

# Annual Reporting for FY 2011-2012

## Regional Supplement for Training and Outreach

### San Francisco Bay Area Municipal Regional Stormwater Permit



September 2012

**MRP Regional Supplement for Training and Outreach  
Annual Reporting for FY 2011-2012**

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**LIST OF ATTACHMENTS:**

**C.7.b. Advertising Campaign**

Regional Litter Implementation Plan  
*Be the Street* Report  
BASMAA Baseline Evaluation Report

**C.7.c. Media Relations – Use of Free Media**

BASMAA Media Relations Campaign Final Report

**C.9.h.i. Point of Purchase Outreach**

Photos of *Our Water, Our World* booth at trade shows  
Article and ad in trade show magazine  
Photo of Bay Area OSH store managers' orientation training  
Copies of *Our Water, Our World* advertisements

# **MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2011-2012**

## **INTRODUCTION**

This Regional Supplement has been prepared to report on regionally implemented activities complying with portions of the Municipal Regional Stormwater Permit (MRP), issued to 76 municipalities and special districts (Permittees) by the San Francisco Bay Regional Water Quality Control Board (Water Board). The Regional Supplement covers training and outreach activities related to the following MRP provisions:

- Provision C.5.d., Control of Mobile Sources,
- Provision C.7.b., Advertising Campaign,
- Provision C.7.c., Media Relations – Use of Free Media,
- Provision C.7.d., Stormwater Point of Contact, and
- Provision C.9.h.i., Point of Purchase Outreach.

These regionally implemented activities are conducted under the auspices of the Bay Area Stormwater Management Agencies Association (BASMAA), a 501 (c) (3) non-profit organization comprised of the municipal stormwater programs in the San Francisco Bay Area. Most of the 2012 annual reporting requirements of the specific MRP Provisions covered in this Supplement are completely met by BASMAA Regional Project activities, except where otherwise noted herein or by Permittees in their reports. Scopes, budgets and contracting or in-kind project implementation mechanisms for BASMAA Regional Projects follow BASMAA's Operational Policies and Procedures as approved by the BASMAA Board of Directors. MRP Permittees, through their program representatives on the Board of Directors and its committees, collaboratively authorize and participate in BASMAA Regional Projects or Regional Tasks. Depending on the Regional Project or Task, either all BASMAA members or Phase I programs that are subject to the MRP share regional costs.

## **Training**

### **C.5.d. Control of Mobile Sources**

This provision requires Permittees to develop and implement a program to reduce the discharge of pollutants from mobile businesses, including development and implementation of minimum standards and BMPs, and outreach to mobile businesses. BASMAA's long-standing Surface Cleaner Training and Recognition program addresses these aspects of the provision by focusing on the most common type of outdoor cleaning – cleaning of flat surfaces like sidewalks, plazas, parking areas, and buildings. Individual Permittees address the inspection and enforcement aspects of the provision.

Previously, BASMAA, the Regional Water Board, and mobile businesses jointly developed best management practices. The BMPs were packaged and delivered in training materials (e.g., *Pollution from Surface Cleaning* folder), and via workshops and training videos. The folder and the training video have since been translated into Spanish. Cleaners that take the training and a self-quiz are designated by BASMAA as Recognized Surface Cleaners. BASMAA also created and provides marketing materials for use by Recognized Surface Cleaners. Previously, BASMAA converted the delivery mechanism to being online so that mobile businesses would have on-demand access

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to the materials and the training. BASMAA continues to maintain the [Surface Cleaner Training and Recognition](#) program. Cleaners can use the website to get trained and recognized for the first time or renew their training and recognition, as required annually. Recognized cleaners can also download marketing materials from the website. Potential customers, including Permittees can use the site to verify the recognition status of any cleaner, as can municipal inspectors. In FY 10-11, BASMAA and the Permittees scoped and budgeted for a new project to enhance the existing Surface Cleaner Training and Recognition program in the following ways.

1. Expand the existing Surface Cleaner Training and Recognition Program to include two new mobile business categories - automotive washing and carpet cleaning;
2. Utilize existing resources that are available to complete the necessary tasks;
3. Develop marketing materials, training videos and self-test applications for the new categories;
4. Create Spanish tracks of information for each new business type; and
5. Create a web-based application to share information about mobile businesses.

A consultant team with expertise in best management practices and commercial training programs, videography, graphic design, web design, and translation has been selected and the project will be fully implemented in FY 12-13.

### **Public Information and Outreach**

#### **C.7.b. Advertising Campaign**

This provision requires Permittees to participate in or contribute to advertising campaigns on trash/litter in waterways and pesticides with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in target audience. Through the BASMAA Public Information / Participation (PI/P) Committee, Permittees previously decided to take a broader view of some of its regional tasks (e.g., Regional Advertising Campaign, Regional Media Relations, *Our Water, Our World* program) to ensure that work on individual MRP provisions was coordinated and part of an overall strategy.

In FY 10-11, working with SGA, Inc., BASMAA developed broader Regional Strategic Outreach Plans – one for litter and one for pesticides – that include audiences related to the MRP provisions and ways of reaching them regarding trash/litter and pesticides (e.g., advertising, media relations, schools outreach, events). Although the scopes of the strategies are broad, the level of stormwater agency (regional, areawide program, city) implementing each part varies (i.e., each part is not implemented via BASMAA). The strategies are multi-year and also include recommendations for creative, media placement, media relations, partnerships, and evaluation.

In FY 11-12, BASMAA, again working with SGA, Inc., finished developing an Implementation Plan for the litter strategic plan, which provides more detailed tasks and budgets for the multi-year project (see attached Regional Litter Implementation Plan for details). Implementation of the “*Be the Street*” anti-litter Youth Outreach Campaign also began in FY 11-12. *Be the Street* takes a Community Based Social

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Marketing approach to encourage youth to keep their community clean. The intent of the campaign is to make “no-littering” the norm among the target audience (youth between the ages of 14 and 24). The *Be the Street* Campaign is using online social marketing tools to conduct outreach. Activities in FY 11-12 included launching a website, Facebook page, a YouTube channel, and a quarterly e-newsletter. An “anti-littering” video contest was also announced and the winning entry will be promoted on television. (see attached *Be the Street* Report for details).

A pre-campaign survey of the audience was conducted (online and at 15 Bay Area high schools) in March and April 2012 to obtain information on the audiences’ perception on littering. A total of 353 individuals completed the survey. Respondents were selected based on age (14-24 years) and residence (the zip code that they provided was within the BASMAA region). The sample was 60% female, had a mean age of 17 years, and almost all respondents were in high school. Highlights of survey results are provided below (see attached BASMAA Baseline Evaluation Report for details):

- 86% of respondents reported littering at least one item in the past month.
- The items littered by the most respondents in the past month included chewing gum (littered by 52% of respondents in the past month), food waste (41%), and food or beverage-related packaging (40%).
- The items littered by the fewest respondents in the past month were cigarette butts (littered by 7% of respondents in the past month), disposable utensils (14%), and bottle caps (21%).
- Among those who littered an item at least once in the past month, frequent littering varied considerably by trash item: littering items at least once per week ranged from 35% for beverage containers to 43% for chewing gum to 74% for cigarette butts.
- Littering at school was more common relative to other settings: 25%, 10%, and 7% of respondents littered at least sometimes at school, at home, and at work, respectively.
- The vast majority of the sample (91%) indicated that trash/recycling can placement deterred them from littering. Additionally, 71% of respondents stated that feelings of guilt discouraged them from littering.
- 88% of respondents indicated that they picked up trash that was not their own at least once in the past month.
- Respondents rated their likelihood of littering in the next month on a 7-point scale ranging from (1) Very unlikely – (7) Very Likely. The mean score was 2.79 (SD=1.67), meaning that on average, respondents intended not to litter.
- Respondents also rated their likelihood of participating in a number of activities related to the campaign. The activity that most respondents were at least somewhat likely to do was expressing disapproval if s/he saw a friend littering: 69% of respondents reported they were at least somewhat likely to do so.

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Additionally, 62% of respondents were at least somewhat likely to pick up litter that was not their own, and 40% were at least somewhat likely to participate in a litter cleanup day.

### **C.7.c. Media Relations – Use of Free Media**

This provision requires Permittees to participate in or contribute to a media relations campaign, maximize use of free media/media coverage with the objective of significantly increasing the overall awareness of stormwater pollution prevention messages and associated behavior change in target audiences, and to achieve public goals. The Annual Reporting requirement includes providing the details of each media pitch, such as the medium, date, and content of the pitch. BASMAA has conducted a Regional Media Relations project since FY 96-97 that assists Permittees in complying with this type of provision. The FY 11-12 BASMAA Regional Media Relations project made seven pitches (see attached Media Relations Program Report for details):

- Save the Bay/Trash Hot Spots,
- Don't Burn Holiday Gift Paper,
- Rainy Season public service announcements (PSAs),
- Baseline Litter Survey,
- Car Washing PSAs,
- Pools and Spas,
- Pesticides: Exterior Spraying PSAs.

### **C.7.d. Stormwater Point of Contact**

This provision requires Permittees to individually or collectively create and maintain a point of contact, e.g., phone number or website, to provide the public with information on watershed characteristics and stormwater pollution prevention alternatives. The Annual Reporting requirement states that any change in the contact be reported in annual reports subsequent to FY 09-10 annual report. There was no change in FY 11-12 to the point of contact provided by BASMAA. BASMAA assists with this provision by using the regional website: [BayWise.org](http://BayWise.org) to list or link to member programs' lists of points of contact and contact information for the stormwater agencies in the Bay Area.

## **Pesticides Toxicity Control**

### **C.9.h.i. Point of Purchase Outreach**

This provision requires Permittees to:

- Conduct outreach to consumers at the point of purchase;
- Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control; and
- Participate in and provide resources for the "Our Water, Our World" program or a functionally equivalent pesticide use reduction outreach program.

The Annual Reporting requirement allows Permittees who participate in a regional effort to comply with C.9.h.i. to reference a report that summarizes these actions. Below is a

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report of activities and accomplishments of the *Our Water, Our World* program for FY 11-12.

- Coordinated program implementation with major chains Home Depot, Orchard Supply Hardware (OSH), and Ace Hardware National. Corporate office of OSH (San Jose) and Home Depot (Atlanta) directed support of the program with their stores.
- Coordinated master print run of the following: fact sheets, shelf talkers, literature rack signage, beneficial bug brochure, magnet, Pest or Pal activity guide for kids, pocket guide, and Pests Bugging You? booklet.
- Updated less-toxic Product Lists: OSH and Home Depot-specific lists/labels.
- Maintained [Our Water, Our World website](#).
- Provided [Ask-the-Expert](#) service—which provides 24-hour turnaround on answers to pest management questions.
- Provided and staffed exhibitor booths.
  - Excel Gardens Dealer Show, Las Vegas (August 2011) (see photo attached)
  - L&L Dealer Show, Reno (October 2011) (see photo attached)
  - NorCal trade show (February 2012) (see photo attached)
- Provided article for L&L distributor trade show magazine (see attachment—also includes *Our Water, Our World* ad). This magazine reaches over 5,000 industry professionals.
- Provided on-call assistance (e.g., display set-up, training, IPM materials review) to specific stores (e.g., OSH, Home Depots) (see photo attached).
- Worked with pesticide manufacturers to set up eco-friendly displays of less-toxic pesticides in Home Depot.
- Provided print advertising and articles – [Chinook Coupon Book](#) (see ad attached), [Chinook Mobile Coupon Pack](#) (see ad attached), and [sponsorship of Save the Bay 50<sup>th</sup> Anniversary Gala](#).
- Provided print advertising – [Bay Nature magazine](#) (see ad attached); [Bringing Back the Natives Garden Tour's garden guide](#) (see ad attached).

Additionally, BASMAA, in partnership with the UC IPM Program, continued to develop and implement a Pest Management Alliance grant from the Department of Pesticide Regulation for the *IPM Advocates for Retail Stores* project. The project's purpose is to develop and implement a program that will recruit, train, and mentor individuals to help retail stores implement the *Our Water, Our World* program. The project kicked off in December 2010. In FY 11-12, the project team:

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- conducted classroom and field training of 10 IPM Advocate candidates learning from a curriculum developed by the project team;
- developed and implemented a post-training coordination and monitoring program for the Advocates;
- through the Advocates, worked with the stores to set up displays and conduct trainings of store employees;
- created an [IPM Advocates web page](#) with links to online information and materials from UC IPM and *Our Water, Our World* that provides one-stop shopping for store employees, store managers, and IPM Advocates interested in keeping up with the latest IPM and product-related developments; and
- started to identify ways to sustain IPM Advocates after the grant expires (2013).

# **ATTACHMENTS**

## **C.7.b. Advertising Campaign**

Regional Litter Implementation Plan

*Be the Street* Report

BASMAA Baseline Evaluation Report



# Bay Area Stormwater Management Agencies Association

## Five-Year Regional Litter Implementation Plan

Plan Submitted: September 20, 2011



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Tasks	Timing	Budget	Permittee Actions*	Measuring Success	MRP
Phase A - Laying the Groundwork and Starting up the Youth Panel					Municipal Regional Permit Sections C.7.b, C.7.b.1, C.7.b.ii
Collect information about high school and college environmental clubs, civic organizations, and other stakeholders populated by 16-24 year olds in the BASMAA region.	Sept-Nov	\$8,400.00	Provide any info for any relevant orgs they are working with ----- Optional: Help consultant establish contact at organization via introductory email		
Research and create a list of youth related (and eco related) organizations in the region.		\$3,000.00	Provide info (name and general contact information) on known interested organizations they are working with ----- Optional: 1) Provide a contact name at a known interested organization 2) Write an an introductory email to your contact introducing the the consultant and the outreach campaign.	Compile 50 organizations.	
Research and create a list of eco clubs and service clubs at High Schools, Colleges & Universities.		\$5,400.00	Provide info (name and general contact information) on known interested school they are working with ----- Optional: 1)Provide a contact name at a known interested school 2) Write an an introductory email to your contact at interested school introducing the consultant and the outreach campaign	Compile 100 organizations.	
Set up integrated email list serve/ e-Newsletter program	Aug-Sept	\$10,000.00	Review/approval		
Create an email marketing account with a service like Constant Contact or Mail Chimp		\$1,500.00	N/A		
Create an email newsletter template to send out general announcements.		\$5,500.00	Review emails/newsletters	Send out 4 emails to our email list and achieve at least a 23% open rate (industry standard)	
Send enrolling email newsletter each quarter with links to forward to friends	Aug-ongoing through year 3	\$3,000.00	Optional: Forward newsletters/emails to local contacts	Collect 800 email addresses	
Conduct a pre-evaluation survey assessment	Aug-Oct	\$21,905			
Note: Dr. Nicole Sintov has now officially joined the SGA ranks. She has her Phd in Psychology with an emphasis in behavior change from USC. She has published studies in half a dozen journals including titles such as "Effectiveness of a Web-based Intervention in Promoting Energy Conservation in a University Residential Setting." I had Nicole take a look at the outreach approach and make recommendations regarding what she thinks would be our best evaluation options. Her thoughts were very closely aligned with the school site model we had discussed at the last meeting. Please visit this link ( <a href="http://bit.ly/qxFcGT">http://bit.ly/qxFcGT</a> ) to see her write-up.					
Engage Residential Youth Participation Through Events	Sept-Oct	\$15,750			Municipal Regional Permit Section C.7.b.ii.1 (litter only)

Build strategic partnerships with local community event organizers. If amenable, event representative receives the materials from the program (i. e. consultant) and the event organizer would set up and break down the booth display.		\$3,750.00	Send over a list of event organizers that would be valuable to reach out to ----- Optional: Reach out to contacts that you have relationships with and ask if they are interested in hosting a booth in a box	Develop partnerships with 20 organizations.	
Create booth materials, raffle prize, and sign up sheets available for cities and counties that will be hosting a booth at an event.		\$6,000.00	Review materials		
Design a rotating display that can be easily used and transported at events. The display will focus on getting passerby to join the program in some way (e.g. email sign-up, take a picture, enter a raffle, etc).		\$5,000.00	Review display		
Produce and print 5 displays to rotate throughout the various cities.		\$2,500.00	N/A		
Coordinate with permittees to collect data from the raffle, sign ups, newsletter and continue adding to CRM database. Data includes age and city.		\$6,000.00	Request and host materials at community events they are already slated to attend	Host materials at a minimum of 12 events	
Before the event, coordinate with individual permittees to receive and set up the display for their event.		\$3,000.00	Coordinate with consultant to set-up displays		
After the event, coordinate with individual permittees to collect the event sign-ups and enter the sign-ups to the email list.		\$3,000.00	Provide information to consultant ----- Optional: Enter sign-ups received from their events directly into the database		
<b>Create and Partner with Youth Panel</b>	<b>Oct-</b>	<b>\$10,000</b>	<b>Approval and (if desired) review of potential panel members</b>	<b>Create a panel with at least 15 youth participants</b>	<b>Municipal Regional Permit Section C.7.b.ii.2</b>
Develop criteria for eligible youth to serve on an advisory Youth Panel (16-24 year olds currently living in the BASMAA region)		\$2,400	Review criteria		
Passively recruit Youth Panel participants by spreading the word through existing City & County networks		\$2,000			
Create user-friendly private forum to host online discussions (e.g. private invite-only Facebook page)		\$2,600	N/A	Spontaneous idea suggestions & volunteer posts from Youth Panel	
Reach out to Youth Panel on an as-needed basis		\$3,000		Sporadic check-ins and input requests throughout the year	
<b>Phase B - Designing Tactical Elements &amp; Launching the Video Contest</b>					<b>Municipal Regional Permit Section C.7.b.ii.2</b>
Develop concepts for partnership engagement with corporations; enlist them on sponsorships, cleanups and other promotional opportunities	<b>Dec-Feb</b>	<b>\$6,500</b>	<b>Review/approval</b>	<b>Sponsorship quality and prizes equivalent of a \$500 monetary value equivalent</b>	
Develop corporation list of historically interested, related industries and also those with charitable giving arms for additional sponsorship possibilities. Create contact list and add to tracking database		\$1,200	----- Optional: Provide contact information for relevant organizations.	Develop a contact list with 15 organizations	
Coordinate with Youth Panel to gauge their feedback on the attractiveness of potential prizes		\$1,500	N/A		

