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FINAL REPORT

Energy and Water Conservation in Council District 11

Community Partnership Outreach Grants Program

A Program of the Los Angeles Department of Water and Power

Submitted by:

The Bay Foundation
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Section A: Project Summary Page

The Bay Foundation (TBF) conducted a varied and innovative outreach strategy to encourage the public to implement water and energy conservation practices, while educating a diverse community of stakeholders. This report summarizes both successes and challenges, and provides recommendations for future outreach and communications implementation strategies. Activities took place between the dates of June 15, 2014 and June 15, 2015; however, most activities are summarized through May 30, 2015 to provide accurate estimates and data in the final report. Many activities, especially videos published to YouTube and the partnerships developed over the course of the program, will continue to reach the public long after the completion of this grant, thereby further extending the duration of the project.

The primary objectives of this project were to educate communities in Council District 11 (CD11) and the public about energy efficiency and water conservation through innovative partnerships with new and ongoing energy conservation and rain water harvesting implementation projects. TBF used an array of strategies to accomplish this, including: producing and distributing three high-quality PSAs, disseminating conservation information and devices at 10 outreach events and eight volunteer events and workshops (Figure 1), posting conservation rebates and incentives on social media throughout the grant period, producing and distributing one 'How-To' rain garden video, two press releases, numerous newsletters, and the completion and evaluation of 185 energy and water conservation surveys. Additionally, a strong partnership component and electronic sharing of information was implemented throughout the scope of this grant, including, but not limited to, several local and national websites, local television stations, and online media and social media outlets.



Figure 1. (left) Westchester Open House, 9/6/2014; (right) completed rain garden, 5/24/2015).

Vastly exceeding our initial estimates, a total of **6,607,273 people were outreached** as part of this energy and water conservation program, with a total of **622,496 people actively engaged** in some manner (9.4% engagement rate).

Section B: Project Description

The Bay Foundation (TBF) conducted a varied and innovative outreach strategy to encourage the public to implement water and energy conservation practices, while educating a diverse community of stakeholders. This report summarizes both successes and challenges, and provides recommendations for future outreach and communications implementation strategies. Activities took place between the dates of June 15, 2014 and June 15, 2015; however, most activities are summarized through May 30, 2015 to provide accurate estimates and data in the final report. Many activities, especially videos published to YouTube and the partnerships developed over the course of the program, will continue to reach the public long after the completion of this grant, thereby further extending the project's duration and reach.

TBF utilized new organizational partnerships by working in conjunction with a grant already secured through the Metropolitan Water District of Southern California's Innovative Conservation Program (MWD-ICP), which served as matching funds for the proposal. The MWD-ICP grant consists of removing lawns, installing rain gardens, implementing other rainwater harvesting and energy conservation strategies, and reducing runoff for multiple residential locations. Additionally, a strong partnership component as well as electronic sharing of information was implemented throughout the scope of this grant, including, but not limited to, local and national websites, local television stations, and online and social media outlets.

The primary objectives of this project were to educate communities in Council District 11 (CD11) and the public about energy efficiency and water conservation strategies and Los Angeles Department of Water and Power (LADWP) incentives and rebates. This was accomplished through innovative partnerships with both new and ongoing energy conservation and rain water harvesting implementation projects. TBF used a diverse array of outreach strategies to achieve these objectives, including the following: 1) Energy and Water Conservation Survey, 2) Public Service Announcements (PSAs), 3) How-To Video, 4) websites, 5) social media, 6) electronic or distributed newsletters, 7) Press Releases (Appendix 1), and 8) organizing volunteer workshops and hands-on events implementing water conservation and rain water harvesting techniques. Details for each activity can be found in the list below, with exact numbers of attendees and persons reached in Table 1.

