulch lawn-clippings.<br><input type="checkbox"/> Dispose of pet waste in the trashcan.<br><input type="checkbox"/> Use green cleaning products.<br><input type="checkbox"/> Use green gardening methods.<br><input type="checkbox"/> Other _____ (please specify) | <b>Now I do not:</b><br><input type="checkbox"/> Dump anything into gutters or drains.<br><input type="checkbox"/> Dump anything into creeks or streams.<br><input type="checkbox"/> Over-fertilize my lawn.<br><input type="checkbox"/> Apply fertilizer or pesticides when rain is predicted.<br><input type="checkbox"/> Over-water my lawn.<br><input type="checkbox"/> Litter (e.g. cigarette butts and/or trash)<br><input type="checkbox"/> Other _____ (please specify) |
|--|---|
  
- 8) What is your zip code? \_\_\_\_\_
 

☐ I did not hear or see any messages  
☐ I did not make any changes

## 2010 CONVENIENCE SURVEY

Thank you for participating in the City of Chico's survey on water pollution in our area. You are the solution to pollution!

1) In your opinion, where does most of the runoff water from your yard, gutter, street, or road end up?

- |  |  |
|--|--|
| <input type="checkbox"/> the city sewage treatment plant | <input type="checkbox"/> outlying farmland |
| <input type="checkbox"/> local creeks and streams        | <input type="checkbox"/> a septic tank     |
| <input type="checkbox"/> other _____ (please specify)    | <input type="checkbox"/> Don't know        |

2) In your opinion, where does most of the waste water from flushed toilets, kitchen sink, and bathtub drainage end up?

- |  |  |
|--|--|
| <input type="checkbox"/> the city sewage treatment plant | <input type="checkbox"/> outlying farmland |
| <input type="checkbox"/> local creeks and streams        | <input type="checkbox"/> a septic tank     |
| <input type="checkbox"/> other _____ (please specify)    | <input type="checkbox"/> Don't know        |

3) Which of the following do you think causes pollution of our local creeks? (Check all that apply)

- |   |   |
|---|---|
| <input type="checkbox"/> Fertilizer                   | <input type="checkbox"/> Pesticides                   |
| <input type="checkbox"/> Cigarette butts              | <input type="checkbox"/> Pet waste                    |
| <input type="checkbox"/> Cleaning products            | <input type="checkbox"/> Automobile fluids            |
| <input type="checkbox"/> Soil                         | <input type="checkbox"/> Lawn clippings (green waste) |
| <input type="checkbox"/> Other _____ (please specify) |   |

4) Do you consider the weather forecast before applying or having someone apply pesticides and fertilizers to your lawn, garden, or outside plants?

- |                              |                             |                                     |  |
|------------------------------|-----------------------------|-------------------------------------|--|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Don't know | <input type="checkbox"/> Doesn't apply |
|------------------------------|-----------------------------|-------------------------------------|--|

5) Where do you wash your motor vehicle, lawn mower, camper, and/or RV most of the time?

- |   |  |
|---|--|
| <input type="checkbox"/> On the driveway              | <input type="checkbox"/> On the street       |
| <input type="checkbox"/> On the lawn                  | <input type="checkbox"/> Commercial car wash |
| <input type="checkbox"/> Other _____ (please specify) | <input type="checkbox"/> Doesn't apply       |

6) Which of the following messages about keeping our gutters and local creeks free from pollution (such as litter, auto fluids, pet waste, fertilizer, and/or pesticides) did you hear or see recently? (Check all that apply)

- |   |   |
|---|---|
| <input type="checkbox"/> Television commercial  | <input type="checkbox"/> Radio commercial   |
| <input type="checkbox"/> Daily newspaper ads  | <input type="checkbox"/> Weekly newspapers ads  |
| <input type="checkbox"/> Posters  | <input type="checkbox"/> Murals (downtown Chico)  |
| <input type="checkbox"/> Booth at a public event  | <input type="checkbox"/> Information from my child's classroom  |
| <input type="checkbox"/> Chico Clean Creeks Calendar                                      | <input type="checkbox"/> Internet site ( <a href="http://www.keepchicoclean.org">www.keepchicoclean.org</a> ) |
| <input type="checkbox"/> Storm drain markers with messages "No Dumping, Drains to Creek?" | <input type="checkbox"/> Environmentally-friendly car wash fundraiser   |
| <input type="checkbox"/> Other _____ (please specify)                                     |   |

7) Which of the following activities have you changed as a result of local messages about protecting our creeks and streams from water pollution within the past year? (Check all that apply)

**Now I do:**

- ☐ Wash my vehicle on lawn or car wash.
- ☐ Recycle used automobile fluid.
- ☐ Prevent runoff from the lawn.
- ☐ Compost or mulch lawn-clippings.
- ☐ Dispose of pet waste in the trashcan.
- ☐ Use green cleaning products.
- ☐ Use green gardening methods.
- ☐ Other \_\_\_\_\_ (please specify)

**Now I do not:**

- ☐ Dump anything into gutters or drains.
- ☐ Dump anything into creeks or streams.
- ☐ Over-fertilize my lawn.
- ☐ Apply fertilizer or pesticides when rain is predicted.
- ☐ Over-water my lawn.
- ☐ Litter (e.g. cigarette butts and/or trash)
- ☐ Other \_\_\_\_\_ (please specify)

- ☐ I did not hear or see any messages
- ☐ I did not make any changes

8) What is your zip code? \_\_\_\_\_

2011 Convenience Survey-Paper

Thank you for participating in the City of Chico's survey on water pollution in our area. *You* are the solution to pollution!