Outreach to potential sponsors and secure partnership(s) and contest prizes for the campaign		\$3,800	N/A	
Design look/brand of campaign	Dec-Jan	\$9,800	Review/approval	Ongoing feedback, synergy with Youth Panel
Develop the creative brief to kick start the design process		\$1,400	Review and approve creative brief	
Create 2-3 initial design mock-ups of a video contest flyer for the group to choose from		\$5,400	Review and provide comments	
Write the text for the flyer		\$1,800	Review and provide comments	
Design various iterations of the flyer in order to set the tone for the "look" of the campaign		\$3,600	Review and provide comments	
After two rounds of edits, finalize the video contest flyer as well as the campaign aesthetic		\$3,000	Final Review	Establish the colors, font and style of the campaign's design
Develop the PSA Advertising Contest opportunity to engage high school organizations, local colleges and universities and other stakeholders	Nov-Mar	\$37,000	Review/approval	Assess initial popularity with key interested parties and make modifications as needed
Reach out to some key interested parties (e.g. high school principals, college film professors, youth film networks, etc) to gauge interest/thoughts about the contest and modify the approach accordingly.		\$1,800	Optional: If you have any contacts in this category, provide their contact information to consultant	Get feedback from half a dozen people
Define the specifications of the contest (e.g. what type of subject matter) and get feedback from the Youth Panel		\$840	Review contest specifications	
Line out all of the campaign logistics including rules, deadlines, eligibility requirements, etc.		\$3,000	Review	
Design the needed campaign materials. May include: poster, email blast, bookmark, etc.		\$5,160	Review	Design 1 and print needed campaign materials to publicize the contest
Present options and decide which additional material would be best to create (receive feedback from committee and youth panel)		\$960	Provide feedback	
Design 1 additional handout such as a poster (includes two rounds of revisions)		\$4,200	Review	
Work closely with early adopters to submit a video and seed interest.		\$7,800	N/A	
Reach out directly to teachers, film related orgs and youth panel to scout potential early adopters for the contest.		\$1,800	N/A	
Identify 3-5 early adopters and provide any support they may need to ensure they submit videos and help seed interest in the contest.		\$6,000	N/A	
Promote the contest		\$14,400	Optional: Distribute materials locally to promote contest	Distribute the materials directly to 60 teachers throughout the County
Work through early adopters and the previously developed list of teachers, film organizations, college resident advisors, etc to promote the contest by mailing handouts for distribution to their members/students		\$14,400	Optional: Actually post flyers/posters on high school and college campuses	
Expenses: Printing expenses		\$4,000		
Design Website/Blog that is run by a Content Management System (CMS)	Jan-	\$18,600	Review/approval	Create a website with up to 8 pages
Example: SGA created the LA Team Effort website that was originally used to launch LA Stormwater's "team effort" advertising campaign. Website has since evolved to be available indefinitely as a portal for people who want to help protect water quality.				
Write and develop all of the content for the site		\$3,840	Review content	
Map the website navigation bar structure		\$1,200	N/A	
Create homepage and internal page wireframes (e.g. skeletal layouts of what the pages will look like)		\$1,800	N/A	
Design the website "look"		\$3,000	Review	

Program the website pages, include capacity for people to upload videos for the contest		\$7,800	N/A		
Configure content to make it Search Engine Optimization (SEO) friendly		\$960	N/A	200+ visitors per month as per Google Analytics calculations	
Media Engagement/Press Releases for video contest	Mar-Apr	\$24,840	Review/approval		
Coordinate with BASMAA's already existing media relations effort to ensure that the contest is tied into media pitches		\$2,400	Help coordinate into BASMAA's media relations effort		
Outreach to online portals such as bloggers, podcast series, online news sites, etc to promote the contest		\$14,040	N/A	Placement in at least 15 online blogs	
Create a list of potential locations to reach out to		\$3,000	Optional Activities -Recommend online portals		
Develop a general pitch for reaching out to the bloggers or editors		\$840	Review		
Customize the pitch accordingly and reach out directly to bloggers and editors. Field questions as needed and follow up with contacts to get coverage of the contest.		\$7,800	Review		
Track placements of the contest online		\$2,400	N/A		
Work with local jurisdictions to send out email announcements to their already established email lists as well as promote the contest through newsletters and City publications		\$8,400	Distribute info locally through city/county email lists & government publications and websites	Placement in at least 15 online, print city publications or email list send outs	
Prepare files (i.e. text only and with images) that the individual cities can use to send out and announce the contest		\$2,400			
Coordinate with BASMAA reps to provide the needed info along with the email template		\$3,600			
Follow up with BASMAA reps to track send outs in their individual jurisdictions		\$2,400			
Launch & maintain the Facebook page	Mar-	\$35,000	Provide event photos and local City related updates for posting on the page.	100 fans 60 user interactions from our fans (posts, comments, 'likes', links, photos)	
Example: SGA created and maintains the LA Stormwater program's FB page: facebook.com/lastormwaterprogram. You can see our latest promotion, the Pet N Water photo contest, on the wall.					
Assumptions: The budget/time allocation for this task has been done using a blended rate of \$120; however, during the implementation SGA's actual rates will be used (i.e. higher than this for a Project Manager and lower than this for a Project Coordinator). This task also assumes coordination and input from the committee. The budget assumes that the committee will want to give approval on each of the consultant's wall posts. If this is not the case and a general approval is given when the page is first launched then the price will adjust down accordingly. I feel more comfortable leaving as is until we start implementing the task and are then able to re-assess how much committee involvement is part of the implementation.					
Coordinate with Youth Panel to get feedback about topics and areas of interest for the Facebook page. Use this information to create the Facebook strategy.		\$950.00	N/A		
Create the Facebook page and recruit an initial base of fans		\$8,550	Optional: If your agency has a Facebook page, follow or like the BASMAA Litter page		
Research and compile a list of related Facebook pages. Reach out to the Facebook pages with a "nice to meet you" and a wall post.		\$2,400.00	Optional:Provide information on related Facebook pages		

Create and place Facebook ads.		\$4,400.00	Review ads ----- Optional: If budget available, use the ad in local promotions.		
Create a Facebook invite and send it out to people in our email list.		\$1,750.00	Forward the invite to local contacts		
Maintain the Facebook page with posts at least 3 x's a month and run mini promotions to engage fans. This also includes checking and responding to comments on a daily basis as well as posting "trust agent" (trustagent.com/) comments on partner Facebook pages in order to create meaningful online partnerships.		\$25,500.00	Review promotions and wall posts If your agency has a FB page, "like" or "share" the BASMAA posts	Secure partnerships (e.g. posting on our wall or "liking" our page) with 10 other Facebook pages. These will be "non-stormwater program" pages, i. e., pages from organizations that are not Permittees or their partner agencies.	
Research and keep a pipeline of updates to post on the page a minimum of 3xs per month.		\$4,800.00	Review ads ----- OPTIONAL: If budget available, use the ad in local promotions.		
Respond to fan comments and likes (frequency depends on amount of interaction received from fans).		\$3,600.00	N/A		
Visit other Facebook pages approx once a week and post comments and likes on their posts as part of our trust agent comments.		\$3,600.00	N/A		
Run mini Facebook promotions approx every 6 weeks. Promotions are characterized by encouraging fans to interact with the page and receiving a t-shirt or kudos in return (e.g. tell 1 friend about our page and both you and your friend will receive one of our nifty t-shirts)		\$12,000.00	Review promotions ----- OPTIONAL: Promote promotions on local FB pages.		
Expenses: advertisements, giveaways for promotions (in some cases). Create distribution plan for PSA winner(s) (online and offline)		\$1,500.00			
	Feb-Apr	\$4,250	Review/approval		
Create advertising plan detailing points of distribution for winning contest entry			Review advertising plan		
Research a list of potential outlets, taking into account demographics, geographic reach and relevance to issue, to distribute the video					
Get pricing options for the select outlets					
Explore opportunities for un-paid exposure of the ads (e.g. film festivals, school announcements, etc)					
Create a plan detailing which locations will feature the PSA					

Engage our audience and our audience's social networks to review and vote on the best PSAs	May	\$10,800			
Review contest entries to ensure they are complying with the rules (e.g. no foul language) and are relevant.		\$3,600.00	Optional: Review contest entries		
Post the appropriate entries to make them available for viewing.		\$3,600.00	N/A		
		\$3,600.00	N/A		
Create a YouTube channel to feature the contest entries					
<b>Phase C - Distributing the Winning Video</b>					Fulfills Municipal Regional Permit Section C.7.b.ii.2
Advertising - PSA Online and Offline Releases	Jun-Jul	\$44,760	Review/approval	Winning entry celebrated in 15 or more outlets (e.g. local city channels, film festivals, movie theaters, art museum exhibit)	
Regular Check-in meetings with Youth Panel to survey effectiveness, awareness, knowledge, trends		\$1,320	N/A		Municipal Regional Permit Section C.7.b.ii.2
Format video into different file extensions to allow it to be posted on different mediums (e.g. online, t.v., etc)		\$3,600			
Actively distribute the winning contest entry to the outlets noted in the ad buy plan. Purchase limited ad buy space, if needed.		\$6,000	Optional: If budget available, place BASMAA ads locally		
Coordinate with individual cities and counties to have the PSA run on local access channels and via an embedded video on government websites and Facebook pages		\$3,840	Post the PSA on local city television channels and website	Placement in at least 7 city stations.	
Expenses: Advertising space, contractor for the video conversion		\$30,000			
	Year 1 Total	\$257,605			

## YEAR 2

Tasks	Timing	Budget	Permittee Actions*	Measuring Success	MRP
Phase A - Maintain Buzz and Continue to Grow Presence					
Program Check-In	Ongoing	\$3,000.00			

Conduct assessment of what worked and what didn't work from Year 1. Modify Year 2 implementation plan accordingly		\$3,000.00			
Facebook page	Ongoing	\$25,500.00	Provide event photos and local City related updates for posting on the page.	350 fans and 200 user interactions from our fans (posts, comments, 'likes', links, photos)	
Maintain the Facebook page with posts at least 3 x's a month and run mini promotions to engage fans. This also includes checking and responding to comments on a daily basis as well as posting "trust agent" (trustagent.com/) comments on partner Facebook pages in order to create meaningful online partnerships.		\$25,500.00	Review promotions and wall posts ----- Optional: If your agency has a FB page, "like" or "share" the BASMAA posts	Secure partnerships (e.g. posting on our wall or "liking" our page) with 10 other Facebook pages	
Research and keep a pipeline of updates to post on the page a minimum of 3xs per month.		\$4,800.00	N/A		
Respond to fan comments and likes (frequency depends on amount of interaction received from fans).		\$3,600.00	N/A		
Visit other Facebook pages approx once a week and post comments and likes on their posts as part of our trust agent comments.		\$3,600.00	N/A		
Run mini Facebook promotions approx every quarter. Promotions are characterized by encouraging fans to interact with the page and receiving a t-shirt or kudos in return (e.g. tell 1 friend about our page and both you and your friend will receive one of our nifty t-shirts)		\$12,000.00	Review promotions ----- Optional: Promote promotions on local FB pages.		
Expenses: advertisements, giveaways for promotions (in some cases).		\$1,500.00	Review giveaway ideas.		
Website	Ongoing	\$20,440	Review website and provide input as needed		
Keep the website maintained		\$16,440.00			
Review website content after the end of the video contest. Modify content and layout as needed to keep the website updated and current.		\$3,000.00			
Monthly website checks to ensure all links and pages are functioning correctly		\$4,800.00			
Post new content on the website monthly either through articles, links, images or videos to ensure the website is being updated frequently.		\$8,640.00		New monthly website content	
Do Search Engine Optimization (SEO) to increase the website's ranking on search engines		\$4,000.00		500+ visitors per month as per Google Analytics calculations	
Develop and distribute campaign branded promotional item like a t-shirt, hat, tote bag, etc. (Distribute based on participants taking some type of action to further engage them in pollution prevention/litter reduction)	Sept-Nov	\$8,600	Review/approval		
Research potential giveaways and consult Youth Panel on appropriate items		\$500	Review/approval		
Create initial design concepts and receive input (includes up to two rounds of edits)		\$3,600	Review/approval		
Finalize the design concept		\$1,000	Review/approval		
Price and place order		\$1,000	----- Optional: purchase giveaways for local outreach	100-200 prize giveaways depending on pricing	
Outline criteria for who is to receive a giveaway item. Distribute items (e.g. shipping or distributing to BASMAA members) to be distributed to target audience.		\$1,500	N/A		
Expenses: Printing of items and shipping costs for distributing the giveaways.		\$1,000			
Email Marketing	Ongoing	\$23,040			

Coordinate with fan base regarding some key areas of interest. Send out at least 4 emails.		\$17,040.00	Review email content	List of 1,000 email subscribers with an open rate of 23% or more (industry standard)	
Develop topic ideas for the year's emails		\$3,480.00			
Write the content for the emails (4)		\$4,800.00			
Design the emails (4)		\$6,600.00			
Send out the emails and track the statistics to inform future correspondences (i.e. what worked and what didn't)		\$2,160.00			
Manage the list (e.g. clean out bounces, add new names, generate reports, etc)		\$6,000.00			
YouTube channel	Ongoing	\$15,640		2,500 views and 25 channel subscribers	
Maintain the channel by responding to comments and posting videos that are relevant and were created by cities that are part of BASMAA or other partner organizations		\$8,640.00	Provide video content as it becomes available		
Create 1 new video to post on the channel		\$7,000.00	Review/approval		
Youth Panel Updates	Ongoing	\$6,000		Receive 60 interactions/comments from our youth panel	
Continue to engage Youth Panel Facebook group for input on an as needed basis		\$6,000.00	N/A	Check in with the youth, at minimum, once a month	
<b>Phase B - Increase the Level of Commitment (get new people to join the campaign but also get Year 1 people to step it up)</b>				Recruit 200 new newsletter subscribers and 250 new Facebook fans.	
Take Action-- Volunteer!	Oct-Jul 13	\$36,600	Review/Approval		
Host a "Give a Day" volunteer and win online contest to encourage people to volunteer for a water related event (e.g. clean-up, tree planting, etc)		\$36,600.00	Review contest/event idea. ----- Optional: conduct local outreach to promote contest/event		
Set up the infrastructure (i.e. new custom programmed tab on the Facebook page) to allow people to upload a photo volunteering in order to be entered for a chance to win a cool prize		\$6,000.00	N/A		
Coordinate with last year's sponsors to secure a prize		\$1,500.00	N/A		
Create contest rules, requirements, etc		\$2,700.00	Review/Approve		
Design the Facebook landing pages and a flyer to promote the giveaway		\$7,000.00	Review/Approve		
Promote the contest with local organizations that are hosting volunteers as well as through existing City/County networks with tactics such as, but not limited to: sending out emails to existing listservs, placing announcements in local newsletters, mailing flyers for distribution, posting the promo on external websites		\$14,000.00	Reach out to existing networks of other organizations and non-profits	Partner with, at least, 10 organizations and/or schools	
Track entries and award the prize		\$5,400.00	N/A	Receive 120 entries	
	Year 2 Total	\$138,820			
<b>YEAR 3</b>					
<b>Tasks</b>	<b>Timing</b>	<b>Budget</b>	<b>Permittee Actions*</b>	<b>Measuring Success</b>	<b>MRP</b>

Phase A - Maintain systems, strategies that worked during Year 2					
Program Check-In	Ongoing	\$3,000.00			
Conduct assessment of what worked and what didn't work from Year 2. Modify Year 3 implementation plan accordingly		\$3,000.00			
Facebook page	Ongoing	\$25,500.00		700 fans and 300 user interactions (posts, comments, 'likes', links, photos)	
Maintain the Facebook page with posts at least 3 x's a month and run mini promotions to engage fans. This also includes checking and responding to comments on a daily basis as well as posting "trust agent" (trustagent.com/) comments on partner Facebook pages in order to create meaningful online partnerships.		\$25,500.00	Review promotions and wall posts ----- Optional: If your agency has a FB page, "like" or "share" the BASMAA posts	Secure partnerships (e.g. posting on our wall or "liking" our page) with 10 other Facebook pages	
Research and keep a pipeline of updates to post on the page a minimum of 3xs per month.		\$4,800.00	N/A		
Respond to fan comments and likes (frequency depends on amount of interaction received from fans).		\$3,600.00	N/A		
Visit other Facebook pages approx once a week and post comments and likes on their posts as part of our trust agent comments.		\$3,600.00	N/A		
Run mini Facebook promotions approx every quarter. Promotions are characterized by encouraging fans to interact with the page and receiving a t-shirt or kudos in return (e.g. tell 1 friend about our page and both you and your friend will receive one of our nifty t-shirts)		\$12,000.00	Review promotions ----- Optional: Promote promotions on local FB pages.		
Expenses: advertisements, giveaways for promotions (in some cases).		\$1,500.00	Review giveaway ideas.		
Website	Ongoing	\$16,440		1,000+ visitors per month as per Google Analytics calculations	
Keep the website maintained		\$16,440.00			
Modify content and layout as needed to keep the website updated and current.		\$3,000.00			
Monthly website checks to ensure all links and pages are functioning correctly		\$4,800.00			
Post new content on the website monthly either through articles, links, images or videos to ensure the website is being updated frequently.		\$8,640.00		New monthly website content	
Email Marketing	Ongoing	\$23,040		List of 1,000 email subscribers with an open rate of 23% or more (industry standard)	
Coordinate with fan base regarding some key areas of interest. Send out at least 4 emails.		\$17,040.00	Review email content		
Develop topic ideas for the year's emails		\$3,480.00			
Write the content for the emails (4)		\$4,800.00			
Design the emails (4)		\$6,600.00			
Send out the emails and track the statistics to inform future correspondences (i.e. what worked and what didn't)		\$2,160.00			
Manage the list (e.g. clean out bounces, add new names, generate reports, etc)		\$6,000.00			
YouTube channel	Ongoing	\$16,140		2,500 views and 35 channel subscribers	
Maintain the YouTube channel by recruiting subscribers		\$8,640.00			