- 1) **Energy and Water Conservation Survey:** To assess attitudes and practices of energy and water conservation by the public, a survey (both electronic and print) was developed and posted on the TBF homepage, on social media, on YouTube, and provided at outreach events (Appendix 2). There were a total of 185 respondents.
 - o *Date range:* January 13, 2015 – April 20, 2015; *Location:* online and printed copies distributed at events and workshops

2) Public Service Announcements: Three humorous Public Service Announcement (PSA) videos were produced on the serious matters of energy and water conservation. The first PSA, “Power Spinning,” focused on home retrofitting for energy conservation; the second PSA, “Desert Delivery,” focused on reducing or eliminating water use for things like irrigation (with subsequent energy conservation), and the solution-driven message of installing rain water harvesting techniques such as rain barrels, cisterns, disconnecting downspouts, and curb cuts (Figure 2); and the third PSA, “Pretend,” focused on the energy and water conservation benefits of replacing lawns with rain gardens and drought tolerant native plants.

- *Date range:* January 21, 2015 – April 6, 2015; *Location:* online



Figure 2. Screen capture from the PSA, “Desert Delivery”.

3) How-To Video: While there are several videos available online which explain the basics of rain gardens, there were none that provided an in-depth look into the benefits of rain water harvesting and energy conservation, while showing the viewer an easy-to-navigate, step-by-step process to complete these techniques and maximize the environmental benefits at their own home or business. One rainwater harvesting “How-to” video was completed and posted to TBF’s website, social media, and YouTube channel. Additionally, TBF assisted a homeowner who documented his rain garden installation and also posted the video on YouTube (matching activity).

- *Date range:* May 29, 2015 – June 3, 2015; *Location:* online

- 4) **Websites:** All information, videos, and materials were posted and highlighted on the TBF website (www.santamonicabay.org). Additionally, several partner and media websites also periodically highlighted features of the conservation program.
 - *Date range:* November 25, 2014 – May 30, 2015; *Location:* online
- 5) **Social Media:** A social media campaign including text, photos, and videos was constructed using TBF-aligned outlets: Facebook, Twitter, and YouTube. A distribution strategy of posts was created, edited and approved by LADWP, and shared with the public, followers, participants, and partners through social media and through direct communication. A minimum of one post per week was proposed, but during most weeks, two or more relevant entries were posted.
 - *Date range:* August 12, 2015 – June 15, 2015; *Location:* online
- 6) **Newsletters:** Listservs of several thousand individuals, agencies, organizations, and commercial businesses are maintained by TBF and their partners. These were utilized to distribute information, as well as the development of and maintenance of new contacts specific to this network of energy and water conservation.
 - *Date range:* January 14, 2015 – June 3, 2015; *Location:* online
- 7) **Press Releases:** Two Press Releases were sent to media outlets of the Los Angeles region during the project and opportunistic targeted media outreach was undertaken throughout the duration of the grant. This strategy was very successful in engaging the media to write articles, and to highlight the LADWP/TBF partnership.
 - *Dates released:* January 21, 2015 and April 14, 2015; *Location:* online
- 8) **Volunteer events/workshops:** Eight volunteer workshops were conducted at two rain gardens installations in the Los Angeles region using matching funds. Originally, four rain garden locations were stipulated (with one workshop each, for a total of four workshops), but two of the installations had to be postponed because drought conditions delayed pre-monitoring requirements. In lieu of the other two installations, eight other volunteer community events were coordinated in CD11 along with 11 matching events (matching events also include the eight volunteer rain garden workshop days) where energy and water conservation outreach were promoted through direct engagement with the community (Table 1; Figure 3).
 - *Date range:* August 20, 2014 – June 5, 2015;
 - *Locations:* CD11 (Mar Vista, Playa del Rey, Westchester) and Culver City, Downey, Lakewood, and Palos Verdes Estates (match)

Volunteers and participants were engaged throughout the process. Although it wasn't feasible within the time limitations of this grant, TBF also developed a relationship with

Councilmember Mike Bonin's office and initiated dialogue to begin installation of drought-tolerant plants adjacent to his Westchester office in CD11.

Table 1. List of events, people engaged at each event, and summary materials distributed.