1) In your opinion, where does most of the **runoff water** from your yard, gutter, street, or road end up?

- |  |  |
|--|--|
| <input type="checkbox"/> the city sewage treatment plant | <input type="checkbox"/> outlying farmland |
| <input type="checkbox"/> local creeks and streams        | <input type="checkbox"/> a septic tank     |
| <input type="checkbox"/> other _____ (please specify)    | <input type="checkbox"/> Don't know        |

2) In your opinion, where does most of the **waste water** from flushed toilets, kitchen sink, and bathtub drainage end up?

- |  |  |
|--|--|
| <input type="checkbox"/> the city sewage treatment plant | <input type="checkbox"/> outlying farmland |
| <input type="checkbox"/> local creeks and streams        | <input type="checkbox"/> a septic tank     |
| <input type="checkbox"/> other _____ (please specify)    | <input type="checkbox"/> Don't know        |

3) Which of the following do you think causes pollution of our local creeks? (Check all that apply)

- |   |   |
|---|---|
| <input type="checkbox"/> Fertilizer                   | <input type="checkbox"/> Pesticides                   |
| <input type="checkbox"/> Cigarette butts              | <input type="checkbox"/> Pet waste                    |
| <input type="checkbox"/> Cleaning products            | <input type="checkbox"/> Automobile fluids            |
| <input type="checkbox"/> Soil                         | <input type="checkbox"/> Lawn clippings (green waste) |
| <input type="checkbox"/> Other _____ (please specify) |   |

4) Do you consider the weather forecast before applying or having someone apply pesticides and fertilizers to your lawn, garden, or outside plants?

- ☐ Yes      ☐ No      ☐ Don't know      ☐ Doesn't apply

5) Where do you wash your motor vehicle, lawn mower, camper, and/or RV **most of the time**?

- |   |  |
|---|--|
| <input type="checkbox"/> On the driveway              | <input type="checkbox"/> On the street       |
| <input type="checkbox"/> On the lawn                  | <input type="checkbox"/> Commercial car wash |
| <input type="checkbox"/> Other _____ (please specify) | <input type="checkbox"/> Doesn't apply       |

6) Which of the following messages about keeping our gutters and local creeks free from pollution (such as litter, auto fluids, pet waste, fertilizer, and/or pesticides) did you hear or see recently? (Check all that apply)

- |   |  |
|---|--|
| <input type="checkbox"/> Television commercial  | <input type="checkbox"/> Radio commercial                                |
| <input type="checkbox"/> Daily newspaper ads  | <input type="checkbox"/> Weekly newspapers ads                           |
| <input type="checkbox"/> Posters  | <input type="checkbox"/> Murals (downtown Chico)                         |
| <input type="checkbox"/> Booth at a public event<br>child's classroom                     | <input type="checkbox"/> Information from my                             |
| <input type="checkbox"/> Chico Clean Creeks Calendar<br>(www.keepchicoclean.org)          | <input type="checkbox"/> Internet site                                   |
| <input type="checkbox"/> Storm drain markers with messages "No Dumping, Drains to Creek?" | <input type="checkbox"/> Environmentally-friendly<br>car wash fundraiser |
| <input type="checkbox"/> Stanky the Butt (In person and/or on Facebook)                   | <input type="checkbox"/> Other _____<br>(please specify)                 |

7) Which of the following activities have you changed as a result of local messages about protecting our creeks and streams from water pollution within the past year? (Check all that apply)

Now I do:

- ☐ Wash my vehicle on lawn or car wash.
- ☐ Recycle used automobile fluid.
- ☐ Prevent runoff from the lawn.
- ☐ Compost or mulch lawn-clippings.
- ☐ Dispose of pet waste in the trashcan.
- ☐ Use *green* cleaning products.
- ☐ Use *green* gardening methods.
- ☐ Volunteer at Eco-friendly car wash fundraisers.
- ☐ Volunteer to protect water quality.\_\_\_\_ (please specify)
- ☐ Other \_\_\_\_\_(please specify)

Now I do not:

- ☐ Dump anything into gutters or drains.
- ☐ Dump anything into creeks or streams.
- ☐ Over-fertilize my lawn.
- ☐ Apply fertilizer or pesticides when rain is predicted.
- ☐ Over-water my lawn.
- ☐ Litter (e.g. cigarette butts and/or trash)
- ☐ Other \_\_\_\_\_ (please specify)

- ☐ I did not hear or see any messages
- ☐ I did not make any changes

8) What is your zip code? \_\_\_\_\_ **Online Survey Versions 1 and 3 (Note v1 and v3 are identical with the exception of q6)**

## City of Chico's Survey on Water Quality Protection

### 1. Water Runoff

**\*1. In your opinion, where does most of the runoff water from your yard, gutter, street, or road end up?**

- ☐ City sewage treatment plant
- ☐ Local creeks and streams
- ☐ Outlying farmland
- ☐ Septic tank
- ☐ Don't know
- ☐ Other (please specify)



## City of Chico's Survey on Water Quality Protection

### 2. Waste Water

**\*2. In your opinion, where does most of the waste water from flushed toilets, kitchen sink, and bathtub drainage end up?**

- ☐ City sewage treatment plant
- ☐ Local creeks and streams
- ☐ Outlying farmland
- ☐ Septic tank
- ☐ Don't know
- ☐ Other (please specify)