Post updated video content on the channel (new or repurposed) in order to keep it fresh		\$7,500.00	Review videos ----- Provide videos that have been developed locally for posting on the channel	Posting 2 additional videos on the channel	
Database Maintenance & Youth Panel Updates	Ongoing	\$4,000			
Continue to engage Youth Panel Facebook group for input on an as needed basis		\$4,000.00			
<b>Phase B - Engage New People in the Campaign and Involve Another Group (e.g. the art community)</b>					Municipal Regional Permit Section C.7.b
Increased Commitment for the Year-- Get crafty!	Oct-May 14	\$44,580			
Set up the details for an art related/water quality contest (e.g. painted rain barrels, painted storm drains, found litter art, etc). Secure sponsors for the prizes/giveaways.		\$5,400.00	Review/approve ideas		
Coordinate with interested parties (e.g. art museums, high school and college art teachers) to pique interest and gauge their interest in the promotion		\$3,000.00		Reach out to at least 15 organizations	
Promote the contest		\$17,400.00			
Design the materials to promote the contest and encourage entries/involvement		\$3,000.00	Review/approve	Flyer & email blast announcing the promotion	
Reach out to teachers and school clubs to spread the word		\$5,400.00			
Send out messages to our existing online networks		\$2,760.00			
Reach out to online bloggers & other Facebook pages to spread the word about the promo		\$6,240.00			
Track, review and, if appropriate, judge entries		\$5,640.00			
Tie in with BASMAA's already existing media relations efforts to promote the entries. In addition, possibly host a media event to showcase the art installations that will be featured throughout the counties		\$9,000.00			
Promote the contest entries on the social media channels and with our network		\$2,640.00		Receive 120 entries	
Expenses: printing of flyers, other misc		\$1,500.00			
Conduct a post- evaluation survey assessment	Feb-Apr 14	\$20,000			
Note: Dr. Nicole Sintov has now officially joined the SGA ranks. She has her Phd in Psychology with an emphasis in behavior change from USC. She has published studies in half a dozen journals including titles such as "Effectiveness of a Web-based Intervention in Promoting Energy Conservation in a University Residential Setting." I had Nicole take a look at the outreach approach and make recommendations regarding what she thinks would be our best evaluation options. Her thoughts were very closely aligned with the school site model we had discussed at the last meeting. Please visit this link ( <a href="http://bit.ly/qxFcGT">http://bit.ly/qxFcGT</a> ) to see her write-up.					
Put together the final report	May 14.	\$9,000			
	Year 3 Total	\$161,700			
	GRAND TOTAL	\$558,125			

\* This indicates the minimum level of effort the consultant would be asking for of the permittees. If permittees are interested in getting more involved then wonderful! I didn't include this here because I thought it would be best to plan budget around the assumption that we would not be getting additional involvement. If permittees provide more assistance than originally anticipated then we can put the budget savings in other places.

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# BASMAA Evaluation Approach

The two objectives of the BASMAA “advertising” campaign are to decrease litter and to increase engagement. The following write-up provides our approach to how to evaluate these two goals.

## DECREASE LITTER

### Evaluation approach

- Two-pronged approach to evaluating success of program to include self-reported surveys and observational data collection

### Survey component

- Select 4 schools (high schools or universities or community colleges) throughout the entire geographic area.
- Engage the school network at all 4 schools
  - e.g., teachers, administration, student groups, athletic teams – to promote survey taking and involvement in outreach programs.
  - A few preliminary ideas include:
    - Teachers providing an extra credit opportunity for survey participation
    - Offering raffle prizes as incentives for survey taking
    - Provide a survey item where students write in names of friends who referred them to survey. Give student referrers incentives/FB recognition
      - Similar ideas for teachers who get their students to participate
- Administer baseline survey prior to program implementation
  - Surveys administered online
    - To address online survey validity issues, we’ll include a simple random/careless responding check to enable identification of bogus responses
  - Suggested sample size = 300 students total at baseline
  - As part of surveys, gather contact information from student participants – this is a highly mobile population with frequent changes in contact information.
    - Obtain cell phone, home phone, email address.
- Throughout program
  - Reach out to students on FB, through e-newsletters, and through other avenues to keep them in touch with program throughout years 2 & 3
- Post-outreach (end of year 3)
  - Follow-up with same students who participated in initial survey

### Observational component

The observational component will supplement the self reported surveys above. Since the ultimate goal is to reduce litter, this will help to bolster the validity of the findings.

- At same 4 schools above
  - Conduct a pre-outreach trash assessment after school lunch one day where amount/type of litter is assessed.
  - Conduct similar trash assessment after outreach complete.

Why did we go with this approach?

- Focusing on existing cohesive communities has the following benefits:
  - Increases likelihood of program success because:
    - Increases likelihood that program will be noticed by target audience members
    - Offers better opportunity to leverage social norms
  - Likely to result in greater sample size for surveys
  - Makes observational data collection a reasonable supplement versus obtaining observational measures in the community at large where outreach effects will be extremely dilute and probably not detectable
- Provides for direct evaluation of outreach success
- Multi-method approach (self-report surveys plus observational data) is stronger relative to one that uses a single measure of program success
- Enhanced efforts to keep in touch with participants likely to result in higher follow-up rate

What are the drawbacks to this approach?

- In general, the broad nature of the program we are implementing doesn't lend itself well to contained evaluation (as opposed to a program that was designed to specifically take place within the schools).
- May be difficult to work with constraints of schools
- School subsample may not be entirely representative of entire target audience
  - To address this: Youth who access outreach elements and surveys from sources outside of the 4 schools would also be able to participate, so we will be able to:
    - Assess level of involvement in outreach as well as recruitment source in baseline and follow-up surveys and adjust statistically for these effects

## INCREASE ENGAGEMENT YEAR ONE

Build database of high school and college environmental clubs, civic organizations, and other stakeholders populated by 16-24 year olds in the BASMAA region.

- Research and create a list of 50 youth related (and eco related) organizations in the region and add it to the database.
- Research and create a list of 100 eco clubs and service clubs at High Schools, Colleges & Universities and add them to the database.

Set up integrated email list serve/ e-Newsletter program

- Send out 4 emails to our email list and achieve at least a 23% open rate (industry standard)
- Collect 800 email addresses

Engage Residential Youth Participation through Events

- Develop partnerships with 20 event organizers.
- Host materials at least 12 events

#### Create and Partner with Youth Panel

- Create a panel with at least 15 youth participants
- Reach out to panel, at least, every other month

Develop concepts for partnership engagement with corporations; enlist them on sponsorships, cleanups and other promotional opportunities

- Sponsorship quality and prizes equivalent of a \$500 monetary value equivalent
- Develop a contact list with 15 corporations

Develop the PSA Advertising Contest opportunity to engage high school organizations, local colleges and universities and other stakeholders

- Get feedback from half a dozen people from the Youth Panel
- Design 1 and print needed campaign materials to publicize the contest
- Distribute the materials directly to 60 teachers throughout the Bay Area

Design Website/Blog that is run by a Content Management System (CMS)

- Create a website with up to 8 pages
- 200+ visitors per month as per Google Analytics calculations

Media Engagement/Press Releases for video contest

- Placement in at least 15 online blogs
- Placement in at least 15 online, print city publications or email list send outs

Launch & maintain the Facebook page

- 100 fans 60 user interactions from our fans (posts, comments, 'likes', links, photos)
- Secure partnerships (e.g. posting on our wall or "liking" our page) with 10 other Facebook pages. These will be "non-stormwater program" pages, i.e., pages from organizations that are not Permittees or their partner agencies.

Engage our audience and our audience's social networks to review and vote on the best PSAs

- Have at least 5 viable videos for voting

Advertising - PSA Online and Offline Releases

- Winning entry celebrated in 15 or more outlets (e.g. local city channels, film festivals, movie theaters, art museum exhibit)
- Placement in at least 7 city stations.

Develop and distribute campaign branded promotional item like a t-shirt, hat, tote bag, etc. (Distribute based on participants taking some type of action to further engage them in pollution prevention/litter reduction)

- 200-300 prize giveaways depending on pricing

## YEAR TWO

Facebook page

- 350 fans and 200 user interactions from our fans (posts, comments, 'likes', links, photos)

- Secure partnerships (e.g. posting on our wall or "liking" our page) with 10 other Facebook pages

#### Website

- 600+ visitors per month as per Google Analytics calculations
- Secure 10 in bound links

#### Email Marketing

- List of 1,000 email subscribers with an open rate of 23% or more (industry standard)

#### YouTube channel

- 2,500 views and 25 channel subscribers

#### Database Maintenance & Youth Panel Updates

- Receive 60 interactions/comments from our youth panel
- Check in with the youth, at minimum, once a month

Increase the Level of Commitment (get new people to join the campaign but also get Year 1 people to step it up)

- Recruit 200 new newsletter subscribers and 250 new Facebook fans. Ideally, 40% of the contest entries would be from already existing program fans to show an increased level of commitment.

#### Take Action-- Volunteer!

- Partner with, at least, 10 organizations and/or schools
- Receive 120 entries

## YEAR THREE

#### Facebook page

- 700 fans and 300 user interactions (posts, comments, 'likes', links, photos)
- Secure partnerships (e.g. posting on our wall or "liking" our page) with 10 other Facebook pages

#### Website

- 1,000+ visitors per month as per Google Analytics calculations

#### Email Marketing

- List of 1,000 email subscribers with an open rate of 23% or more (industry standard)

#### YouTube channel

- 2,500 views and 35 channel subscribers

#### Increased Commitment for the Year-- Get crafty!

- Reach out to at least 15 organizations
- Receive 120 entries

*The following list contains items described both through numeric achievements and through narrative performed by S. Groner Associates on behalf of the Bay Area Stormwater Management Agencies Association during Fiscal Year 2011-12 as related to regional efforts to mitigate trash/litter TMDLs.*

**Facebook:**

- We created and launched the Be the Street Facebook page (<https://www.facebook.com/BetheSt>)
- 406 fans
- 683 visits
- 26 interactions
- We also created and implemented a Facebook ad geared towards Bay area youth ages 14-24 years old to gain Facebook page fans. The ad had the following text:
- "Join Be the Street to Keep Our Community Clean & Enter Free Contests to Win Cool Prizes!"
- The ad ran for one month:
  - Gained 379 fans.
  - 471,701 impressions
  - Social Reach (measure of how many unique Facebook users saw their friends like Be the Street) 9,372
- In addition, the Facebook page integrates other outreach elements by including an link to the website ([www.BetheStreet.org](http://www.BetheStreet.org)), an option to signup for the Be the Street eNewsletter and a link to the Be the Street YouTube channel (<http://www.youtube.com/bethestreet>).

**YouTube:**

- We created and launched the Be the Street YouTube channel (<http://www.youtube.com/bethestreet>) on February 15, 2012. The channel is used as a social media tool to present anti-litter and pollution prevention related videos online. The channel offers quick access to online videos and links to share the videos. We maintained the channel and posted one program video highlighting the PSA video contest. Here are some of the stats:
- 812 channel views
- Similar to the other social media tools, it offers an opportunity for viewers to comment or give feedback on anti-litter and pollution prevention material. The Be the Street YouTube channel allows for a positive visual association with the program and attracts new interest.

**Brand**

- Developed and finalized Be the Street Brand, including:
  - Created 27 mock ups
  - Released and analyzed 3 surveys to Committee
- Developed and released Branding Guidelines Document to outline use of Be the Street brand by other parties

**eNewsletter:**

- Created Basmia newsletter template and a welcome e-blast template ;
- Wrote 3 articles for the eNewsletter;
- Total number of subscribers: 181
- Sent out 1 e-newsletter issue to 164 subscribers;
- Sent out 3 welcome emails to new subscribers;
- Achieved an overall open rate of 26.8% and a click rate of 34% (% of those who opened the newsletter and clicked on at least 1 link);
- Sent out \$20 iTunes gift cards to 4 subscribers that subscribed at events.

**Events:**

- Proposed 3 options for grassroots campaigns;
- Finalized a concept proposal for grassroots campaigns and designed materials for it (image template and backdrop template);
- Designed 1 *Sign up for our eNewsletter* poster;
- Designed 1 *Events eNewsletter Signup Sheet*.

**Website**

- We launched the website, [www.bethestreet.org](http://www.bethestreet.org), on May 2
- Developed all content on the website including: About Us, Homepage, Selected Videos, Contact Us and Youth Resource Council article
- Debugged and tested video voting feature in preparation to go live with item in FY 12/13
- Included submission forms accessible via standard viewing and mobile viewing
- We reached 427+ visits from target area (excludes Long Beach, other states and out of country visits)

**Video Contest:**

- Outreach to 50 schools
- Outreach to 49 organizations
- Outreach to 10 clubs
- Outreach to 8 summer media camps
- Video Submissions: 1, well ahead of our deadline which is October 30, 2012
- Developed and released a flier to promote the Video Contest
- Developed and posted a short video to promote the Video Contest:  
<http://www.youtube.com/watch?v=jqdWZj2DmDo&feature=plcp>

**Youth Resource Council**

- Reached out to 129 organizations
- Obtained 44 members
- Posted 27 threads
- Received 65 comments from members
- 1 thread started my member
- YRC Signup sheet was created for signups at events

**Survey:**

- Created and finalized online survey tool
- Disseminated survey to schools:
- Completed Surveys: 337
  - Completed WITH Partially Completed Surveys: 419
  - Outreached to 63 Schools
  - 15 Schools participated in Survey
    - Woodside (San Mateo)
    - Oceansiana (San Mateo)
    - Carlmont Highschool- (San Mateo)
    - Redwood High School (San Mateo)
    - Sequoia High School (San Mateo)
    - Independence (Santa Clara)
    - San Jose City College (Santa Clara)
    - Evergreen Valley College (Santa Clara)
    - Ohlone College (Alameda)
    - Las Positas- (Alameda)
    - Chabot College (Alameda)
    - University of California- Berkeley (Alameda)
    - San Leandro High School (Alameda)
    - Jesse Bethel High School (Vallejo)
    - Fairfield High School (Fairfield-Suisun)

# BASMAA Baseline Evaluation Report

September 7

# 2012

This report describes littering behavior and predictors of littering among youth in the Bay Area region.

## 1. Executive Summary

The goal of this project was to assess and describe littering behavior and perceived social norms related to littering among youth living in the Bay Area. The data collected stand alone to characterize Bay Area youth, and also will serve as a baseline against which data from a future follow-up survey will be compared following outreach campaign implementation.

A 5-minute online survey was made available in Spring 2012. The survey assessed littering behavior, contextual factors related to littering, peer-to-peer interactions about to littering, and willingness to participate in various campaign activities (e.g., art contest). Recruitment for the survey included outreach to Bay Area high schools and colleges, and placement of an ad on the social networking website [www.Facebook.com](http://www.Facebook.com).

A total of 353 individuals were eligible for inclusion in the sample based on age (14-24 years) and residence (provided zip code that was within the BASMAA region). The sample was 60% female, had a mean age of 17 years, and almost all respondents were in high school. Select results are highlighted below.

- 86% of respondents reported littering at least one item in the past month
- The items littered by the most respondents in the past month included chewing gum (littered by 52% of respondents in the past month), food waste (41%), and food or beverage-related packaging (40%).
- The items littered by the fewest respondents in the past month were cigarette butts, (littered by 7% of respondents in the past month), disposable utensils (14%), and bottle caps (21%).
- Among those who littered an item at least once in the past month, frequent littering varied considerably by trash item: littering items at least once per week ranged from 35% for beverage containers to 43% for chewing gum to 74% for cigarette butts.
- Littering at school was more common relative to other settings: 25%, 10%, and 7% of respondents littered at least sometimes at school, at home, and at work, respectively.
- The vast majority of the sample (91%) indicated that trash/recycling can placement deterred them from littering. Additionally, 71% of respondents stated that feelings of guilt discouraged them from littering.
- 88% of respondents indicated that they picked up trash that was not their own at least once in the past month.
- Respondents rated their likelihood of littering in the next month on a 7-point Likert<sup>1</sup> scale ranging from (1) Very unlikely - (7) Very Likely. The mean score was 2.79 (SD=1.67), meaning that on average, respondents intended not to litter.
- Respondents also rated their likelihood of participating in a number of activities related to the campaign. The activity that most respondents were at least somewhat likely to do was

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<sup>1</sup> Likert scale: A Likert scale is a type of psychometric scale frequently used in surveys and questionnaires. Scales are bipolar, measuring either positive or negative response to a statement. A Likert item is simply a statement which the respondent is asked to evaluate according to any kind of subjective or objective criteria; generally the level of agreement or disagreement is measured. It is considered symmetric or "balanced" because there are equal amounts of positive and negative positions.

expressing disapproval if s/he saw a friend littering: 69% of respondents reported they were at least somewhat likely to do so. Additionally, 62% of respondents were at least somewhat likely to pick up litter that was not their own, and 40% were at least somewhat likely to participate in a litter cleanup day.