Date	Event	Attendees	Reach	Summary
8/20/2014	Edison "Gathering of Green Teams"	250	45	Networking event. First mostly paperless event. Matching funds.
9/10/2014	LMU's First Annual Community Open House	200	31	CD11 neighborhood event. 49 devices distributed.
9/20/2014	Coastal Cleanup Day	175	45	CD11 hands-on event. 40 devices distributed.
11/13/2014	LMU Pre-screening Event for the documentary "Damnation"	130	21	CD11 networking event. 12 devices distributed.
Fall 2014	Environmental Sustainability Class	30	30	College course at Loyola Marymount University (CD11).
3/14/2015	Water Replenishment District's Groundwater Festival*	300	190	Matching fund, outreach event. 52 devices distributed.
4/18/2015	Palos Verdes Estates First Annual Energy & Environmental Expo	100	24	Matching fund, outreach event. 5 devices distributed.
4/25/2015	Friends of the Ballona Wetlands Earth Day	150	35	CD11 hands-on event. 22 devices distributed.
4/25/2015	Mar Vista Green Garden Showcase	80	42	CD11 outreach event. 15 devices distributed.
Spring 2014	Environmental Sustainability Class	30	30	College course at Loyola Marymount University (CD11).
4/23/2015 – 4/26/2015	Rain Garden x 4 events	25	25	Matching fund, hands-on volunteer event.
5/21/2015 – 5/24/2015	Rain Garden x 4 events	40	40	Matching fund, hands-on volunteer event.
5/29/2015	LMU Rain Garden	9	9	CD11, hands-on volunteer event.
6/5/2015	LMU Rain Garden	11	11	CD11, hands-on volunteer event.



Figure 3. Earth Day tabling event in partnership with Friends of Ballona Wetlands, 4/25/2015.

Section C: Project Evaluation

Goals and Targets

Vastly exceeding our expectations, occasionally by an order of magnitude or more, the outreach strategies all exhibited varying degrees of success. In summary, a total of **6,607,273 people were outreached** as part of this energy and water conservation program, with a total of **622,496 people actively engaged** in some manner (9.4% engagement rate). Note that the numbers in some cases reflect best professional judgement (e.g. TV station viewership) or referenced literature suggesting average percent engagement rates (e.g. partner social media engagement). For example, while most scientific literature suggests an average social media engagement rate of approximately 1% of the total outreached population (which was used for partner estimates), TBF's average engagement rate was 1.6%, with occasional spikes even higher. Table 2 summarizes the final counts for each group of activities. Appendix 3 contains detailed data for each activity, as well as notes and behavior change estimates.

Table 2. Summary of number of people outreached and actively engaged by activity.

Activity	# People Reached	# People Engaged (Estimates)
Total Events	1,530	578
Total Media	55,287,763	5,548,691
Total Press Releases	1,200	480
Total Newsletters	658,571	65,196
Total Websites	10,772	1,077
Total TBF Social Media	84,103	17,943
Total Partner Social Media	8,744,638	87,446
Grand Total	64,704,474	5,721,411
Grand Total (without Upworthy)	6,607,273	622,496

Goals and Targets Summarized by Milestone

Milestone #1: Finalize Contracts: complete

Target Reach (number of people): not applicable

Three subcontracts were awarded as part of this grant to two filmmakers (competitive application process) and one communications consultant (new partner). Additionally one student intern was hired to complete the “How To” rain garden video.

Milestone #2: Develop Program Details: complete

Target Reach (number of people): not applicable

Several meetings were held with project staff and partners to discuss implementation plans for the different outreach strategies as well as the development of a hiring committee for the PSA filmmakers. Additionally, TBF met with SSG to discuss program details and develop the survey.

Milestone #3: Social Media Activities: complete, and will continue after close of project.