[Prev](#)[Next](#)

## City of Chico's Survey on Water Quality Protection

### 3. Pollution Causes

**\*3. Which of the following do you think causes pollution of our local creeks?**

- |   |   |
|---|---|
| <input type="checkbox"/> Fertilizer             | <input type="checkbox"/> Pesticides                   |
| <input type="checkbox"/> Cigarette butts        | <input type="checkbox"/> Pet waste                    |
| <input type="checkbox"/> Cleaning products      | <input type="checkbox"/> Automobile fluids            |
| <input type="checkbox"/> Soil                   | <input type="checkbox"/> Lawn clippings (green waste) |
| <input type="checkbox"/> Other (please specify) |   |

[Prev](#)[Next](#)



## City of Chico's Survey on Water Quality Protection

### 4. Weather

**\*4. Do you consider the weather forecast before applying or having someone apply pesticides and fertilizers to your lawn, garden, or outside plants?**

- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ Doesn't apply

Prev

Next

## City of Chico's Survey on Water Quality Protection

### 5. Washing Location

**\*5. Where do you wash your motor vehicle, lawn mower, camper, and/or RV most of the time?**

- ☐ On the driveway
- ☐ On the lawn
- ☐ On the street
- ☐ Commercial car wash
- ☐ Doesn't apply
- ☐ Other (please specify)

Prev

Next

### Question 6 – Version 1

## City of Chico's Survey on Water Quality Protection

[Exit this survey](#)

### 6. Our Messages

**\*6. Which of the following messages about keeping our gutters and local creeks free from pollution (such as litter, auto fluids, pet waste, fertilizer, and/or pesticides) did you hear or see recently?**

- |  |   |
|--|---|
| <input type="checkbox"/> Television commercial   | <input type="checkbox"/> Radio commercial   |
| <input type="checkbox"/> Daily newspaper ads   | <input type="checkbox"/> Weekly newspapers ads  |
| <input type="checkbox"/> Posters   | <input type="checkbox"/> Murals (downtown Chico)  |
| <input type="checkbox"/> Booth at a public event   | <input type="checkbox"/> Information from my child's classroom  |
| <input type="checkbox"/> Chico Clean Creeks Calendar                                     | <input type="checkbox"/> Website ( <a href="http://www.keepchicoclean.org">www.keepchicoclean.org</a> ) |
| <input type="checkbox"/> Storm drain markers with messages "No Dumping, Drains to Creek" | <input type="checkbox"/> Environmentally-friendly car wash fundraiser                                   |
| <input type="checkbox"/> Other (please specify)  |   |

Prev

Next

Question 6 – Version 3

City of Chico's Survey on Water Quality Protection v3

[Exit this survey](#)

6. Our Messages

**\*6. Which of the following messages about keeping our gutters and local creeks free from pollution (such as litter, auto fluids, pet waste, fertilizer, and/or pesticides) did you hear or see recently?**

- |  |   |
|--|---|
| <input type="checkbox"/> Television commercial   | <input type="checkbox"/> Radio commercial   |
| <input type="checkbox"/> Daily newspaper ads   | <input type="checkbox"/> Weekly newspapers ads  |
| <input type="checkbox"/> Posters   | <input type="checkbox"/> Murals (downtown Chico)  |
| <input type="checkbox"/> Booth at a public event   | <input type="checkbox"/> Information from my child's classroom  |
| <input type="checkbox"/> Chico Clean Creeks Calendar                                     | <input type="checkbox"/> Website ( <a href="http://www.keepchicoclean.org">www.keepchicoclean.org</a> ) |
| <input type="checkbox"/> Storm drain markers with messages "No Dumping, Drains to Creek" | <input type="checkbox"/> Environmentally-friendly car wash fundraiser                                   |
| <input type="checkbox"/> Stanky the Butt   | <input type="checkbox"/> No answer  |
| <input type="checkbox"/> Other (please specify)  |   |

[Prev](#)

[Next](#)

City of Chico's Survey on Water Quality Protection

[Exit this survey](#)

7. Your Actions

**\*7. Which activities have you changed as a result of local messages about protecting our creeks from water pollution within the past year?**

- ☐ I have made one or more changes (If checked, you can specify which changes on the next page)
- ☐ I did not hear or see any messages
- ☐ I did not make any changes

[Prev](#)

[Next](#)

## 8. What You've Changed

## \*8. Which of the following activities have you changed?

- ☐ I wash my vehicle on lawn or car wash
- ☐ I recycle used automobile fluid
- ☐ I prevent runoff from the lawn
- ☐ I compost or mulch lawn-clippings
- ☐ I dispose of pet waste in the trashcan
- ☐ I use green cleaning products
- ☐ I use green gardening methods
- ☐ I volunteer at eco-friendly car wash fundraisers
- ☐ I NEVER dump anything into gutters or drains
- ☐ I NEVER dump anything into creeks or streams
- ☐ I NEVER over-fertilize my lawn
- ☐ I NEVER apply fertilizer or pesticides when rain is predicted
- ☐ I NEVER over-water my lawn
- ☐ I NEVER litter (e.g. cigarette butts and/or trash)
- ☐ Other (please specify)

[Prev](#)[Next](#)