- Results of regression analyses indicated that females and those who had stronger disapproval ratings of their own and their friends' littering behavior had significantly greater likelihood of several prosocial<sup>2</sup> things (e.g., express disapproval of friends' littering, not littering)

## 2. Introduction

The goal of the Bay Area Stormwater Management Agencies Association (BASMA) anti-litter campaign was to reduce littering, promote peer-to-peer interaction regarding littering, and raise awareness of pollution related to the audience found to be most often littering, namely, 14-24 year olds. As part of this campaign, a branding concept called Be The Street was developed. This brand had a youthful look and feel in an effort to reach and connect with teenagers and young adults. Under this brand, the state of the "street" is a reflection of the youth who use it. By exploring problems and solution related to community and environmental issues, street-by-street, participants are rewarded with the pride, and the fun, of having created the kind of "street" they have always wanted to live on. Be The Street also leverages social norms by empowering youth as the "voice" of community betterment related to litter, encouraging youth-to-youth contact regarding littering. Prior to implementation of any campaign activities, a survey was created and administered to youth to assess baseline levels of littering and potentially important items of interest related to littering.

### *Purpose*

The goal of the baseline survey was to describe littering behavior and perceived social norms among youth living in the Bay Area. This survey was designed to serve as a baseline against which data from a follow-up survey will be compared following outreach campaign implementation.

## 3. Methods

### *Materials*

A survey was constructed to assess littering behavior, situational predictors of littering, peer-to-peer interactions related to littering, and willingness to participate in various campaign activities (e.g., art contest). The survey also collected information on demographics and technology use to be used in targeting campaign outreach efforts. The survey was available online via secure online survey administration tool Qualtrics. The questions and summary answers are available in Appendix A.

### *Procedures*

Potential participants could access the survey 24 hours per day, 7 days per week from January through March 2012. It took approximately five minutes to complete.

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<sup>2</sup> Prosocial behavior, or voluntary behavior intended to benefit another, consists of actions that benefit other people or society as a whole, such as helping, sharing, donating, co-operating, and volunteering.

### *Recruitment*

Participants were recruited by reaching out to schools within the BASMAA region via phone and email. Specifically, administrators and faculty at high schools and colleges in the counties of Alameda, San Mateo, Vallejo, Santa Clara, and Fairfield-Suisun were contacted and asked to encourage their students to participate in the survey. Towards the end of the recruitment period, environmental science teachers were targeted, as they tended to be more willing to help with the project than others; many of these teachers also agreed to distribute surveys to all of their classes to reduce sample bias. These locations were selected because they fall within the areas that participate in BASMAA.

Initial calls were made to the schools; these were followed-up with an email that recapped the above information, the link to the survey, and a flyer (attached in Appendix B). School faculty and staff were told that BASMAA was working on an anti-littering campaign geared towards youth that leveraged youth as leaders of their communities. They were also informed that a video contest was included as part of the campaign and that the winning video would be aired on television. They were instructed not to inform students that the survey was related to littering in order to minimize bias, and were offered a script to assist in describing the survey to students. The script is available in Appendix C. If schools agreed to participate, they were followed up with 1-2 weeks later if no survey responses from their schools had been added to the database.

No incentives were offered to the schools themselves for distributing survey. However, some schools offered extra credit to students that could be applied towards courses for participation, but most distributed the survey without an incentive.

Additionally, an advertisement on social networking website [www.Facebook.com](http://www.Facebook.com) was placed, targeting youth aged 14-24 living in the counties of Santa Clara, Alameda, San Mateo, Fairfield-Suisun, and Contra Costa. It ran for one month from late February to late March 2012. Content for the ad is attached in Appendix D.

### *Participants*

To participate, individuals had to be 14-24 years of age and residents of zip codes covered by BASMAA. A total of 416 individuals began the survey; these included preview results (i.e., school administrators who “previewed” the survey before distributing to students), which were not identifiable in the data other than by applying inclusion and exclusion criteria. The initial sample size goal of  $n=500$  was designed to account for attrition and provide sufficient statistical power for the detection of changes in littering behavior from baseline to follow-up. Of the 416 respondents who began the survey, 34 were excluded because they completed less than 10% of survey questions (in most cases, individuals completed less than 2 questions). A total of 25 respondents were ineligible for the survey because they were older than 24 years, younger than 14 years of age, or did not provide their date of birth. In addition, 4 participants were excluded for residing outside of the bay area or failing to provide their zip code. The final sample included 353 participants.

The sample included more females than males (41% male). The mean age of respondents was approximately 17 years old ( $SD = 1.37$ ). The majority (97%) of respondents identified as high school

students. Just over 3% identified as community college students, one identified as a 4-year college student, and one was not a student. The sample had a mean high school GPA of 3.26, which is somewhat above a “B” average. This suggests that the sample consisted largely of high school students performing at an above average academic level. See table 1 for details.

Table 1. Demographic characteristics of sample (N=353).

Gender (% male)	41.36
Mean age in years (SD)	17.03 (1.37)
Student status	%
High school	96.6
Community college	2.8
4-year college	0.3
Trade school	0.0
Graduate school	0.0
Not a student	0.3
Mean high school GPA (SD)	3.26 (0.70)

#### 4. Analysis approach

The goal of the baseline survey was to describe baseline levels of littering behavior and perceived social norms among youth living in the Bay Area. Analyses were limited to eligible individuals (n=353), and addressed the following specific questions:

- What types of litter were most commonly and least commonly littered?
- In what contexts were respondents relatively more likely to litter?
- What did technology saturation look like in the sample?
- To what extent were respondents willing to participate in campaign activities?
- What did participants perceive as barriers to littering?
- To what extent did respondents disapprove of their own and their friends’ littering behavior?
- How was willingness to participate in campaign activities related to environmental concern and perceived social and personal norms?
- What was the relationship between future likelihood of littering and environmental concern and perceived social and personal norms?

#### 5. Results

Respondents answered a number of questions about their access to various devices and frequency with which they accessed internet-based services. The vast majority of the sample (91%) had a cell phone; 61% with a cell phone had a “smart” phone. Additionally, 88% of the sample had computer access at home. Only about one quarter of the sample had access to a tablet device (e.g., iPad). Respondents were heavy users of internet-based services. Respondents were defined as either regular users who used a given service at least once weekly (once per week, 2-3 times per week, daily) versus infrequent users who accessed a given service less than weekly (2-3 times per month, once per month, less than once per month, never). Internet use was ubiquitous among the sample: over 95% of the sample used the Internet at least weekly. As well, 86% of the sample used Facebook

at least once per week, and 82% checked email weekly. Three-quarters of the sample used YouTube weekly, and fewer respondents used blogs (37%) and Twitter (24%). See Table 2 for details.

Table 2. Technology access and frequency of Internet service use.

Device type	% with access	
Cell phone	91	
Basic cell	29	
Smart phone	61	
Computer	88	
Tablet	26	
Internet service type	Less than weekly (%)	Weekly or more (%)
Search internet	4.89	95.11
Use Facebook	14.00	86.00
Check email	17.71	82.29
Use YouTube	28.16	71.84
Read or write blogs	63.40	36.60
Use Twitter	76.22	23.78

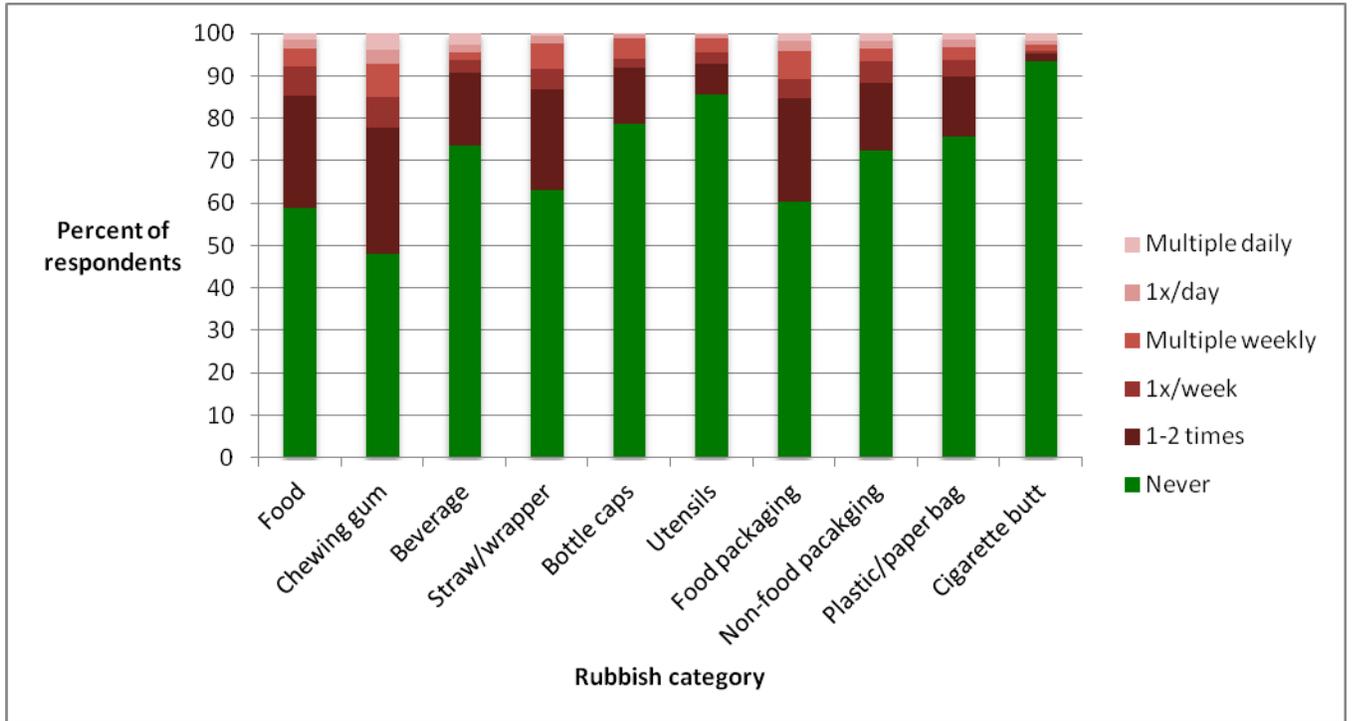
<sup>a</sup> Reflects general type of user: regular user vs. sporadic user.

#### Types of Litter

Frequency of littering differs across distinct litter items. The survey assessed frequency of past month littering for various rubbish categories. Past month was selected as the time scale to a) provide an opportunity to “catch” littering behavior that may be infrequent and b) tap into regular behavior. Approximately 86% of respondents reported littering at least one item in the past month. The results are displayed in figure 1 below. As can be seen in the figure, the most common frequency of littering across all categories of rubbish was “never”. However, prevalence of littering at all (i.e., at least once in the past month) varied considerably among rubbish categories. The most commonly littered item was chewing gum, which 52% of respondents reported littering at least once in the past month. Of these, approximately 43% reported littering gum at least weekly. Next, 41% of respondents reported littering food waste at least once in the past month. Of these, only 36% littered weekly or more. Finally, 40% of respondents said that they littered food or beverage-related packaging at least once in the past month; of these, 42% littered packaging weekly or more. The least commonly littered item was cigarette butts: only 7% of respondents littered these in the past month. However, of the youth who littered cigarette butts at all, 74% did so weekly or more. It is likely that the low prevalence of cigarette butt littering is related strongly to prevalence of smoking rather than littering per se (no screening question was included to assess smoking status). Following cigarette butts as the second and third least littered items were disposable utensils (86% never littered in past month) and bottle caps (79% never littered in past month). Taken together, the results indicate that the majority of the sample littered regularly. Although the most common past-month frequency of littering for each rubbish type was “never”, the proportion of respondents who littered at least once varied widely (from 7% for cigarette butts to 52% for chewing gum). This indicates that littering is a heterogeneous behavior that is specific to type of rubbish. Littering items from individual rubbish categories may be most appropriately conceptualized as separate target behaviors, and different intervention strategies may need to be applied to these different target behaviors. Additionally, among those who littered an item at least once in the past month, frequency

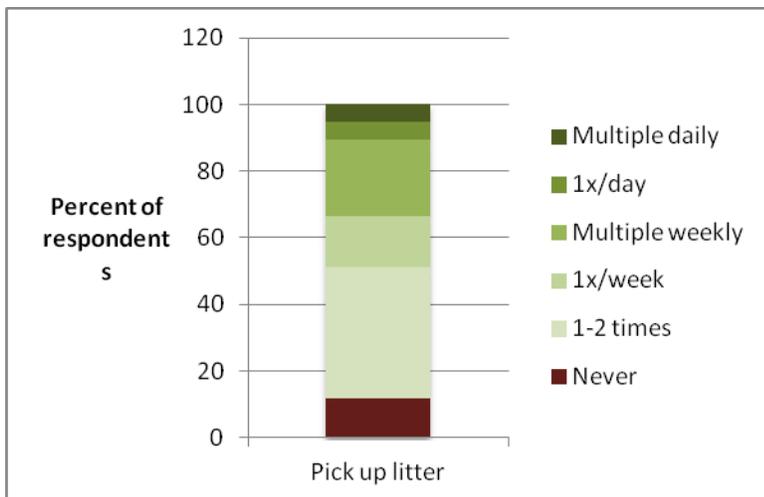
of littering was relatively low across items, but also varied widely: the prevalence of littering items once per week or more ranged from 35% for beverage containers to 43% for chewing gum to 74% for cigarette butts. Again, this suggests that littering different types of rubbish may best be thought of as distinct behaviors.

Figure 1. Frequency of past month littering for various rubbish categories.



Respondents were also asked how frequently they picked up litter that was not theirs in the past month. 88% of respondents indicated that they did so at least once. The most common response was 1-2 times at 39%, and, notably, nearly half of respondents reported picking up litter that was not theirs at least weekly. See figure 2 for details.

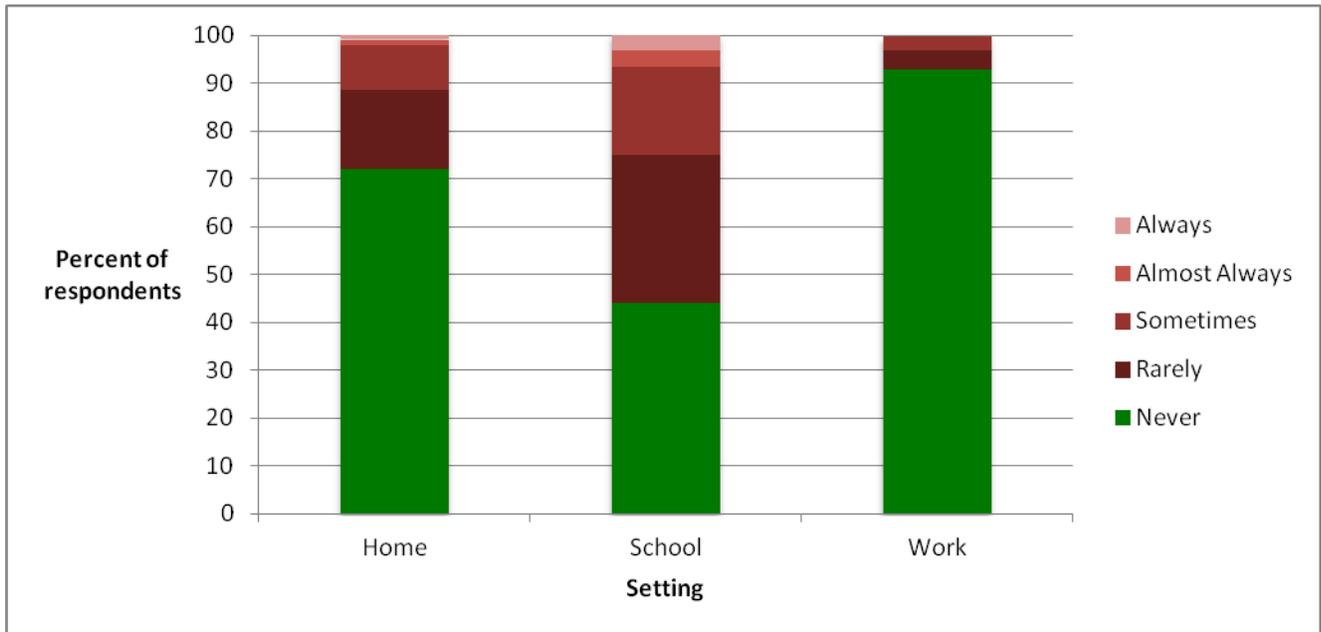
Figure 2. Frequency of picking up someone else’s litter in the past month.



*Littering situations*

Previous studies of littering have found that littering frequency is related to context and setting. To explore this in the present sample, respondents were asked a series of questions related to the frequency with which they littered in different settings. Figure 3 displays the results for three common contexts: home, school, and work. The results show that littering at work was quite infrequent, with about 93% of respondents indicating they never litter at work. At school, the most common response was ‘never’; however, littering at school was more common relative to other settings: 25% of respondents littered at least sometimes at school. This suggests that campaign efforts at schools may be a prime target for intervention efforts.

Figure 3. Frequency distributions for littering at home (n=335), school (n=335), and work (n=287).



*Barriers to littering*

Respondents were asked to indicate which of several options served as barriers that prevented them from littering. Results are detailed in table 3 below. Briefly, the vast majority of the sample (91%) indicated that trash/recycling can placement deterred them from littering. The next most commonly endorsed response was that 71% of respondents would feel guilty if they littered. Next, 63% of respondents stated that they wanted to keep a certain area clean.