Target Reach (number of people): approximately 3,000 per week; achieved

Actual Reach (number of people): 84,103 (TBF); 8,743,716 (via partnerships)

LADWP energy and water conservation tips, incentives, and available rebates were disseminated through social media. A list of fifty tweets was developed, edited, and approved by LADWP staff. From August 9, 2014 to June 9, 2015, one tweet from the list was posted every Tuesday and Friday at 12:15 pm. Additionally, opportunistic news and information was also posted (e.g. highlighting the release of each of the PSAs, or breaking energy or water news). This strategy continued for the duration of the grant. Tweets were posted to twitter and

Facebook. Subsequent cross-promotion occurred through partner organizations and agencies, elected officials, and public stakeholders. The TBF Twitter account alone had 48,531 potential views (which Twitter refers to as “impressions”) which were engaged 711 times (Twitter defines “engagement” when a Tweet is clicked, retweeted, or favorited). Although the engagement rate was only 1.6%, according to social media research, this is slightly higher than social media users in general. In fact, over 25% of the LADWP-related Tweets received a 2% or higher engagement rate (from 2.01% to 6.73%, well above the Twitter average). The most viewed Tweet was seen 3,199 times (Figure 4). Notable retweets and Facebook posts included Senator Fran Pavley (Senate District 27), actor and conservation activist Ed Begley, Jr., KCET VP Val Zavala (“SoCal Connected”), Heal the Bay, KPCC, LA City View 35, TreePeople, and the popular website Upworthy (@upworthy). The Energy and Water Conservation Survey was also posted on social media.

Convert your lawn to beautiful #DroughtTolerant landscaping and get back \$3.00 per square foot @LADWP #CADrought <http://t.co/YLqdgFitSz>
- October 7, 2014

Figure 4. Most viewed Tweet.

Milestone #4: Post Materials to Website: complete, and will continue after close of project.
Target Reach (number of people): 100 per week (x 21 weeks); achieved
Actual Reach (number of people): 9,850 page views

On November 25, 2014, TBF posted a link to the Energy and Water Conservation Social Survey (survey closed April 20, 2015). During this period, the website front page received 3,885 views (3,086 unique views), while the survey landing page received 123 viewers, with 81.30% as new views. The first PSA (“Power Spinning”) was posted on the website January 21, 2015, the second PSA (“Desert Delivery”) was posted on February 18, 2015, and the third PSA (“Pretend”) was posted on April 6, 2015.

Milestone #5: Develop PSAs (including one press release): complete, and outreach of the PSAs will continue after close of project
Target Reach (number of people): 10,000+ per PSA; achieved
Actual Reach (number of people): 186,076 (16,420 via YouTube, 173,300 via local television stations, theaters, and other viewings)

Two videographers were hired and three energy and water PSAs were produced. The three PSAs were humorous, yet focused on serious aspects of energy and water conservation. The first focused on home retrofitting for energy conservation (PSA #1, “Power Spinning,” released

January 21, 2015); the second focused on reducing or eliminating water use for things like irrigation (with subsequent energy conservation), and the solution-driven message of installing rain water harvesting techniques such as rain barrels, cisterns, disconnecting downspouts, and curb cuts (PSA #2, “Desert Delivery,” released February 18, 2015); and third and final PSA focused on the energy and water conservation benefits of replacing lawns with rain gardens and drought tolerant native plants (PSA #3, “Pretend,” released April 6, 2015). Two newsletters were released by the Santa Monica Bay Restoration Commission on January 14, 2015 and March 18, 2015 to approximately 600 people each; the TBF website was also updated in conjunction with each release.

The first TBF press release, “The Bay Foundation and LADWP Launch Energy and Water Conservation Program to Engage Public,” was posted on January 21, 2015, which highlighted “Power Spinning” and the Energy and Water Conservation Survey; the second TBF press release, “The Bay Foundation and LADWP’s Humorous Drought-Related Water Conservation Videos Hit Home with Public,” was released April 14, 2015. Both were distributed to approximately 600 people with numerous resulting media articles and subsequent spikes in the social media and YouTube views. They were both posted on the media page of TBF’s website.