## City of Chico's Survey on Water Quality Protection

## 9. Zip Code

## 9. What is your zip code?

- |  |  |
|--|--|
| <input type="radio"/> Chico 95926            | <input type="radio"/> Forest Ranch 95942 |
| <input type="radio"/> Chico 95927            | <input type="radio"/> Oroville 95915     |
| <input type="radio"/> Chico 95928            | <input type="radio"/> Oroville 95940     |
| <input type="radio"/> Chico 95929            | <input type="radio"/> Oroville 95965     |
| <input type="radio"/> Chico 95973            | <input type="radio"/> Oroville 95966     |
| <input type="radio"/> Chico 95976            | <input type="radio"/> Oroville 95980     |
| <input type="radio"/> Durham 95938           | <input type="radio"/> Paradise 95967     |
| <input type="radio"/> Durham 95958           | <input type="radio"/> Paradise 95969     |
| <input type="radio"/> Other (please specify) |  |

[Prev](#)[Next](#)

## APPENDIX C

### 2008, 2009, 2010 & 2011 Chico Clean Creeks Convenience Surveys: Complete Codebook for Merged Data

By

Jennifer Oman-Payne and Diane E. Schmidt

6-19-2011

2008 n=171

2009 n=200

2010 n=211

2011 n=204 (32 of which were on-line surveys)

**Data Notes:** The major innovation with the 2011 survey year is the introduction of two survey instruments—an on-line version (paperless as an environmentally responsible survey approach) administered through *Survey Monkey*, and a paper version available for people with low vision or vision disabilities. Respondents accessed *Survey Monkey* through laptop computers available at the booth. Ms Oman had prepared surveys on paper in the 11x17 format for those who requested paper access due to low vision. Ms Oman was not able to collect as many entries as last year from different locations because of unforeseen Internet problems the first day of the Silver Dollar Fair, and even more so, because of the weather at the Home & Garden Show. Severe weather and residual internet connection problems limited the use of the *Survey Monkey* versions.

There are three surveys in *Survey Monkey*.—The first survey does not include Stanky the Butt (only version 2 and 3 have Stanky listed as a message that was seen or heard). Stanky the Butt is a new public event and is also accessible through *Facebook*. The first survey was created for the H&G Show, and only a few responses were collected due to wind storms. The second survey was created for the Thursday Night Market and the Silver Dollar Fair, however, there was a glitch with it and it would not cycle back to the beginning for the next user. Version 2 and 3 are identical. Repeated attempts to repair version 2 while staffing the public booth at the Thursday Night Market were unsuccessful. To continue collecting data, the *Survey Monkey* on-line survey was abandoned and the 11x17 survey paper copy was administered to respondents. All the data collected in the paper copy were entered by hand by Ms Oman and her staff. (See Appendixes: Paper Version, On-line Version 1, and On-line Version 3.

In addition to some of the glitches in the software used to administer the survey, there were several programming errors that may have influenced the 2011 responses. In previous years, the survey instrument included instructions of “check all that apply on q3, q6, and q8 and the option for *Other* in q8. These instructions were accidentally omitted in the on-line versions. In addition, the programmer changed the question order for responses *I did not hear or see any messages* and *I did not make any changes*. In previous versions of the survey, 2009-2010, respondents were given these choices only after they were asked to respond to the question *Which activities have you changed as a result of local messages about protecting our creeks from water pollution within the past year?* The programmer created a new response set including *I have made one or more changes –If checked you can specify which changes on the next page*. The programmer created a new question, q8, *Which of the following activities have you changed?* Finally, in previous versions of the survey, respondents were prompted with *Now I do* and *Now I do not*. This was changed in 2011 to *I* statements such as *I wash my vehicle on lawn or car wash* and *I NEVER litter*. This was done due to programming constraints using *Survey Monkey*. Finally, the programmer provided zip code response categories; in early versions respondents just wrote their zip code into the survey.

Fortunately, only 32 surveys were administered without the instructions to check all that apply and the change in question order. Booth staff recall being ask by respondents if they can check more than one response; it is reasonable to expect very little impact on the data results. The question order and format changes were more problematic for time series analysis. If anything, the 2011 data may under-represent the strength of the EOP program due to these changes.

**(Greeting): Thank you for participating in the City of Chico's survey on water pollution in our area.  
You are the solution to pollution!**

Revised Case Id (unique case number for merged data)

Case Id (original to 2008 and 2009)

Survey (either 2008 or 2009 or 2010 or 2011)

q1. In your opinion, where does most of the **runoff water** from your yard, gutter, street, or road end up?

1 € the city sewage treatment plant

2 € local creeks and streams

3 € outlying farmland

4 € a septic tank

77 € other \_\_\_\_\_

88 € Don't know

99 € No answer (for analysis, this was merged with Didn't Know)

q1-77 € (text specified) Type exactly as written

- all of the above
- California park lake
- city sewage & local creeks and streams
- city sewage & local creeks and streams, outlying farmland and septic tank
- depends on the town
- drains into unpaved area along curb
- evaporation
- ground
- in our yard
- irrigation ditch
- local creeks & essentially the ocean
- local creeks & lindo channel
- local creeks & outlying farmland
- no runoff
- oceans
- plant, streams, farmland
- river
- Sacramento river
- soak in
- underground (lives in rural area and goes back into groundwater)
- water table
- we collect
- yard clean
- (blank)
- local creeks/streams and ocean
- sewage plant and local creeks/stream
- 1 and 2
- 1 and 88
- 2 and 1 88
- 2 and the Ocean
- 2 and the Ocean eventually
- 2 and water table
- Bike path
- Ditch
- Gutter

- Man made pond
- MY LAND
- Ocean
- SEWAGE
- Ultimately it goes to the ocean, is evaporated, and then falls upon the earth again... the hydrologic cycle

q2. In your opinion, where does most of the **waste water** from flushed toilets, kitchen sink, and bathtub drainage end up?