Table 3. Proportion of respondents who endorsed various perceive barriers to littering

Perceived Barrier	%
Trash cans/recycling bins near	91
I'd feel guilty	71
I want to keep area clean	63
Others would complain	54
Area already litter- free	45
No clean up crew	32
Anti-litter signs posted	22

*Social Interactions and Social Norms*

One of the campaign goals was to promote peer-to-peer interactions regarding litter. Toward this end, the survey assessed baseline frequency and impact of conversations about littering. Approximately one third of the sample also reported that they spoke with friends about littering in the past month, and of these, half stated that the conversations made them think littering was an important issue. Only 3% said that the conversations made them think littering was not an important issue, 21% said their opinion were not influenced, and 25% said that different friends had different influences on their opinions. These data will be used as a baseline against which comparisons are made using follow-up survey data.

The survey assessed social and personal norms concerning littering. First, respondents were asked how frequently they thought their friends littered. Response options were never, rarely, sometimes, frequently, all the time. Results were fairly normally distributed, with the most common response being “sometimes”, and the extremes being the least endorsed options. Next, respondents gave ratings related to social (dis)approval related to littering. Respondents rated their level of approval of friends’ littering. The mean score indicated that respondents slightly disapproved of friends littering. When asked to appraise their own (self) littering, respondents’ disapproval was greater than that of their friends, on average. In other words, respondents disapproved more of their own littering behavior than their friends’ littering behavior. Finally, respondents were asked to what extent their friends would disapprove of [respondents] littering. Notably, the modal response was that friends would neither approve nor disapprove of littering. Whereas respondents tended to disapprove of their own littering and their friends littering, their perception, on average, was that friends would not have strong opinions if they (the respondent) littered. This may be related to the psychological phenomenon called illusory superiority, whereby people overestimate their positive qualities and underestimate their shortcomings. In any case, the results suggest the value of leveraging personal norms in the anti-littering campaign. Results are detailed in table 4.

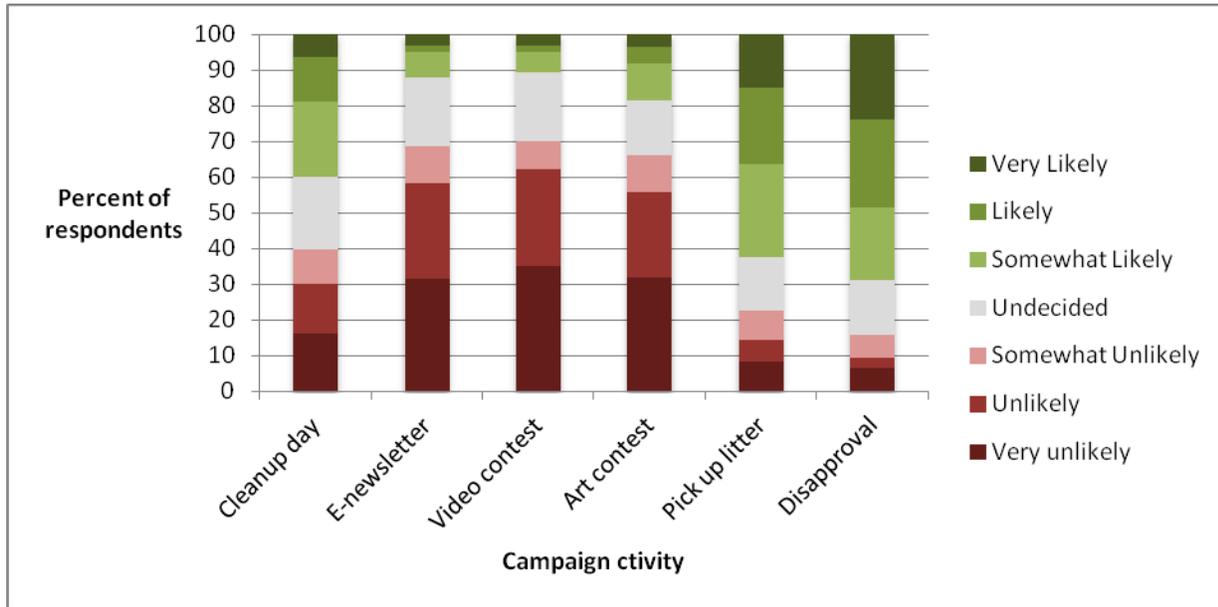
Table 4. Mean self-and social approval ratings related to littering.

<b>Approval rating of friends’ littering</b>	<b>2.63 (1.18)</b>
<b>Self-approval rating</b>	<b>2.30 (1.17)</b>
<b>Estimated friend approval rating of respondent littering</b>	<b>3.31 (1.13)</b>

Table note. Responses were rated on a 1 (strongly disapprove ) - 7 (strongly approve) scale, so a “4” indicates a neutral score, scores lower than 4 indicate disapproval, and scores higher than 4 indicate approval.

*Key outcomes: Willingness to participate in campaign activities & Likelihood of littering next month*  
 Among the key outcomes assessed were willingness to participate in campaign activities, and likelihood of littering in the next month. Respondents were asked to rate their likelihood of participating in a number of activities related to the campaign. Results are displayed below in figure 4. The activity that most respondents were at least somewhat likely to do was to express disapproval if s/he saw a friend littering:, 69% of respondents reported they were at least somewhat likely to do so. Additionally, 62% of respondents were at least somewhat likely to pick up litter that was not their own, and 40% were at least somewhat likely to participate in a litter cleanup day.

Figure 4. Frequency distributions for willingness to participate in campaign activities.



Respondents also rated their likelihood of littering in the next month on a 7-point Likert scale ranging from (1) Very unlikely - (7) Very Likely. The mean score was 2.79 (SD=1.67), meaning that on average, respondents rated themselves as unlikely to litter. In fact, two thirds of respondents were at least somewhat unlikely to litter.

*Inferential tests*

Whereas the above analyses were all descriptive, we also examined inferential relationships between variables using linear multiple regression analyses. In particular, we examined predictors of eight prosocial outcomes (numbers 1-6 are campaign activities):

1. Intentions of volunteering for a litter cleanup day
2. Intentions of signing up for email newsletter
3. Intentions of entering video contest
4. Intentions of entering art contest
5. Intentions of picking up someone else’s litter
6. Intentions of saying something to express disapproval or try to stop a friend from littering
7. Intentions of littering in the next month
8. Frequency of picking up someone else’s litter in the past month

Potential predictors included: age (coded as continuous), gender (1=male, 2=female), high school GPA (coded as continuous on a 4.0 scale), guilt as a perceived barrier to littering (0=no, 1=yes), level

of environmental concern<sup>3</sup> (rated on a 1-7 Likert scale where 1=low and 7=high), self-approval rating of past littering behavior (self-disapproval; rated on a 1-7 Likert scale where 1=strongly disapprove and 7=strongly approve), approval rating of friends littering (disapproval of friends; rated on a 1-7 Likert scale where 1=strongly disapprove and 7=strongly approve), and estimated friends' approval of self (respondent) littering (perceived friend disapproval; rated on a 1-7 Likert scale where 1=strongly disapprove and 7=strongly approve).

The dataset was limited to the 302 individuals who had complete data on all outcome and potential predictor variables. A step-wise model building procedure was used to construct final regression models: preliminary linear multiple regression models were run to identify important predictors for retention in final models, and then final models were run. For the preliminary models, potential predictors were broken down into conceptual blocks: demographics (including age, gender, and high school GPA) and norms (self-disapproval, disapproval of friends, and perceived friend disapproval). Additionally, environmental concern and guilt as a barrier to littering were tested separately as potential covariates. Each outcome was regressed on each of the conceptual blocks as well as the two covariates separately. In total, four separate preliminary models were run for each outcome. A decision criterion was applied for retaining predictors in the final models: a predictor that was significantly related to any outcome in a preliminary model was retained in the final model for all outcomes. This method was chosen so that all final models were based on the same set of predictors. Following this rule, age and injunctive norm<sup>4</sup> were dropped; the rest of the predictors were significantly related to at least one outcome in the preliminary models and therefore retained in final models. Appendix E displays the correlations among all outcome and predictor variables excluding demographics.

The final linear multiple regression models were then run with each of the eight prosocial outcomes regressed on the same set of predictors. Table 5 displays the standardized regression coefficients for these final models. All final models were significant, meaning that the set of chosen predictors was significantly associated with every outcome. Regression results showed that females had stronger anti-litter intentions than did males: they were significantly less likely to litter in the next month than were males, more likely to enter the art contest, and more likely to express disapproval of friends' littering. GPA was related to only one outcome; a higher GPA significantly predicted lower likelihood of littering in the next month. For every point increase in GPA, likelihood of littering in the next month declined by .15 standard deviation units. Not surprisingly, level of environmental concern was related to nearly all outcomes in the predicted direction with small - moderate effect sizes: greater level of concern was significantly associated with higher likelihood of picking up someone else's litter in the past month, and higher likelihood of participating in all of the campaign activities. Paradoxically, it was not related to likelihood of littering in the next month.

Next, whether participants cited guilt as a barrier to littering was related to likelihood of participating in two campaign activities: if participants reported guilt as a barrier, they were more likely to sign up for the e-newsletter and pick up someone else's litter. Disapproval of friends'

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<sup>3</sup> Environmental concern was assessed using a single item that asked participants to rate their level of agreement with the following statement: "Environmental issues are important to me". Responses were provided on a 1-7 Likert scale ranging from Strongly Disagree (1) to Strongly Agree (7).

<sup>4</sup> Injunctive norm: people's perceptions of what is commonly approved or disapproved of within a particular culture.

littering behavior was significantly related to likelihood of littering in the next month, willingness to participate in the campaign’s art contest, and willingness to express disapproval of a friend who litters. Specifically, greater disapproval of friends’ littering was associated with lower intentions of littering in the next month. As well, the greater the disapproval, the more willing a respondent was to express disapproval towards a friend who was littering. One odd finding was that a lower level of disapproval of friends’ littering was associated with greater willingness to participate in the campaign video contest. This could be a spurious relationship, or perhaps those who strongly disapprove of friends littering are simply unlikely to participate in the video contest because they prefer to focus their energies on alternate anti-litter strategies. Finally, higher levels of self-disapproval were associated with greater willingness to express disapproval of friends’ littering behavior, and lower likelihood of littering in the next month.

Summarizing, probably the most important outcome was likelihood of littering in the next month; this was lower among females, those with relatively higher high school GPAs, and those who had stronger disapproval ratings of their own and their friends’ littering behavior. As gender and GPA are not amenable to intervention, these results suggests that interventions that can beget a sense of disapproval of self and others’ littering behavior may show promise for minimizing littering, at least in the short term.

Table 5. Standardized regression beta weights for final models (n=302).

Predictor	Outcome							
	Pick up past month	Likelihood litter next month	Clean up day	E-news-letter	Video contest	Art contest	Pick up else’s litter	Express Disapproval
Gender <sup>a</sup>	-0.12 (p<.06)	-0.11 (p<.05)	0.06 (p<.31)	0.10 (p<.88)	0.004 (p<.95)	0.20 (p<.002)	0.07 (p<.24)	0.20 (p<.0001)
GPA	-0.04 (p<.57)	-0.15 p<.01	0.05 (p<.36)	0.001 p=.99	-0.06 p<.32	-0.01 (p<.93)	0.02 (p<.67)	0.05 (p<.32)
Environmental concern	0.20 (p<.01)	0.02 (p<.83)	0.15 (p<.02)	0.29 (p<.0001)	0.30 (p<.0001)	0.12 (p<.05)	0.24 (p<.0001)	0.20 (p<.0001)
Guilt	0.07 (p<.31)	-0.09 (p<.10)	0.050 (p<.39)	0.14 (p<.03)	0.09 (p<.17)	0.01 (p<.88)	0.17 (p<.004)	0.05 (p<.36)
Disapproval of friends	-0.11 (p<.17)	0.24 (p<.001)	-0.06 (p<.42)	0.02 (p<.86)	0.17 (p<.04)	0.02 (p<.77)	-0.13 (p<.07)	-0.28 (p<.0001)
Self-disapproval	0.06 (p<.42)	0.15 (p<.03)	-0.14 (p<.07)	0.09 (p<.23)	-0.03 (p<.68)	-0.03 (p<.75)	-0.07 (p<.32)	-0.13 (p<.05)
Model F	3.29 p<.003	16.48 p<.0001	6.25 P<.0001	5.23 p<.0001	4.76 p<.0001	3.19 p<.005	13.36 p<.0001	27.73 p<.0001
Model R <sup>2</sup>	.0663	.2624	.1189	.1014	.0932	.0645	.2239	.3744

Table note: Standardized betas are reported. Green highlighting indicates result is significant at the .05 level.

<sup>a</sup>1=male; 2=female.

## 6. Conclusions

The goal of this project was to assess and describe littering behavior and perceived social norms related to littering among youth living in the Bay Area, thereby establishing a baseline from which the efficacy of the ensuing campaigns could be judged. The data collected stand alone to characterize Bay Area youth, and also will serve as a baseline against which data from a future follow-up survey will be compared following outreach campaign implementation.

In terms of past month littering prevalence, 86% of respondents reported littering at least one item in the past month. The most commonly littered items were chewing gum, food waste, and food or beverage-related packaging. The least commonly littered items included cigarette butts, disposable utensils, and bottle caps. Although the most common past-month frequency of littering for each rubbish type was “never”, the proportion of respondents who littered at least once varied widely (from 7% for cigarette butts to 52% for chewing gum). Similarly, among those who littered an item at least once in the past month, frequency of littering was relatively low across items, but also varied widely: the prevalence of littering items once per week or more ranged from 35% for beverage containers to 43% for chewing gum to 74% for cigarette butts. This shows that littering is a heterogeneous behavior that is specific to type of rubbish. Littering items from individual rubbish categories may be most appropriately conceptualized as separate target behaviors.

Previous work has found that littering frequency is related to context and setting. Littering at school was more common relative to other settings: 25% of respondents littered at least sometimes at school. This suggests that campaign efforts at schools may be a prime target for intervention efforts.

Perceived barriers to littering were also assessed by the survey. The vast majority of the sample (91%) indicated that trash/recycling can placement deterred them from littering. The next most commonly endorsed response was that 71% of respondents would feel guilty if they littered.

In terms of prosocial behavior, 88% of respondents indicated that they pick up trash that was not their own at least once in the past month. Respondents also rated their likelihood of littering in the next month on a 7-point Likert scale ranging from (1) Very unlikely - (7) Very Likely. The mean score was 2.79 (SD=1.67), meaning that on average, respondents rated themselves as unlikely to litter. In fact, two thirds of respondents were at least somewhat unlikely to litter.

Respondents also rated their likelihood of participating in a number of activities related to the campaign. The activity that most respondents were at least somewhat likely to do was expressing disapproval if s/he saw a friend littering; 69% of respondents reported they were at least somewhat likely to do so. Additionally, 62% of respondents were at least somewhat likely to pick up litter that was not their own, and 40% were at least somewhat likely to participate in a litter cleanup day. These behaviors may be “low hanging fruit” for intervention programs.

Finally, a series of regression models were run to predict eight prosocial outcomes (past month frequency of picking up others’ litter, intentions of littering in the next month, and likelihood of participating in each of six campaign activities) based on demographics, guilt as a barrier to littering, level of environmental concern, and personal and social norms. Summarizing, females, those with relatively higher high school GPAs, and those who had stronger disapproval ratings of their own and

their friends' littering behavior were significantly associated with several prosocial outcomes in the desired direction, with small to moderate effect sizes. As gender and GPA are not amenable to intervention, the findings suggests that interventions that can beget a sense of disapproval of self and others' littering behavior may show promise for minimizing littering, at least in the short term.

Appendix A: Survey

Q1 Hello! Thank you for your interest in our campaign. Please respond to the following questions as honestly as possible. Your answers will remain confidential. There are no right or wrong answers; we are interested in hearing about your true opinions!

What is your birthday? MM/DD/YYYY

What is your gender?

- Male (1)
- Female (2)

What is your home zip code?

Please indicate your current status.

- I am a high school student. (1)
- I am a student at a 4-year university (2)
- I am a community college student (3)
- I am a trade school student (4)
- I am a graduate student (5)
- I am not a student (6)

Answer If Please indicate your current status. I am not a student Is Not Selected

Please indicate which school you attend.

Answer If Please indicate your current status. I am a high school student. Is Selected

What is your high school GPA (e.g., 3.1)?

Answer If Please indicate your current status. I am a student at a 4-year university Is Selected Or Please indicate your current status. I am a community college student Is Selected Or Please indicate your current status. I am a trade school student Is Selected Or Please indicate your current status. I am a graduate student Is Selected

What is your current GPA (e.g., 3.1)?

What are the initials of your first and last name? For example, John Smith = JS.(If you have multiple first or last names, use the initials of your first first name and first last name. For example: Maria Eugenia Garcia Alvarez = MG.)

Which of the following do you have access to (select all that apply)?

- Basic cell phone without internet access (1)
- Smart phone (e.g., iPhone, Blackberry, Droid) with internet access (2)
- Desktop or laptop computer with internet connection at home (3)
- Tablet device with internet (e.g., iPad) (4)

How often do you do the following?

Search for things online/ on the internet (1)	<input type="radio"/>						
Check email (2)	<input type="radio"/>						
Use Facebook (3)	<input type="radio"/>						
Use Twitter (4)	<input type="radio"/>						
Check out or post videos on Youtube (5)	<input type="radio"/>						
Read or write Blogs (6)	<input type="radio"/>						
Use other internet-based service (please specify) (7)	<input type="radio"/>						

Environmental issues are important to me.

- Strongly Disagree (1)
- Disagree (2)
- Somewhat Disagree (3)
- Neither Agree nor Disagree (4)
- Somewhat Agree (5)
- Agree (6)
- Strongly Agree (7)

This survey asks questions about littering, which is defined as: Any waste item that is discarded, placed, thrown, or dropped in a public or private area, and is not immediately removed. This includes waste items large and small, discarded intentionally or accidentally. In short, litter is waste in the wrong place!