Outside of YouTube, estimating the total number of PSA views was difficult as some TV stations kept very good track, some just knew that it was ‘in the queue’, and other stations did not follow-up at all or reply to our inquiries.

Milestone #6: “How-To Video”: complete, and outreach will continue after close of project
Target Reach (number of people): 400 views; not achieved (see below)
Actual Reach (number of people): 104

A student intern videographer was hired by TBF and a detailed “How-To Video” was produced with multiple revisions and two rounds of edits. Because of drought-related rain garden installation delays, the video was produced later than expected within the grant period, after completion of the first rain garden project (to include time-lapse footage), and thus had fewer views during the grant period than expected (104 views as of June 9, 2015). However, it was posted on the TBF website front page, TBF’s YouTube page, and various social media outlets. It will continue to be outreached after the close of the project, with a goal of 400+ views.

Milestone #7: Four Volunteer Events: complete (seven completed in CD11; 19 total events)
Target Reach (number of people): 3,000+ via notification; achieved
Actual Reach (number of people): 662,502 (2,304 via website; 1,530 via events; 97 volunteers; 658,571 through newsletters; many via social media – see above)

Eight volunteer workshops were conducted at two rain gardens installations in the Los Angeles region using matching funds. Eight other events were coordinated in CD11 along with a total of 11 matching events (matching events also include the eight volunteer rain garden workshop days) where energy and water conservation outreach were promoted through direct engagement with the community (Table 1). Notices and newsletters were distributed through TBF/CURes Intern Listserv, LMU's Community Relations network, Santa Monica College's Sustainability Works website, several UCLA lists, and the TBF website. The first volunteer event was held on April 25, 2015 at the Friends of the Ballona Earth Day invasive plant removal and trash clean up. The event had 150 attendees with 35 people directly engaged about water and energy conservation strategies, and 16 devices were distributed.

The second volunteer event was also held on April 25, 2015 at the Mar Vista Green Garden Showcase at a home rain garden site that TBF installed in 2012. Approximately 175 people attended with 42 directly engaged and 17 conservation devices distributed. TBF had the privilege of tabling at a home where they had installed a rain garden and planted native, drought-tolerant plants in 2012. TBF shared a table with the Surfrider Foundation whose volunteer was a knowledgeable landscape architect. This was truly a neighborhood event, drawing people to over 50 homes. Many people were inspired by the rain garden, allowing for an excellent opportunity to promote LADWP incentives and rebates (Figure 5, left).



Figure 5. (left) Mar Vista Green Garden Showcase, 4/25/2015; (right) a future LADWP customer checks out rebates and incentives, 4/25/2015.

Another volunteer event was held on May 29, 2015 at the LMU Rain Garden. Nine people attended and were engaged. The final volunteer event was June 5, 2015. This event was originally scheduled for May 8, 2015, but had to be rescheduled because of LMU graduation. 11 people attended and were engaged and four conservation devices were distributed.

Milestone #8: Complete Water Conservation and Energy Conservation Projects (including one press release and one newsletter): complete

Target Reach (number of people): 1,000 (newsletter); achieved

Actual Reach (number of people): (see Milestone #7, Volunteer Events)

Part of TFB’s educational and outreach strategy was tied to the Metropolitan Water District of Southern California’s Innovative Conservation Program grant (MWD-ICP) which consists of removing lawns, installing rain gardens, implementing other rainwater harvesting and energy conservation strategies, and reducing runoff for four residential locations (Figure 6). A milestone was to have four volunteer events at each of the rain garden installation events, but two of the rain garden installations were delayed because of pre-monitoring difficulties due to the drought. With the approval of LADWP, TBF was able to adapt and schedule suitable CD11 outreach (see previous Milestone #7), and use footage from the first rain installation (April 24-28) for the “How-to” video. TBF will follow up with homeowners to continue energy and water savings outreach.



Figure 6. (left) Before: volunteers help remove turf roots, 5/21/2015; (right) After: final day of installation, 4/24/2015.