- 1 € the city sewage treatment plant
- 2 € local creeks and streams
- 3 € outlying farmland
- 4 € a septic tank
- 77 € other \_\_\_\_\_ (please specify)
- 88 € Don't know (for analysis, this was merged with Didn't Know)
- 99 € No answer

q2-77 € (text specified) Type exactly as written

- all of the above
- city
- city sewage & local creeks and streams and outlying farmland
- city sewage & local creeks and streams and septic tank
- city sewage & local creeks and streams, outlying farmland and septic tank
- city sewage & septic tank
- creeks and septic
- grey water
- local creeks & septic tank
- local creeks septic tank
- ocean
- plant and septic
- plant and streams
- Sacramento River
- septic tank
- Sewage and Septic
- 1 and 3
- 1 and 4
- 1 and a 4
- 1 and local creeks & streams
- 1, 2, 3, a 4
- 2 and 4
- 2 and the Ocean
- 4 and Other
- Grey water and septic
- Ocean
- See answer to # 1 ... the hydrologic cycle ;-)

q3. Which of the following do you think causes pollution of our local creeks? (Check all that apply—**2011 on papers copies only**) (Each recoded to 0=not checked, 1=checked except q3-77 which is the specified message).

- q3-1 € Fertilizer
- q3-2 € Pesticides
- q3-3 € Cigarette butts
- q3-4 € Pet waste
- q3-5 € Cleaning products
- q3-6 € Automobile fluids



q3-7 € Soil

q3-8 € Lawn clippings (green waste)

q3-77 € Other \_\_\_\_\_ (please specify)

q3-77 (text specified) Type exactly as written

- all the above
- air pollutants
- all
- animal farmland runoff
- anything thrown on the ground
- beer bottles/trash
- boat
- cans / bottles
- cars
- everything
- garbage
- grey water
- Herpicides
- hospital waste
- human waste
- junk
- leaky septic
- leaves
- liter
- litter
- meth lab waste
- most of the above
- motor oil
- no text
- oil
- paint
- parties
- people
- pollution
- rain and waste runoff
- smog
- soap
- spitting
- toxic waste
- trash
- urine
- walmart
- yard waste
- bottle cans
- cans/trash
- Car washing cleaning products
- Food
- GARBAGE
- garbage cans
- Homeless living in creek
- Human junk
- Illegal dumping
- in excessive levels all of these can be pollutants... in Chico, mmm, I think chemical fluids like pesticides, auto fluids, and fertilizer in the outer edges of town too.
- Litter
- Oral contraceptives and Rx in general
- People waste

- Pool Waste
- Poop

q3-99 ∈ No answer

q3sum. Which of the following do you think causes pollution of our local creeks? (Summary of all checked in q3 from q3-1 to q3-77). 0-9 causes.

q3sum recode: index of causes identified in q3sum.

- 0) ∈ No causes identified
- 1) ∈ Few causes identified (1-3)
- 2) ∈ Many causes identified (4-6)
- 3) ∈ Most causes identified (7-9)

q4. Do you consider the weather forecast before applying or having someone apply pesticides and fertilizers to your lawn, garden, or outside plants?

- 0 ∈ No
- 1 ∈ Yes
- 66 ∈ Not applicable
- 77 ∈ Other \_\_\_\_\_ (please specify) (**not asked in 2010-2011**)
- 88 ∈ Don't know
- 99 ∈ No answer

q4-77 ∈ (text specified) Type exactly as written (**not asked in 2010-2011**)

- don't use those products
- no chemicals
- sun burning grass
- use no chemicals

**2008** q5. Where do you wash your motor vehicle, lawn mower, camper, and/or RV? (Check all that apply). (Each recoded to 0=not checked, 1=checked except q5-77 which is the specified place).

- q5-1) ∈ On the driveway
- q5-2) ∈ On the street
- q5-3) ∈ On the lawn
- q5-4) ∈ Commercial car wash
- q5-5) ∈ Don't have a motor vehicle, lawn mower, camper, or RV (**not asked in 2010**)
- q5-77) ∈ Other \_\_\_\_\_ (please specify)
- q5-77 (text specified)
  - gravel
  - gravel pasture
  - none of the above
  - we don't

q5-88) ∈ Don't know (**not asked in 2010**)

q5-99) ∈ No answer

**2008** q5. Recoded (**not done in 2009 2010—question format changed from check all that apply to check one**)

2008 q5dwyst. Recode of q5-1 and q5-2. Wash on driveway or in the street. 0=not checked, 1=checked.

2008 q5lwcw. Recode of q5-3 and q-4. Wash on lawn or at car wash. 0=not checked, 1=checked.

2008 q5sum. Summary index of q5dwyst and q5lwcw.