In the past month, how often have you littered each of the following items?

Food (1)	<input type="radio"/>					
Chewing gum (2)	<input type="radio"/>					
Beverage bottles, cans, cups, and/or cartons (3)	<input type="radio"/>					
Straw or straw wrapper (4)	<input type="radio"/>					
Bottle caps (5)	<input type="radio"/>					
Disposable utensils (e.g., forks, spoons) (6)	<input type="radio"/>					
Wrappers, bags, or other food or beverage packaging (7)	<input type="radio"/>					
Packaging from non-food or beverage items (8)	<input type="radio"/>					
Plastic or paper bag (9)	<input type="radio"/>					
Cigarette butts (10)	<input type="radio"/>					
Other (please specify) (11)	<input type="radio"/>					

In the past month, how often have you picked up a piece of litter that was not yours and disposed of it?

- Never (1)
- Maybe 1-2 times (2)
- About one time per week (3)
- A few times per week (4)
- About one time per day (5)
- Multiple times per day (6)

People may or may not litter in different situations. Please indicate how frequently you litter in each of the following situations:

Prior to / after eating or drinking something (1)	<input type="radio"/>					
When I have to put out my cigarette (2)	<input type="radio"/>					
When I'm in a vehicle (3)	<input type="radio"/>					
At home (4)	<input type="radio"/>					
At school (5)	<input type="radio"/>					
At work (6)	<input type="radio"/>					
Other (please specify) (7)	<input type="radio"/>					

What prevents you from littering (select all that apply)?

- Trash cans / recycling bins are nearby (1)
- There are anti-litter signs posted (2)
- When an area is already litter-free (3)
- When I feel that I want to keep a certain area clean (4)
- Friends, family, or others would complain about my behavior if I littered (5)
- I know there is no clean-up crew for a given area (6)
- I would feel guilty if I littered (7)
- Other (please specify) (8) \_\_\_\_\_

How often do you think your friends litter?

- Never (1)
- Rarely (2)
- Sometimes (3)
- Frequently (4)
- All the time (5)

When I see my friends littering, I \_\_\_\_\_ of their behavior.

- Strongly disapprove (1)
- Disapprove (2)
- Somewhat Disapprove (3)
- Neither approve nor disapprove (4)
- Somewhat approve (5)
- Approve (6)
- Strongly approve (7)

If my friends saw me litter, they would \_\_\_\_\_ of my behavior.

- Strongly disapprove (1)
- Disapprove (2)
- Somewhat Disapprove (3)
- Neither approve nor disapprove (4)
- Somewhat approve (5)
- Approve (6)
- Strongly approve (7)

When I think of times that I have littered, I \_\_\_\_\_ of my behavior.

- Strongly disapprove (1)
- Disapprove (2)
- Somewhat Disapprove (3)
- Neither approve nor disapprove (4)
- Somewhat approve (5)
- Approve (6)
- Strongly approve (7)

In the past month, have you spoken with friends about littering?

- No (1)
- Yes (2)

Answer If In the past month, have you spoken with friends about lit... Yes Is Selected

How do you think these conversations influenced your opinions about littering/

- They made me think that littering is an important issue (1)
- They made me think littering is not an important issue (2)
- They didn't influence my opinion about littering (3)
- It depended who I was talking to; different friends had different effects (4)

In the next month, how likely is it that you will litter? Remember, litter is defined as discarding, placing, throwing, or dropping any waste item in a public or private area and not immediately removing it. This includes waste items large and small, discarded intentionally or accidentally.

- Very Unlikely (1)
- Unlikely (2)
- Somewhat Unlikely (3)
- Undecided (4)
- Somewhat Likely (5)
- Likely (6)
- Very Likely (7)

How willing are you to participate in the following activities?

Volunteer for a litter cleanup day (1)	<input type="radio"/>						
Sign up for our campaign email newsletter (2)	<input type="radio"/>						
Enter the video contest for our campaign (3)	<input type="radio"/>						
Enter an art contest that is part of the campaign (4)	<input type="radio"/>						
Pick up someone else's litter (5)	<input type="radio"/>						
If I see a friend littering, say something to express disapproval or try to stop her/him from littering (6)	<input type="radio"/>						

We may want to follow up with you in the future to see if your opinions of littering have changed. Please provide your contact information below. Your privacy will be respected and the information you provide will not be shared with anyone outside of the survey team.

Email (1)

Cell Phone (xxx-xxx-xxxx) (2)

Home Phone (xxx-xxx-xxxx) (3)

If you need proof of survey participation, you must do the following:1. Confirm your email address below2. Print out this page & take it to your teacher or supervisor3. Hit the next button to end the survey. If you DO NOT need proof of participation, hit the next button to end this survey.

Email confirmation (1)

## BASMAA Survey Report

Question: Year born	Count (%) n=353	Gender	
		Male n= 146	Female n= 207
1988	2 (0.57)	1 (0.68)	1 (0.48)
1989	1 (0.28)	0 (0.00)	1 (0.48)
1990	2 (0.57)	0 (0.00)	2 (0.97)
1991	2 (0.57)	1 (0.68)	1 (0.48)
1992	3 (0.85)	0 (0.00)	3 (1.45)
1993	21 (5.95)	11 (7.53)	10 (4.83)
1994	94 (26.63)	37 (25.34)	57 (27.54)
1995	92 (26.06)	36 (24.66)	56 (27.05)
1996	100 (28.33)	44 (30.14)	56 (27.05)
1997	36 (10.20)	16 (10.96)	20 (9.66)

Question: What is your gender	Count (%) n=353
Male	146 (41.36)
Female	207 (58.64)

Question: Please indicate current status	Count (%) n=353	Gender	
		Male n= 146	Female n= 207
I am a high school student	341 (96.60)	144 (98.63)	197 (95.17)
I am a student at a 4-year university	1 (0.28)	0 (0.00)	1 (0.48)
I am a community college student	10 (2.83)	2 (1.37)	8 (3.86)
I am a trade school student	0 (0.00)	0 (0.00)	0 (0.00)
I am a graduate student	0 (0.00)	0 (0.00)	0 (0.00)

I am not a student	1 (0.28)	0 (0.00)	1 (0.48)
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Question: Please indicate which school you attend.	Count (%) n=350	Gender	
		Male n= 145	Female n= 205
Alameda High School	3 (0.86)	0 (0.00)	3 (1.47)
Carlmont High School	39 (11.14)	20 (13.80)	19 (9.28)
Chabot College	2 (0.57)	1 (0.69)	1 (0.49)
Evergreen	1 (0.21)	1 (0.69)	0 (0.00)
Fairfield High School	107 (30.56)	46 (31.73)	61 (29.76)
Indpendence High School	10 (2.86)	6 (4.14)	4 (1.95)
Jesse Bethel High School	2 (0.57)	1 (0.69)	1 (0.49)
Las Positas Community College	5 (1.43)	0 (0.00)	5 (2.45)
Oceana High School	100 (28.56)	41 (28.28)	59 (28.79)
Ohlone College	1 (0.29)	0 (0.00)	1 (0.49)
Redwood High School	9 (2.57)	2 (1.38)	7 (3.42)
San Leandro High School	1 (0.29)	0 (0.00)	1 (0.49)
Sequoia High School	29 (8.29)	9 (6.21)	20 (9.76)
University of California-Berkeley	1 (0.21)	0 (0.00)	1 (0.49)
Woodside High School	35 (10.00)	15 (10.35)	20 (9.77)
Other	5 (1.43)	3 (2.07)	2 (0.98)

Question	Mean n=331	Gender	
		Male n= 139	Female n= 192
What is your high school GPA?	3.26	3.10	3.38

Question	Mean n=10	Gender	
		Male	Female

	n=10	n= 2	n= 8
What is your current GPA?	3.34	2.85	3.46

Question: Which of the following do you have access to (select all that apply)	Count n=752	Gender	
		Male n= 311	Female n= 441
Basic cell phone without internet access	130	59	71
Smart phone (e.g., iPhone, Blackberry, Droid) with internet access	217	88	129
Desktop or laptop computer with internet connection at home	312	128	184
Tablet device with internet (e.g., iPad)	93	36	57

Question: How often do you do the following?	Count (%)	Gender	
		Male	Female
Search for things online/on the internet	<b>n = 348</b>	<b>n = 144</b>	<b>n = 204</b>
Never	0 (0.00)	0 (0.00)	0 (0.00)
Less than Once a Month	2 (0.57)	0 (0.00)	2 (0.98)
Once a Month	3 (0.86)	1 (0.69)	2 (0.98)
2-3 Times a Month	12 (3.45)	6 (4.17)	6 (2.94)
Once a Week	15 (4.31)	9 (6.25)	6 (2.94)
2-3 Times a Week	74 (21.26)	37 (25.69)	37 (18.14)
Daily	242 (69.54)	91 (63.19)	151 (74.02)
Check email	<b>n = 350</b>	<b>n = 144</b>	<b>n = 206</b>
Never	8 (2.29)	6 (4.17)	2 (0.97)
Less than Once a Month	16 (4.57)	9 (6.25)	7 (3.40)
Once a Month	13 (3.71)	5 (3.47)	8 (3.88)
2-3 Times a Month	25 (7.14)	14 (9.72)	11 (5.34)
Once a Week	50 (14.29)	25 (17.36)	25 (12.14)
2-3 Times a Week	80 (22.86)	32 (22.22)	48 (23.30)
Daily	158 (45.15)	53 (36.81)	105 (50.97)
Use Facebook	<b>n = 350</b>	<b>n = 144</b>	<b>n = 205</b>

Never	37 (10.57)	21 (14.58)	16 (7.77)
Less than Once a Month	4 (1.14)	2 (1.39)	2 (0.97)
Once a Month	1 (0.29)	1 (0.69)	0 (0.00)
2-3 Times a Month	7 (2.00)	3 (2.08)	4 (1.94)
Once a Week	16 (4.57)	7 (4.86)	9 (4.37)
2-3 Times a Week	44 (12.57)	20 (13.89)	24 (11.65)
Daily	241 (68.86)	90 (62.50)	151 (73.30)
<b>Use Twitter</b>	<b>n = 349</b>	<b>n = 143</b>	<b>n = 206</b>
Never	243 (69.63)	114 (79.72)	129 (62.62)
Less than Once a Month	15 (4.30)	2 (1.40)	13 (6.31)
Once a Month	4 (1.15)	2 (1.40)	2 (0.97)
2-3 Times a Month	4 (1.15)	2 (1.40)	2 (0.97)
Once a Week	8 (2.29)	1 (0.70)	7 (3.40)
2-3 Times a Week	14 (4.01)	1 (0.70)	13 (6.31)
Daily	61 (17.48)	21 (14.69)	40 (19.42)
<b>Check out or post videos on Youtube</b>	<b>n = 348</b>	<b>n = 143</b>	<b>n = 205</b>
Never	40 (11.49)	11 (7.69)	29 (14.15)
Less than Once a Month	23 (6.61)	7 (4.90)	16 (7.80)
Once a Month	13 (3.74)	3 (2.10)	10 (4.88)
2-3 Times a Month	22 (6.32)	8 (5.59)	14 (6.83)
Once a Week	32 (9.20)	9 (6.29)	23 (11.22)
2-3 Times a Week	89 (25.57)	34 (23.78)	55 (26.83)
Daily	129 (37.07)	71 (49.65)	58 (28.29)
<b>Read or write Blogs</b>	<b>n = 347</b>	<b>n = 142</b>	<b>n = 205</b>
Never	157 (45.24)	77 (54.23)	80 (39.02)
Less than Once a Month	37 (10.66)	13 (9.15)	24 (11.71)
Once a Month	16 (4.61)	8 (5.63)	8 (3.90)
2-3 Times a Month	10 (2.88)	4 (2.82)	6 (2.93)
Once a Week	22 (6.34)	9 (6.34)	13 (6.34)
2-3 Times a Week	35 (10.09)	10 (7.04)	25 (12.20)
Daily	70 (20.17)	21 (14.79)	49 (23.90)
<b>Use other internet-based service (please specify)</b>	<b>n = 256</b>	<b>n = 112</b>	<b>n = 144</b>

Never	152 (59.38)	68 (60.71)	84 (58.33)
Less than Once a Month	4 (1.56)	2 (1.79)	2 (1.39)
Once a Month	2 (0.78)	1 (0.89)	1 (0.69)
2-3 Times a Month	7 (2.73)	4 (3.57)	3 (2.08)
Once a Week	6 (2.34)	3 (2.68)	3 (2.08)
2-3 Times a Week	12 (4.69)	4 (3.57)	8 (5.56)
Daily	73 (28.520)	30 (26.79)	43 (29.86)

- Specific answers:
- Aim
  - AT&T
  - craigslist.com
  - Deviant art. Art posting site
  - Everything
  - formspring
  - Forum
  - games
  - goodreads, blackboard
  - google
  - google +
  - Grades
  - hulu
  - Infinite Campus, etc
  - Instagram
  - Internet shopping
  - ipod
  - kids.yahoo
  - Lap Top
  - livemocha
  - Music Sites(grooveshark.com
  - Nuts
  - Online classes
  - Online video games
  - Other social networks, forums
  - pandora.com

plastation network  
 porn  
 read biographies  
 read manga  
 Read Online Articles  
 Reading and playing games  
 reddit  
 shopping  
 Skype  
 spanish translator  
 sports  
 Study online  
 Tumblr  
 Video Games  
 watch anime  
 watch drama  
 Webcomics  
 WorldStarHipHop  
 Xbox Time  
 yahoo  
 youtube.com

Question: Environmental issues are important to me	Count (%) n= 346	Gender	
		Male n= 143	Female n= 203
Strongly Disagree	4 (1.16)	1 (0.70)	3 (1.48)
Disagree	4 (1.16)	3 (2.10)	1 (0.49)
Somewhat Disagree	2 (0.58)	2 (1.40)	0 (0.00)
Neither Agree nor Disagree	20 (5.78)	11 (7.69)	9 (4.43)
Somewhat Agree	68 (19.65)	35 (24.48)	33 (16.26)
Agree	170 (49.13)	65 (45.45)	105 (51.72)
Strongly Agree	78 (22.54)	26 (18.18)	52 (25.62)

Question: In the past month, how often have you littered each of the following items?	Count (%)	Gender	
		Male	Female
<b>Food</b>	<b>n = 347</b>	<b>n = 143</b>	<b>n = 204</b>
Never	204 (58.79)	79 (55.24)	125 (61.27)
Maybe 1-2 times	92 (26.51)	40 (27.97)	52 (25.49)
About one time per week	24 (6.92)	11 (7.69)	13 (6.37)
A few times per week	15 (4.32)	8 (5.59)	7 (3.43)
About one time per day	7 (2.02)	1 (0.70)	6 (2.94)
Multiple times per day	5 (1.44)	4 (2.80)	1 (0.49)
<b>Chewing gum</b>	<b>n = 347</b>	<b>n = 143</b>	<b>n = 204</b>
Never	167 (43.13)	57 (39.86)	110 (53.92)
Maybe 1-2 times	103 (29.68)	47 (32.87)	56 (27.45)
About one time per week	25 (7.20)	14 (9.79)	11 (5.39)
A few times per week	27 (7.78)	15 (10.49)	12 (5.88)
About one time per day	12 (3.46)	4 (2.80)	8 (3.92)
Multiple times per day	13 (3.75)	6 (4.20)	7 (3.43)
<b>Beverage bottles, cans, cups, and/or cartons</b>	<b>n = 347</b>	<b>n = 143</b>	<b>n = 204</b>
Never	255 (73.49)	97 (67.83)	158 (77.45)
Maybe 1-2 times	60 (17.29)	28 (19.58)	32 (15.69)
About one time per week	10 (2.88)	6 (4.20)	4 (1.96)
A few times per week	6 (1.73)	5 (3.50)	1 (0.49)
About one time per day	7 (2.02)	2 (1.40)	5 (2.45)
Multiple times per day	9 (2.59)	5 (3.50)	4 (1.96)
<b>Straw or straw wrapper</b>	<b>n = 347</b>	<b>n = 143</b>	<b>n = 204</b>
Never	219 (63.11)	90 (62.94)	129 (63.24)
Maybe 1-2 times	82 (23.63)	31 (21.68)	51 (25.00)
About one time per week	17 (4.90)	6 (4.20)	11 (5.39)
A few times per week	21 (6.05)	15 (10.49)	6 (2.94)
About one time per day	6 (1.73)	1 (0.70)	5 (2.45)
Multiple times per day	2 (0.58)	0 (0.00)	2 (0.98)
<b>Bottle caps</b>	<b>n = 344</b>	<b>n = 141</b>	<b>n = 203</b>