- 1) € On the driveway or the street
- 2) € On the lawn or at car wash
- 3) € On driveway or street and lawn or car wash

**2009-2011** q5. Where do you wash your motor vehicle, lawn mower, camper, and/or RV *most of the time*?

q5-1) € On the driveway

q5-2) € On the street

q5-3) € On the lawn

q5-4) € Commercial Car Wash

q5-77) € Other \_\_\_\_\_ (please specify)

- Driveway and lawn
- Street and lawn
- all
- concrete to gravel
- dirt
- don't wash it
- driveway & commercial car wash
- driveway & on the street and commercial car wash.
- driveway and doesn't apply
- driveway commercial car wash
- driveway in country
- driveway on the lawn
- gravel
- gravel driveway
- in the field
- lawn & commercial car wash
- parking lot
- pervious area
- sink
- street & commercial car wash
- U-wash
- Dirt area
- driveway and car wash
- Farmland
- Gas station, as they offer free car wash
- gravel
- Gravel driveway
- ON DIRT ROAD
- on the driveway and carwash
- On the driveway and Commercial car wash
- On the driveway and on the lawn
- On the driveway and On the street and On the lawn
- On the driveway runs off into grassfield and Commercial Car wash
- On the gravel driveway and on the lawn
- on the lawn other and gravel yard
- On the street or commercial car wash
- rock driveway
- why do you need to wash your car??? Eventually it will rain again and knock the dust off!!!

q5-66) € Doesn't Apply

q5-88) € Don't know (**not asked in 2010-2011**)

q5-99) € No answer

q5-555) € Some combination, multiple answers chosen (**revised 2009, 2010, 2011 to code as 77**)

2008 (q10) (2009-2011) q6. Which of the following messages about keeping our gutters and local creeks free from pollution (such as litter, auto fluids, pet waste, fertilizer, and/or pesticides) did you hear or see recently? (Check all that apply—**2011 on papers copies only**)

(Each recoded to 0=not checked, 1=checked except q6-77 which is the specified message).

2008 q10 & 2009-2011 q6-1 ∈ Television commercial

2008 q10 & 2009-2011 q6-2 ∈ Radio commercial

2008 q10 & 2009-2011 q6-3 ∈ Daily Newspaper ads

2008 q10 & 2009-2011 q6-4 ∈ Weekly Newspapers ads

2008 q10 & 2009-2011 q6-5) ∈ Posters

2008 q10 & 2009-2011 q6-6 ∈ Murals (downtown Chico)

2008 q10 & 2009-2011 q6-7 ∈ Booth at a public event

2008 q10 & 2009-2011 q6-8 ∈ Information from my child's classroom

2008 q10 & 2009-2011 q6-9 ∈ Chico Clean Creeks Calendar

2008 q11 & 2009--2011 q6-10 ∈ Storm drain markers with messages "No Dumping, Drains to Creek?"\*\*\*

2009-2011 q6-11 ∈ Internet site (www.keepchicoclean.org). (*this was not in the 2008 survey*)

2010-2011 q6-12 ☐ Environmentally-friendly car wash fundraiser). (*this was not in the 2008-2009 survey*)

2010-2011 q6-13 Stanky the Butt (In person and/or on Facebook). (**this is in 2011 survey only**)

2008 q10 & 2009-2011 q6-77 ∈ Other \_\_\_\_\_ (please specify)

2008 q10 & 2009-2011 q6-77 ∈ (text specified) Type exactly as written

- BEC
- bumper sticker
- Chico Clean-up day
- csu chico environmental programs
- csuc
- dog-fite disability group
- drains
- education - BA in Parks and Rec
- educational TV
- Endangered Species Faire
- Fair
- gutters at work
- have not
- kids and creeks
- my favorite consultant
- news
- no text
- none
- none - no one cares
- none of this. No publicity.
- none, needs more media. Definitely out of sight out of mind.
- Occasional newspaper announcement
- plaques
- plaques on curbs
- project wet
- refrigerator magnets
- school
- Scott Itamora
- self-psycho environmentalist tree-hugger dirt worshipper
- sidewalk medallion
- sidewalks
- Silver Dollar Fair

- storm drain markers in parking lots
- storm drain sign
- street symbols
- swpp class
- work
- common sense and environmental education curriculum
- CUSD
- fair
- Glad you put the markers on the streets. Helps to educate. Thanks.
- I haven't seen a message
- Local people
- Messages in other towns
- None

2008 q10 & 2009 q6-88 € Don't know ). (*this was not in the 2010 survey*)

2008 q10 & 2009-2011 q6-99 € No answer

**\*\* The storm drain marker question in 2008 was separate from this list.**

2008 q11. Have you seen any storm drain markers with messages such as “No Dumping, Drains to Creek?”

1) € Yes

0) € No

88) € Don't know

99) € No answer

2008 q10 & 2009-2011 q6sum. Which of the following messages about keeping our gutters and local creeks free from pollution. Summary of all checked in 2008 q10 & 2009-2011 q6 from 2008 q10 & 2009-2011 q6-1 to 2008 q10 & 2009-2011 q6-77). 0-14 messages.

2008 q10 & 2009-2011 q6sum recode: index of messages identified in 2008 q10 & 2009-2011 q6sum.

2008 q10 & 2009-2011 q6-0 € No messages identified

2008 q10 & 2009-2011 q6-1 € Few messages identified (1-3)

2008 q10 & 2009-2011 q6-2 € Many messages identified (4-6)

2008 q10 & 2009-2011 q6-3 € Most messages identified (7-14)

2008 q10 & 2009-2011 q6bd. Recode of 2008 q10 & 2009-2011 q6-1 and 2008 q10 & 2009-2011 q6-2. TV and radio commercials. 0=not checked, 1=checked.

2008 q10 & 2009-2011-2011 q6prnt. Recode of 2008 q10 & 2009-2011 q6-3 and 2008 q10 & 2009-2011 q6-4. Daily and weekly newspaper ads. 0=not checked, 1=checked.