Never	271 (78.78)	103 (73.05)	168 (82.76)
Maybe 1-2 times	45 (13.08)	24 (17.02)	21 (10.34)
About one time per week	7 (2.03)	3 (2.13)	4 (1.97)
A few times per week	17 (4.94)	11 (7.80)	6 (2.96)
About one time per day	3 (0.87)	0 (0.00)	3 (1.48)
Multiple times per day	1 (0.29)	0 (0.00)	1 (0.49)
<b>Disposable utensils (e.g., forks, spoons)</b>	<b>n = 343</b>	<b>n = 142</b>	<b>n = 201</b>
Never	294 (85.71)	120 (84.51)	174 (86.57)
Maybe 1-2 times	24 (7.00)	9 (6.34)	15 (7.46)
About one time per week	10 (2.92)	5 (3.52)	5 (2.49)
A few times per week	11 (3.21)	7 (4.93)	4 (1.99)
About one time per day	3 (0.87)	0 (0.00)	3 (1.49)
Multiple times per day	1 (0.29)	1 (0.70)	0 (0.00)
<b>Wrappers, bags, or other food or beverage packaging</b>	<b>n = 346</b>	<b>n = 142</b>	<b>n = 204</b>
Never	209 (60.40)	84 (59.15)	125 (61.27)
Maybe 1-2 times	84 (24.28)	35 (24.65)	49 (24.02)
About one time per week	16 (4.62)	5 (3.52)	11 (5.39)
A few times per week	22 (6.36)	12 (8.45)	10 (4.90)
About one time per day	9 (2.60)	5 (3.52)	4 (1.96)
Multiple times per day	6 (1.73)	1 (0.70)	5 (2.45)
<b>Packaging from non-food or beverage items</b>	<b>n = 343</b>	<b>n = 141</b>	<b>n = 202</b>
Never	248 (72.30)	95 (67.38)	153 (75.74)
Maybe 1-2 times	55 (16.03)	25 (17.73)	30 (14.85)
About one time per week	17 (4.96)	10 (7.09)	7 (3.47)
A few times per week	11 (3.21)	8 (5.67)	3 (1.49)
About one time per day	6 (1.75)	2 (1.42)	4 (1.98)
Multiple times per day	6 (1.75)	1 (0.71)	5 (2.48)
<b>Plastic or paper bag</b>	<b>n = 343</b>	<b>n = 140</b>	<b>n = 203</b>
Never	259 (75.51)	99 (70.71)	160 (78.82)
Maybe 1-2 times	49 (14.29)	26 (18.57)	23 (11.33)
About one time per week	13 (3.79)	5 (3.57)	8 (3.94)
A few times per week	11 (3.21)	6 (4.29)	5 (2.46)

About one time per day	6 (1.75)	3 (2.14)	3 (1.48)
Multiple times per day	5 (1.46)	1 (0.71)	4 (1.97)
<b>Cigarette butts</b>	<b>n = 345</b>	<b>n = 142</b>	<b>n = 203</b>
Never	322 (93.33)	134 (94.37)	188 (92.61)
Maybe 1-2 times	6 (1.74)	1 (0.70)	5 (2.46)
About one time per week	2 (0.58)	0 (0.00)	2 (0.99)
A few times per week	6 (1.74)	4 (2.82)	2 (0.99)
About one time per day	3 (0.87)	0 (0.00)	3 (1.48)
Multiple times per day	6 (1.74)	3 (2.11)	3 (1.48)
<b>Other (please specify)</b>	<b>n = 171</b>	<b>n = 72</b>	<b>n = 99</b>
Never	161 (94.15)	65 (90.28)	96 (96.97)
Maybe 1-2 times	2 (1.17)	1 (1.39)	1 (1.01)
About one time per week	4 (2.34)	2 (2.78)	2 (2.02)
A few times per week	0 (0.00)	0 (0.00)	0 (0.00)
About one time per day	0 (0.00)	0 (0.00)	0 (0.00)
Multiple times per day	4 (2.34)	4 (5.56)	0 (0.00)
Specific answers: clothes Condoms Dust/Crumbs/etc. fruit peels I don't litter anything except for my dead skin cells. None paper paper, yogurt cups processed food wrappers sometimes I drop gum wrappers spit sunflower seeds tissues vegetables			

Question: In the past month, how often have you picked up a piece of litter that was not yours and disposed it?	Count (%) n= 337	Gender	
		Male n= 136	Female n= 201
Never	40 (11.87)	14 (10.29)	26 (12.94)
Maybe 1-2 times	132 (39.17)	57 (41.91)	75 (37.31)
About one time per week	52 (15.43)	17 (12.50)	35 (17.41)
A few times per week	77 (22.85)	31 (22.79)	46 (22.89)
About one time per day	18 (5.34)	7 (5.15)	11 (5.47)
Multiple times per day	18 (5.34)	10 (7.35)	8 (3.98)

Question: In the past month, how often have you picked up a piece of litter that was not yours and disposed it?	Count (%)	Gender	
		Male	Female
Prior to/after eating or drinking something	n= 340	n= 138	n= 202
Never	141 (41.47)	47 (34.06)	94 (46.53)
Rarely	122 (35.88)	48 (34.78)	74 (36.63)
Sometimes	61 (17.94)	35 (25.36)	26 (12.87)
Almost Always	7 (2.06)	4 (2.90)	3 (1.49)
Always	7 (2.06)	3 (2.17)	4 (1.98)
Not applicable	2 (0.59)	1 (0.72)	1 (0.50)
When I have to put out my cigarette	n = 340	n = 138	n = 202
Never	261 (76.76)	109 (78.99)	152 (75.25)
Rarely	4 (1.18)	1 (0.72)	3 (1.49)
Sometimes	7 (2.06)	2 (1.45)	5 (2.48)
Almost Always	5 (1.47)	3 (2.17)	2 (0.99)
Always	3 (0.88)	2 (1.45)	1 (0.50)
Not applicable	60 (17.65)	21 (15.22)	39 (19.31)
When I'm in a vehicle	n = 336	n = 135	n = 201
Never	208 (61.90)	83 (61.48)	125 (62.19)
Rarely	81 (24.11)	34 (25.19)	47 (23.38)
Sometimes	31 (9.23)	14 (10.37)	17 (8.46)
Almost Always	5 (1.49)	4 (1.48)	3 (1.49)
Always	3 (0.89)	0 (0.00)	3 (1.49)

Not applicable	8 (2.38)	2 (1.48)	6 (2.99)
At home	<b>n = 337</b>	<b>n = 137</b>	<b>n = 200</b>
Never	241 (71.51)	99 (72.26)	142 (71.00)
Rarely	55 (16.32)	19 (13.87)	36 (18.00)
Sometimes	31 (9.20)	15 (10.95)	16 (8.00)
Almost Always	4 (1.19)	3 (2.19)	1 (0.50)
Always	4 (1.19)	0 (0.00)	4 (2.00)
Not applicable	2 (0.59)	1 (0.73)	1 (0.50)
At school	<b>n = 339</b>	<b>n = 137</b>	<b>n = 202</b>
Never	147 (43.36)	46 (33.58)	101 (50.00)
Rarely	104 (30.68)	44 (32.12)	60 (29.70)
Sometimes	62 (18.29)	33 (24.09)	29 (14.36)
Almost Always	11 (3.24)	8 (5.84)	3 (1.49)
Always	11 (3.24)	4 (2.92)	7 (3.47)
Not applicable	4 (1.18)	2 (1.46)	2 (0.99)
At work	<b>n = 337</b>	<b>n = 137</b>	<b>n = 200</b>
Never	266 (78.93)	102 (74.45)	164 (82.00)
Rarely	12 (3.56)	9 (6.57)	3 (1.50)
Sometimes	8 (2.37)	5 (3.65)	3 (1.50)
Almost Always	0 (0.00)	0 (0.00)	0 (0.00)
Always	1 (0.30)	0 (0.00)	1 (0.50)
Not applicable	50 (14.84)	21 (15.33)	29 (14.50)
Other (please specify)	<b>n = 157</b>	<b>n = 66</b>	<b>n = 91</b>
Never	122 (77.71)	48 (72.73)	74 (81.32)
Rarely	4 (2.55)	1 (1.52)	3 (3.30)
Sometimes	9 (5.73)	5 (7.58)	4 (4.40)
Almost Always	1 (0.64)	1 (1.52)	0 (0.00)
Always	1 (0.64)	1 (1.52)	0 (0.00)
Not applicable	20 (12.74)	10 (15.15)	10 (10.99)

	Count	n =	Gender
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Question: What prevents you from littering (select all that apply)?	Count 1364	Male n= 578	Female n= 846
Trash cans/ recycling bins are nearby	322	131	191
There are anti-litter signs posted	77	97	40
When an area is already litter-free	160	55	105
When I feel that I want to keep a certain area clean	221	80	141
Friends, family, or others would complain about my behavior if I littered	191	79	112
I know there is no clean-up crew for a give area	114	36	78
I would feel guilty if I littered	252	91	161
Other (please specify)	27	9	18
<p>Specific answers:</p> <ul style="list-style-type: none"> <li>Because it goes against my ethics</li> <li>camping</li> <li>Guilty</li> <li>habitual - never litter</li> <li>i care about the enviorment too much</li> <li>i don't like to litter</li> <li>I dont like trash on the ground</li> <li>I dont mind walking to a trash can.</li> <li>i know littering is wrong / bad</li> <li>i like to recycle for money</li> <li>I protect the Eath as much as possible</li> <li>If I have been carrying my trash for days.</li> <li>im a green academy student</li> <li>I'm not a selfish lazy person, and I care about the environment</li> <li>It is disrespectful to the Earth and to other people</li> <li>It's gross</li> <li>La Migra</li> <li>My Mom is a Janitor</li> <li>My parent</li> <li>no point in littering</li> <li>O.C.D</li> <li>People Watching.</li> </ul>			

small enough for my pocket  
Teachers

The world would be one big garbage can if we just littered, and i like the world i live in now. Who would want to live in a world were there is garbage everywhere.  
To help the earth  
to keep the world clean  
Was taught otherwise

Question: How often do you think your friends litter?	Count (%) n= 337	Gender	
		Male n= 136	Female n= 201
Never	18 (5.34)	2 (1.47)	16 (7.96)
Rarely	51 (15.13)	14 (10.29)	37 (18.41)
Sometimes	162 (48.07)	66 (48.53)	96 (47.76)
Frequently	75 (22.26)	38 (27.94)	37 (18.41)
All the time	31 (9.20)	16 (11.76)	15 (7.46)

Question: When I see my friends littering, I _____ of their behavior.	Count (%) n= 339	Gender	
		Male n= 138	Female n= 201
Strongly disapprove	61 (17.99)	11 (7.97)	50 (24.88)
Disapprove	112 (33.04)	39 (28.26)	73 (36.32)
Somewhat Disapprove	76 (22.42)	36 (25.09)	40 (19.90)
Neither approve nor disapprove	81 (23.89)	47 (34.06)	34 (16.92)
Somewhat approve	4 (1.18)	3 (2.17)	1 (0.50)
Approve	2 (0.59)	1 (0.72)	1 (0.50)
Strongly approve	3 (0.88)	1 (0.72)	2 (1.00)

Question: If my friends saw me litter, they would _____ of my behavior.	Count (%) n= 336	Gender	
		Male n= 136	Female n= 200

Strongly disapprove	24 (7.14)	3 (2.21)	21 (10.50)
Disapprove	59 (17.56)	18 (13.24)	41 (20.50)
Somewhat Disapprove	73 (21.73)	25 (18.38)	48 (24.00)
Neither approve nor disapprove	161 (47.92)	79 (58.09)	82 (41.00)
Somewhat approve	13 (3.87)	6 (4.41)	7 (3.50)
Approve	1 (0.30)	0 (0.00)	1 (0.50)
Strongly approve	5 (1.49)	5 (3.68)	0 (0.00)

Question: When I think of times that I have littered, I _____ of my behavior.	Count (%) n= 338	Gender	
		Male n= 137	Female n= 201
Strongly disapprove	93 (27.51)	20 (14.60)	73 (36.32)
Disapprove	122 (36.09)	46 (33.58)	76 (37.81)
Somewhat Disapprove	69 (20.41)	34 (24.82)	35 (17.41)
Neither approve nor disapprove	44 (13.02)	29 (21.17)	15 (7.46)
Somewhat approve	5 (1.48)	5 (3.65)	0 (0.00)
Approve	2 (0.59)	1 (0.73)	1 (0.50)
Strongly approve	3 (0.89)	2 (1.46)	1 (0.50)

Question: In the past month, have you spoken with friends about littering?	Count (%) n= 337	Gender	
		Male n= 138	Female n= 199
No	226 (67.06)	103 (74.64)	123 (61.81)
Yes	111 (32.94)	35 (25.36)	76 (38.19)

Question: How do you think these conversations influenced your opinions about littering?	Count (%) n= 110	Gender	
		Male n= 35	Female n= 75
They made me think that littering is an important issue	57 (51.82)	20 (57.14)	37 (49.33)
They made me think littering is not an important issue	3 (2.73)	2 (5.71)	1 (1.33)
They didn't influence my opinion about littering	23 (20.91)	3 (8.57)	20 (26.67)
It depended who I was talking to; different friends had different effects	27 (24.55)	10 (28.57)	17 (22.67)

Question: In the next month, how likely is that you will litter? Remember, litter is defined as discarding, placing, throwing, or dropping any waste item in a public or private area and not immediately removing it. This includes waste items large and small, discarded intentionally or accidentally.	Count (%) n= 338	Gender	
		Male	Female
		n= 137	n= 201
Very Unlikely	95 (28.11)	27 (19.71)	68 (33.83)
Unlikely	89 (26.33)	24 (17.52)	65 (32.34)
Somewhat Unlikely	40 (11.83)	21 (15.33)	19 (9.45)
Undecided	54 (15.98)	30 (21.90)	24 (11.94)
Somewhat Likely	33 (9.76)	12 (8.76)	21 (10.45)
Likely	19 (5.62)	16 (11.68)	3 (1.49)
Very Likely	8 (2.37)	7 (5.11)	1 (0.50)

Question: How willing are you to participate in the following activities?	Count (%)	Gender	
		Male	Female
		n=	n=
Volunteer for a litter cleanup day	n= 313	n= 128	n= 185
Very Unlikely	50 (15.97)	29 (22.66)	21 (11.35)
Unlikely	44 (14.06)	18 (14.06)	26 (14.05)
Somewhat Unlikely	30 (9.58)	12 (9.38)	18 (9.73)
Undecided	64 (20.45)	30 (23.44)	34 (18.38)
Somewhat Likely	66 (21.09)	22 (17.19)	44 (23.78)
Likely	39 (12.46)	8 (6.25)	31 (16.76)
Very Likely	20 (6.39)	9 (7.03)	11 (5.95)
Sign up for our campaign email newsletter	n = 313	n = 128	n = 185
Very Unlikely	99 (31.63)	49 (38.28)	50 (27.03)
Unlikely	83 (26.52)	28 (21.88)	55 (29.73)
Somewhat Unlikely	33 (10.54)	12 (9.38)	21 (11.35)
Undecided	60 (19.17)	24 (18.75)	36 (19.46)
Somewhat Likely	22 (7.03)	10 (7.81)	12 (6.49)
Likely	6 (1.92)	0 (0.00)	6 (3.24)
Very Likely	10 (3.19)	5 (3.91)	5 (2.70)
Enter the video contest for our campaign	n = 313	n = 128	n = 185

Very Unlikely	110 (35.14)	49 (38.28)	61 (32.97)
Unlikely	85 (27.16)	30 (23.44)	55 (39.73)
Somewhat Unlikely	24 (7.67)	10 (7.81)	14 (7.57)
Undecided	61 (19.49)	25 (19.53)	36 (19.46)
Somewhat Likely	17 (5.43)	8 (6.25)	9 (4.86)
Likely	6 (1.92)	1 (0.78)	5 (2.70)
Very Likely	10 (3.19)	5 (3.91)	5 (2.70)
Enter an art contest that is part of the campaign	<b>n = 313</b>	<b>n = 128</b>	<b>n = 185</b>
Very Unlikely	100 (31.95)	52 (40.63)	48 (25.95)
Unlikely	75 (23.96)	34 (26.56)	41 (22.16)
Somewhat Unlikely	32 (10.22)	12 (9.38)	20 (10.81)
Undecided	48 (15.34)	17 (13.28)	31 (16.76)
Somewhat Likely	32 (10.22)	7 (5.47)	25 (13.51)
Likely	15 (4.79)	3 (2.34)	12 (6.49)
Very Likely	11 (3.51)	3 (2.34)	8 (4.32)
Pick up someone else's litter	<b>n = 313</b>	<b>n = 128</b>	<b>n = 185</b>
Very Unlikely	26 (8.31)	16 (12.50)	10 (5.41)
Unlikely	19 (6.07)	8 (6.25)	11 (5.95)
Somewhat Unlikely	26 (8.31)	17 (13.28)	9 (4.86)
Undecided	47 (15.02)	19 (14.84)	28 (15.14)
Somewhat Likely	81 (25.88)	36 (28.13)	45 (24.32)
Likely	67 (21.41)	16 (12.50)	51 (27.57)
Very Likely	47 (15.02)	16 (12.50)	31 (16.76)
If I see a friend littering, say something to express disapproval or try to stop her/him from littering	<b>n = 312</b>	<b>n = 127</b>	<b>n = 185</b>
Very Unlikely	20 (6.41)	14 (11.02)	6 (3.24)
Unlikely	9 (2.88)	7 (5.51)	2 (1.08)
Somewhat Unlikely	20 (6.41)	11 (8.66)	9 (4.86)
Undecided	48 (15.38)	26 (20.47)	22 (11.89)
Somewhat Likely	64 (20.51)	35 (27.56)	29 (15.68)
Likely	77 (24.68)	22 (17.32)	55 (29.73)
Very Likely	74 (23.72)	12 (9.45)	62 (33.51)

Appendix B: School Recruitment Flyer

## Join other Bay Area schools in making a difference in your community!

The survey is for the Bay Area Stormwater Management Agencies Association - also known as BASMAA. Please respond to the survey questions as honestly as possible. Your answers will remain confidential. There are no right or wrong responses. Your feedback will help build a campaign for Northern California's communities so we're interested in hearing your true and honest opinions!

The survey is available online every day- 24 hours a day at:

<http://bit.ly/BayAreaSurvey>

\*Survey's must be completed by ~~March 16, 2012~~ **Extended deadline: March 27, 2012**

Thank you for your participation!



[www.BetheStreet.org](http://www.BetheStreet.org)

Be the Street You Want to See.