2008 q10 & 2009-2011 q6art. Recode of 2008 q10 & 2009-2011 q6-5 and 2008 q10 & 2009-2011 q6-6. Posters and Murals. 0=not checked, 1=checked.

2008 q10 & 2009-2011 q6pe. Recode of 2008 q10 & 2009-2011 q6-7 through 2008 q10 & 2009-2011 q6-9, 2010-2011 q6-12, 2011 q6-13. Public event, classroom, and calendar. car wash, Stanky the Butt 0=not checked, 1=checked.

Copy 2008 q11 & 2009-2011 q6drn. Copy of recode of 2008 q10 & 2009-2011 q6-10. Storm drain markers. 0=not checked, 1=checked.

Copy 2019-2011 q6-11. Copy of recode of 2019-2011 Internet site. 0=not checked, 1=checked.

EOPsum. Summary of messages identified in 2008 q10 & 2009-2011 q6bd, 2008 q10 & 2009-2011 q6prnt, 2008 q10 & 2009-2011 q6art, 2008 q10 & 2009-2011 q6pe, 2008 q10 & 2009-2011 q6drn & 2019-2011 q6-11.

- 0) € No Messages marked.
- 1) € One type message seen.
- 2) € Two types messages seen.
- 3) € Three types messages seen.
- 4) € Four types messages seen.
- 5) € Five types messages seen.
- 6) € Six types messages seen. (**not available in 2008 and 2009**)

q7. Which of the following activities have you changed as a result of local messages about protecting our creeks and streams from water pollution within the past year? (Check all that apply—**2011 on papers copies only**) (Each recoded to 0=not checked, 1=checked except q7-77 which is the specified message).

**Now I do:**

2008 q13.2 € Wash your vehicle on the lawn, or at a car wash, instead of in the driveway

2009-2011 q7-1 & 2011-on-line q8-1 € Wash my vehicle on lawn or car wash.

2008 q13.3 € Recycle used motor oil or other automobile fluid. &

2009-2011 q7-2 & 2011-on-line q8-2 € Recycle used automobile fluid.

2008 q13.7 € Preventing runoff from the lawn through landscaping design &

2009-2011 q7-3 & 2011-on-line q8-3 € Prevent runoff from the lawn.

2008 q13.8 € Composting or mulching lawn-clippings and other green waste. &

2009-2011 q7-4 & 2011-on-line q8-4 € Compost or mulch lawn-clippings.

2008 q13.9 € Picking up after your pet and disposing of the waste in the trashcan. &

2009-2011 q7-5 & 2011-on-line q8-5 € Dispose of pet waste in the trashcan.

2008 q13.11 € Use environmentally-friendly cleaning products. &

2009-2011 q7-6 & 2011-on-line q8-6 € Use *green* cleaning products.

2008 q13.12 € Use environmentally-friendly gardening methods.&

2009-2011 q7-7 & 2011-on-line q8-7 € Use *green* gardening methods.

**2011 q7-14 & 2011-on-line q8-14 € Volunteer at Eco-car wash fundraisers**

**2011 q7-15 & 2011-on-line q8-15 € Volunteer to protect water quality \_\_\_\_\_ (please specify) (this question not coded in paper or on-line surveys).**

2009-2011 q7a-77 € Other \_\_\_\_\_(please specify)

2009-2011 q7a-77 € (text specified) Type exactly as written (*Not coded in 2011 due to conversion of the paper survey to Survey Monkey Version 3*)

- all
- already do
- chico state guideline for proper disposal of cleaning materials
- Don't use much water and no cleaning agents.
- I'm already an environmental consultant so you're preaching to the choir.
- I've always recycled.
- leave lawn clippings on lawn
- never did
- Not very much info to the public.
- pick up trash in the park
- recycle everything
- reuse disposables
- We already do all these things
- we can no longer walk in lindo channel because of homeless campers.

2008 q13-77 € (text specified) Type exactly as written

- (Note - the word "local" was crossed out



- didn't have to care about environment
- don't get info in Paradise - Outreach would be great. We are all on septic
- live in trailer park
- n/a
- no text
- none
- none didn't do already
- use organic
- using less energy
- We already do this

**Now I do not:**

2008 q13.1 ∈ Never dumping anything into gutters or storm drains &

2009-2011 q7-8 & 2011-on-line q8-8 ∈ Dump anything into gutters or drains.

2009-2011 q7-9 & 2011-on-line q8-9 ∈ Dump anything into creeks or streams. (*this was not in the 2008 survey*)

2008 q13. 4 ∈ Not over-fertilizing your lawn.&

2009-2011 q7-10 & 2011-on-line q8-10 ∈ Over-fertilize my lawn.

2008 q13.5 ∈ Never applying fertilizers or pesticides when rain is predicted.&

2009-2011 q7-11 & 2011-on-line q8-11 ∈ Apply fertilizer or pesticides when rain is predicted.

2008 q13.6 ∈ Not over-watering your lawn. &

2009-2011 q7-12 & 2011-on-line q8-12 ∈ Over-water my lawn.

2008 q13. 10 ∈ Never littering (e.g. cigarette butts and/or general trash)&

2009-2011 q7-13 & 2011-on-line q8-13 ∈ Litter (e.g. cigarette butts and/or trash)

2009-2011 q7b-77 ∈ Other \_\_\_\_\_ (please specify) **2011-data entry miscode**—entered as q8.77

- already do
- does not apply
- never
- never did this stuff in the first place
- never did, yuck!
- never have
- no text
- recycle plastic
- take stuff to dump and hazardous waste recycling
- waste water

2009-2010 q7b-77 ∈ (text specified) Type exactly as written --**2011-data entry miscode**—entered as q8.77

Other

- never
- never did, yuck!
- never have
- take stuff to dump and hazardous waste recycling

2008 q13.99 & 2009-2011 q7-99) ∈ No answer

2009-2010 q7a-0) ∈ I did not hear or see any messages (*this was not in the 2008 survey*) (this was invalid.

Few respondents marked this correctly, Several checked this box but then marked at least one of the items in the list above.) **2011-data entry miscode**. Invalid data here.

2009-2010 q7b-0) ∈ I did not make any changes **2011-data entry miscode**. Invalid data here

2008 q12. Have you changed any of your household, yard, or automobile care activities within the past year as a result of any message about local water pollution?

1) ∈ Yes

0) ∈ No

88) € Don't know

99) € No answer

2008 q12 & 2009-2011 q7b-0: Recoded but not used due to question wording differences.

0)= No change

1)= Change

2008 q13 & 2009-2011 q7sum. Which of the following activities have you changed as a result of local messages about protecting our creeks and streams from water pollution within the past year? (Summary of all checked in q7 from 2008 q13. & 2009-2011 q7-1 to 2008 q13. & 2009-2011 q7-77, excluding q7-13 which was not in the 2008 or 2009 survey. 0-14 changes. q7-77 was excluded due to problems; many who answered this also answered they changed, which conflicts.

2008 q13 & 2009-2011 q7 Now I do.

1) € Yes

0) € No

2008 q13 & 2009-2011 q7 Now I don't.

1) € Yes

0) € No

2008 q13 & 2009-2011 q7sum recode: index of changes identified in 2008 q13 & 2009-2011 q7sum.

0) € No changes identified

1) € Few changes identified (1-3)

2) € Many changes identified (4-7)

3) € Most changes identified (8-14)

**2008 q13 & 2009-2011 q7Change: Recode for 2008 q13 & 2009-2011 q7sum.**

**0) € No changes identified**

**1) € Changes identified**

2008 q14 & 2009-2011 q8. What is your zip code? \_\_\_\_\_

2008 q14 & 2009-2010 q8, 2011 q9-recode. Recoded zip code.

1) € Chico (95926, 95927, 95928, 95929, 95973)

2) € Paradise (95967, 95969)

3) € Oroville (95966)

4) € Other places

**No Answer**

## 2010-2011 Populations

### 2010 Populations

Chico State Freshman -  
Home & Garden Show  
Thurs Night Mkt  
Silver Dollar Fair

### 2011 Populations

Silver Dollar Fair - (taken on paper, entered into *Survey Monkey*) 176-177 (*Survey Monkey* on-line)  
Thurs Night Mkt (*Survey Monkey* on-line)  
Home & Garden Show (*Survey Monkey* on-line)

**SPECIAL NOTE: THE FOLLOWING IS THE ON-LINE VERSION OF THE QUESTIONS—THESE WERE CODED THE SAME AS THE 2011 PAPER VERSION AND AFFECTS ONLY 32 RESPONDENT ANSWERS IN 2011.**

**2011 q7 \*\*\*\*\* Combined not hear/make chg 2011-data entry miscode. Invalid data here.** In the on-line survey, this question was added by the programmer. In coding the 2011 paper copies into the 2011 on-line version 3, the data entry recoded the data to fit this with the following responses:

- 1=I have made on or more changes (If checked, you can specify which changes on the next page).
- 2=I did not hear or see any messages
- 3=I did not make any changes

### 2011 q8. Which of the following activities have you changed?

2011-on-line q8-1 € I wash my vehicle on lawn or car wash.

2011-on-line q8-2€ I recycle used automobile fluid.

2011-on-line q8-3€ I prevent runoff from the lawn.

2011-on-line q8-4€ I compost or mulch lawn-clippings.

2011-on-line q8-5€ I dispose of pet waste in the trashcan.

2011-on-line q8-6€ I use *green* cleaning products.

2011-on-line q8-7 € I use *green* gardening methods.

### 2011-on-line q8-14 € I volunteer at Eco-car wash fundraisers.

2011-on-line q8-8€ I NEVER dump anything into gutters or drains.

2011-on-line q8-9 € I NEVER dump anything into creeks or streams. (*this was not in the 2008 survey*)

2011-on-line q8-10 € I NEVER over-fertilize my lawn.

2011-on-line q8-11 € I NEVER apply fertilizer or pesticides when rain is predicted.

2011-on-line q8-12 € I NEVER over-water my lawn.

2011-on-line q8-13 € I NEVER litter (e.g. cigarette butts and/or trash)

**2011 q8-77** recoded to 0=not checked, 1=checked

### 2011 q8-77 other

- Dispose of pet waste in septic system
- I never litter
- Now I do not fertilize my lawn with commercial product for the past 7 years.
- Volunteer to protect water quality -pick up trash at fishing habitat
- Waste

### 2011 q9. What is your zip code?

- Chico 95926
- Chico 95927
- Chico 95928
- Chico 95929

- Chico 95973
- Chico 95976
- Durham 95938
- Durham 95958
- Forest Ranch 95942
- Oroville 95915
- Oroville 95940
- Oroville 95965
- Oroville 95966
- Oroville 95980
- Paradise 95967
- Paradise 95969
- No answer
- Other (please specify)