<http://basmaa.org/>

### Appendix C: Script

The script provided to teachers to assist with survey distribution read:

Join other Bay Area schools in making a difference in your community. This survey is for the Bay Area Stormwater Management Agencies Association – also known as BASMAA. Please respond to the survey questions as honestly as possible. Your answers will remain confidential. There are no right or wrong responses. Your feedback will help build a campaign for Northern California’s communities so we’re interested in hearing your true and honest opinions.

Appendix D: Facebook Ad

**BASMAA SURVEY FACEBOOK AD (155 #2-2):**

**Image (attached to email):**



**Title/Name:**

Bay Area Stormwater Management Agencies Association

**Tagline:**

Click here to join Bay Area communities in giving your FEEDBACK! It only takes 5 minutes to make your voice heard!

**Link to survey:**

<http://bit.ly/BayAreaSurvey>

Appendix E: Pearson correlations among key variables in regression models  
(n=302 with complete data on all variables).

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Pick up other's litter	--												
2. Envi. Concern <sup>a</sup>	0.206 p<.0003	--											
3. Guilt <sup>b</sup>	.0.159 p<.09	0.342 p<.08	--										
4. Disapproval of friends	-0.140 p<.02	-0.357 p<.0001	-0.498 p<.07	--									
5. Perceived friend disapproval	0.022 p<.71	-0.129 p<.03	-0.136 p<.09	0.403 P<.0001	--								
6. Self-approval	-0.064 p<.27	-0.345 p<.0001	-0.495 p<.07	0.640 P<.0001	0.263 P<.0001	--							
7. Intent to litter	-0.017 p<.77	-0.202 p<.0004	-0.395 p<.08	0.436 P<.0001	0.257 P<.0001	0.413 P<.0001	--						
8. Cleanup	0.203 p<.0004	0.257 p<.0001	0.282 p<.08	-0.257 p<.0001	-0.169 P<.004	-0.282 P<.0001	-0.144 P<.02	--					
9. eNews-letter	0.207 p<.0003	0.289 p<.0001	0.255 p<.08	-0.089 P<.13	0.037 p<.52	-0.065 P<.262	-0.069 P<.24	0.424 P<.0001	--				
10. Video contest	0.203 p<.0002	0.261 p<.0001	0.122 p<.09	0.015 p<.79	0.96 p<.10	-0.052 p<.37	0.096 P<.10	0.260 P<.0001	0.556 P<.0001	--			
11. Art contest	0.129 p<.03	0.167 p<.004	0.134 p<.09	-0.094 p<.11	-0.040 p<.49	-.122 p<.04	-0.064 P<.27	0.271 P<.0001	0.412 P<.0001	0.598 P<.0001	--		
12. Pick up else's	0.436 p<.0001	0.366 p<.0001	0.454 p<.07	-0.365 p<.0001	-0.160 p<.006	-0.350 p<.0001	-0.273 P<.0001	0.424 P<.0001	0.356 P<.0001	0.296 P<.0001	0.223 P<.0001	--	
13. Express disapproval	0.215 p<.0002	0.400 p<.0001	0.386 p<.08	-0.512 p<.0001	-0.278 p<.0001	-0.470 p<.0001	-0.321 P<.0001	0.424 P<.0001	0.258 P<.0001	0.183 P<.002	0.230 P<.0001	0.576 P<.0001	--

<sup>a</sup>Variable was square-transformed to better approximate normality.

<sup>b</sup>Polychoric correlation coefficient reported for all correlations with this variable.

# **ATTACHMENT**

## **C.7.c. Media Relations – Use of Free Media**

BASMAA Media Relations Campaign Final  
Report

**BASMAA**  
**Media Relations Campaign**  
**Final Report FY 2011-2012**

**Submitted by O'Rorke Inc**  
**June 25, 2011**

During the fiscal year 2011-2012, O'Rorke Inc. continued to serve as BASMAA's media relations contractor.

Early in the year O'Rorke worked directly with project manager Sharon Gosselin and the PIP committee to brainstorm pitch topics. The result was several planned pitches and distributing radio/online public services announcements on key stormwater issues as well as monitoring of breaking news opportunities. Additionally, O'Rorke provided localized templates of many of the press releases developed for the regional campaign as a way to assist local programs with their own media efforts. O'Rorke also spearheaded the inclusion of more stormwater information and tips on BayWise.org. This helped enormously in allowing BayWise.org to be included as a resource in pitch materials and as a call to action in PSA copy.

In FY 2011-12 seven pitches were done and one was prepared and will be completed in the next fiscal year. The pitches resulted in forty-eight total media placements. The report that follows gives a synopsis of each pitch and the number and type of placements each garnered. A coverage report for the year is attached.

Additionally, O'Rorke developed a local press release on car washing and localized regional releases as well.

**Save the Bay/Trash Hot Spots**

In September, O'Rorke reached out to Save the Bay to partner on their annual Trash Hot Spots pitch. O'Rorke provided a quote from Executive Director Geoff Brosseau to convey BASMAA's core message about litter being an entirely preventable source of pollution and to call out the work of local programs.

A story ran in the San Francisco Chronicle and was also carried on SFGate.com.

**Don't Burn Holiday Gift Wrap**

O'Rorke was able to get BASMAA included in the Bay Area Air Quality Management District's (BAAQMD) press release regarding not burning holiday gift wrap.

BASMAA and BayWise.org were mentioned in an extensive story on holiday gift wrap (greener options, not burning it) on KRON-TV.

### **Rainy Season PSAs**

PSA copy was sent to all Bay Area radio stations, calling attention to major influxes of stormwater pollution after the first significant storms of the season.

Interviews ran on KEAR and KMKY (Radio Disney); these stations also ran the PSAs.

### **Baseline Litter Survey**

This pitch focused on the results of the Baseline Litter Survey. Because this study was new and actually quantified the litter load in the region, the pitch was extremely well-received. The first media hit came in the form of a major story in the San Jose Mercury News and led to widespread coverage both regionally and nationally.

The pitch garnered more than thirty placements, including Huffington Post, KCBS-AM, KGO-AM, and KTVU-TV.

### **Car Washing PSAs**

These PSAs encouraged use of car washes as a way to prevention stormwater pollution. O'Rorke also developed a press release for use by local programs.

The PSAs were aired by eight stations, including KSOL and KCBS.

### **Pools & Spas**

This pitch dealt with proper pool maintenance and drainage information. Stories ran with the Marin Independent Journal and the San Jose Mercury News (print and online) and with KKIQ.

### **Pesticides: Exterior Spraying PSAs**

These PSAs provided information about exterior spraying as a source of pollution, directing the audience to BayWise.org for more information and to find pest control professionals certified in less-toxic techniques.

These PSAs ran on KCBS, and in Spanish on KLOK, KBRG, KSOL, and KSQL.

### **Pesticides: Exterior Spraying/New DPR Regulations**

This pitch began at the end of the FY and the release focuses on the new exterior spraying regulations from the Department of Pesticide Regulation as a way to give a new angle to this story.

O'Rorke reached out to DPR for cooperation on this and for DPR to provide a quote. O'Rorke has secured this, but because of timing involved with getting the regulations passed, DPR has requested the pitch begin in early July.

### **Recommendations for FY 2012-13**

- Continue to look to new local/regional studies as a jumping off point for pitching. Timeliness and a sense of having real news to share were absolutely key factors in the success of the Baseline Litter Survey pitch.
- Continue to pitch FM radio stations and seek out public affairs coverage via PSAs or direct pitches. Public affairs directors have been receptive to BASMAA messages.
- Utilize BayWise.org in pitches as a resource; have homepage and content updated as needed to keep site relevant to media relations efforts.
- Develop of photo library to have courtesy pictures readily available to the media as a way to ensure more coverage. Media outlets need photos and a press release with a free-to-use picture is more likely to get used by the media.

# ATTACHMENTS

## **C.9.h.i. Point of Purchase Outreach**

Photos of *Our Water, Our World* booth at trade shows

Article and ad in trade show magazine

Photo of Bay Area OSH store managers' orientation training

Copies of *Our Water, Our World* advertisements



healthy home and garden  
visit [www.ourwaterourworld.org](http://www.ourwaterourworld.org)



Member under agreement with the State Water Resources Control Board  
Approved by the State Water Resources Control Board of California

Look for this symbol  
before you buy



**OUR WATER OUR WORLD**



Choose less toxic products for a healthy home and garden

visit [www.ourwaterourworld.org](http://www.ourwaterourworld.org)

Numbered under agreement with the State Water Resources Control Board pursuant to Santa Monica's Water Act of 2000 (Proposition 13)



Look for this symbol before you buy



**OUR WATER OUR WORLD**

557

**Got Bugs? Get Answers!**

Choose less toxic products for a healthy home and garden

visit [www.ourwaterourworld.org](http://www.ourwaterourworld.org)

Product recommendations are for general use only. For more information, visit [www.ourwaterourworld.org](http://www.ourwaterourworld.org)

Look for this symbol  
to find a safe way




Our Water Our World



Table displaying various cleaning products and brochures, including items like 'Lemon Power' and 'Safe & Simple'.




A grid of six photographs showing various insects: a sunflower, a dragonfly, a mosquito, a fly, a bee, and a green frog.



A large chart or poster displaying numerous small images of various insects, likely for identification purposes.




ADW

TRAPPING

SKUNKS

RACCOONS

POSSUMS

FERAL CATS

WILD PIGS

SNAKES

# Got Bugs? Get Answers!



Choose less toxic products for a healthy home and garden

visit [www.ourwaterourworld.org](http://www.ourwaterourworld.org)



Look for this symbol before you buy  
**MAKE A STATEMENT**  
COME TO OUR BOOTH AND WE'LL SHOW YOU HOW!!

# CRITICAL THINKING AND IPM

Annie Joseph  
ACCN PRO and Master Gardener,  
Ann Joseph Consulting



**Definition:** Critical thinking, in general refers to higher-order thinking that questions assumptions. -Wikipedia

"The intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action." Skriften M. and Paul R.W. 'Critical Thinking as Defined by the National Council for Excellence in Critical Thinking', 1987.



98% of the landscape problems our customers bring to us are customer induced. Though they may want to buy a bottle of 'Fix it All', the skillful nursery person or hardware store employee will spend a few minutes determining where the real problem lies. Frequently, I see nursery professionals feeling pressured to snap back with an immediate answer, when there may be more to the problem than meets the eye. Many of these situations require us to use our critical thinking skills. Trouble shooting

pest or disease problems in this way, is the first step in IPM, or Integrated Pest Management. This discipline involves looking at the whole system of a garden, including cultural practices that are frequently the origin of the problem.

It is by examining the dynamic of the home gardener's watering, soil type, spray habits and fertilizing techniques that we will most often help them to find sustainable solutions. This can lead to truly successful gardeners, and make you **the** source for reliable garden advice.

## IPM Consists of the Following 5 Steps

**Step 1: Monitoring and observation** — Pests and diseases are much easier controlled early in the process.

**Step 2: Cultural Controls** — use horticultural practices of our customers.

**Step 3: Physical Controls** — use copper barriers for slugs and snails.

**Step 4: Biological Controls** — using ladybeetles, beneficial nematodes, lacewing larvae, and encouraging birds in the garden.

**Step 5: Chemical Controls** — Recommend insecticidal soaps, oils, pyrethrins, and sometimes more powerful pesticides, but only when warranted.

By educating our employees and customers to use this 5-step process we can usually find the answers to the problem by deduction.

## 1. Monitor and Observe

Identify the plant and does it have a pest or disease or are they bringing you a plant that is going through the normal process of shedding its leaves to give energy to the new ones? Are they bringing you lady beetle larvae that they think are eating their plants? Do they have traps for monitoring pests like codling moth, olive fruit fly and whitefly before the pests have an opportunity to take foothold? Is the ever present 'over-watering' occurring?

## 2. Cultural Controls

- Where is the plant placed? Is it in sun or shade, a container or the ground, indoors or outdoors?
- How often and what time of day are they watering?
- Are they fertilizing the plant? If so how often and what type?
- Have they been spraying the plant with any pesticides or fungicides? If so how often?
- Have they recently transplanted the plant? If so what size of container was it in and how big is the container that it was transplanted into? How deep did they bury the plant and did they cover the crown?
- Have they pruned the plant recently? Did they disinfect their pruning shears?

## 3. Physical controls

Hand picking slugs and snails or using copper tape to exclude them. Applying Tanglefoot to a protective collar like Tangleguard to keep the ants from crawling up and farming aphids. Using weed fabric to prevent weeds from coming up in the planted areas. Using bird flash tape to keep the birds from eating fruit.

## 4. Biological Controls

Introducing ladybeetles, lacewing larvae, beneficial nematodes to the garden. Planting plants that are nectar sources will attract the beneficial insect populations. Lists of these plants are available from Our Water Our World and elsewhere.

## 5. Chemical Controls

Use only when needed and begin with the least toxic first so as not to disrupt the balance of beneficial insects in the garden setting. It is equally important to know how those products work and when they should be applied to be most effective. This means we need to know the pest and when it is most vulnerable to pesticide applications.

If we want our customers to come to us for sound pest advice we need to set them up with the right expectations regarding how products work. If they truly understand this, they will be successful with less toxic products, and you will be successful as the source of information and the products they need.

Some additional tips:

- When using iron phosphate baits the iron phosphate immediately binds the gut of the slug and snail. It is their last meal. They crawl away to die, so do not be disappointed because you do not see the dead slugs and snails on site.
- When using insect soaps and oils you have to thoroughly cover the insect in order to kill it. If more insects come to the area you will have to reapply.
- When using organic fertilizers it takes time for the soil microorganisms to break it down and release it back up to the plant in an available form. Soil warmth and bacterial action will begin the process. Organic fertilizers start a little more slowly than chemical fertilizers, but the payoff is much longer lasting fertilizer. They are gentler and much less likely to burn plants. Organic fertilizers do not tend to cause weak, thin walled cells that are more subject to insect damage.
- When using bacterial insecticides like *Bacillus thuringiensis kurstaki* for caterpillars, the insects have to feed on sprayed leaves, it paralyzes their gut, they then die and fall off the sprayed plant in a few days.
- Most ant baits are slow acting stomach poisons. This allows the ants time to take the bait back to the nest to kill the nest mates. This is a far more effective control than surface spraying.
- Cockroaches are more effectively controlled by using traps to monitor their activity, and using baits to kill them. Use caulking to seal up access from the outside, and if you still see activity, use bait stations and syringe gel treatments that have slow acting active ingredients. This allows them time to share the bait in the nest, and thereby greatly reducing the whole population.

Where to find additional resources for less toxic pest management for your store?

- <http://www.ourwaterourworld.org> The Our Water Our World website offers product lists with less toxic products that are on the market and are updated on an annual basis. There are also over 20 fact sheets in English and Spanish covering topics including ants, aphids, rose care and rodents that can easily be downloaded. Here you will also find links to other websites with information on your local Agricultural Commissioners office, Master Gardener contacts, Household Hazardous Waste locations, local creek information and much more. Visit [ourwaterourworld.org](http://ourwaterourworld.org) to take advantage of the "Ask Our Expert Feature" with experts from the Bio-Integral Resource Center in Berkeley. This is a non-profit with over 25 years in expertise in IPM, which answers pest questions and will get back to you or your customers within 24 hours regarding any questions they may have.
- <http://www.ipm.ucdavis.edu/training/> **The UC Statewide IPM Program website**

Here you will find two free online training modules for retailers who sell pesticides.

- a. *Introduction to Pesticides for Retail Employees* offers information on reading a pesticide label, how to apply and properly dispose of pesticides.
- b. *Moving Beyond Pesticides* offers a basic overview of Integrated Pest Management (IPM) and gives tips on how to identify, prevent, and manage insect, weed, plant pathogen and rodent pests.

If your employees complete the trainings and pass the quizzes they will receive a personalized Certificate of Completion from the University of California. There also is a quarterly newsletter for retailers that you can sign up for and get new information on invasive pests, beneficial insects and much more. They also have a website called the UC Statewide Integrated Pest Management Program ([www.ucipm.edu](http://www.ucipm.edu)) where you can access great information on pest identification and invasive pests that may be coming to your area.

With our fellow nursery and garden professionals utilizing these tools we will be disseminating science based information to help troubleshoot pest and disease problems. This will help to ensure not only our customer's success in their gardening endeavors but will build trust and repeat business for all.



# Avoid Pesticides to Help Protect the Bay

## Wondering how to prevent pesky insects without using toxic chemicals?

Most consumers are willing to try less-toxic option for managing household and garden pests. They just need to know that alternatives do exist, and which ones they should use.

Fortunately, help is available. In the Bay Area more than 170 local nurseries and hardware stores have partnered with local government to help educate consumers about less-toxic options. These retailers place tags on store shelves in front of less-toxic products, and carry fact sheets with tried and true ways to control common household and garden pests.

## Look for this tag before you buy



**Less toxic to  
people and pets!**



## Visit [www.OurWaterOurWorld.org](http://www.OurWaterOurWorld.org) to find out:

- which insects actually benefit your garden
- how to cultivate a lawn that deters weeds and other pests
- which less-toxic products can replace conventional pesticides
- how to dispose of leftover pesticides safely so they won't end up in our creeks, Bay, and Ocean
- what questions to ask before hiring a pest control company

You can even submit a question about your pest problem, and get a free personalized online response in less than 24 hours!



[www.OurWaterOurWorld.org](http://www.OurWaterOurWorld.org)

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Choose less toxic products  
for your home and garden.  
Look for this symbol before  
you buy.

**\$10**

*Saves*

# Healthy Gardening for People, Pets, and Our Environment!

Choose less toxic products  
for a healthy  
home and garden

Look for this tag before you buy



[www.OurWaterOurWorld.org](http://www.OurWaterOurWorld.org)

Brought to you by Bay Area Water Pollution Prevention Agencies



# Choose less toxic products for a healthy home and garden!

Look for this tag before you buy



Less toxic to people and pets!



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