Social Survey Analyses

Methods

A detailed Energy and Water Conservation Survey was created to assess attitudes and behaviors of Los Angeles residents. The survey was designed to be taken online (via Survey Monkey), but for outreach events, paper versions were made available for those who live in houses or apartments. To assess attitudes, the survey used Likert scale questions (“Strongly Agree,” “Agree,” etc.), and to assess behavior “Select all that apply” type questions (e.g., “What ways do you conserve energy?”). The online survey questions were nested, so respondents did

not have to answer unnecessary questions. The survey focused on a self-assessment of how well they conserve water and energy, what ways they conserve water and energy, obstacles to conservation, and questions about lawns and lawn-alternatives.

Results

The vast majority of respondents (approximately 95%) agreed or strongly agreed they do their best to conserve energy and water, while nearly three-quarters agreed or strongly agreed that water rates should be increased for those who use too much water, and almost two-thirds said that they would report water wasters (Table 3).

Table 3. Attitudes about energy and water conservation.

Thoughts about Conservation	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
I do my best to conserve energy.	55%	41%	2%	1%	2%
I do my best to conserve water.	57%	37%	2%	2%	2%
I encourage my family and friends to conserve water and/or energy.	52%	37%	8%	1%	2%
Water rates should be increased for those who use too much.	36%	36%	15%	7%	5%
I would email or call a tip line if I saw water waste (e.g., sprinklers watering the side walk).	29%	34%	19%	10%	5%

Lawns

The majority of respondents (77%) own or rent a house, and three-quarters of them have a lawn. Of those who have a lawn, over half would like to install a native garden or rain garden, especially if there are rebates and incentives (Table 4). Most respondents watered their lawns two or fewer times per week, with a small number watering three times a week, and none watering four or more times a week. Interestingly, over two-fifths of respondents said lawns are not appropriate for California’s climate.

Table 4. Attitudes about lawns and lawn-alternatives.

Your thoughts about lawns and alternatives.	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
I want to install a native garden and/or rain garden.	29%	22%	16%	16%	5%
I want to install a native garden and/or rain garden because of increased water costs.	18%	19%	24%	18%	6%
I will install a native garden and/or rain garden if there are rebates and incentives.	24%	20%	21%	14%	7%
I will remove my lawn if water rates increase.	14%	17%	21%	26%	7%
A lawn is inappropriate for Southern California's climate.	17%	21%	22%	20%	9%
I won't water my lawn until the drought is over.	9%	9%	17%	37%	14%
I follow the city's lawn watering regulations	47%	30%	9%	2%	0%
I have no interest in removing my lawn.	16%	28%	19%	13%	11%

Barriers

Some of the obstacles homeowners cited for not conserving energy include: “My energy bill is affordable” (26.5%), “I'm not familiar with rebates and incentives” (26.5%), and “Conserving energy limits my lifestyle” (20.6%) (Table 5). Reasons apartment dweller gave include: “It's too much trouble” (21.4%), and “It's too expensive” (21.4%) (Table 6).

Table 5. Homeowner obstacles to energy conservation.

Home: What obstacles or reasons prevent you from conserving energy?	Response Percent
Conserving energy limits my lifestyle.	20.6%
I can't afford energy-efficient appliances and devices.	8.8%
My energy bill is affordable.	26.5%
It's the government's problem.	2.9%
I'm not familiar with rebates and incentives.	26.5%
I don't know how.	2.9%
It didn't occur to me.	5.9%
There are no obstacles or reasons for me not to conserve energy.	5.9%

Table 6. Apartment resident obstacles to energy conservation.

Apartment: What obstacles or reasons prevent you from conserving energy?	Response Percent
It's too much trouble.	21.4%
It's too expensive.	21.4%
My energy bill is affordable.	7.1%
It's the government's problem.	0.0%
I'm not familiar with rebates and incentives.	7.1%
I don't know how.	0.0%
It didn't occur to me.	7.1%
There are no obstacles or reasons for me not to conserve energy.	7.1%

Some of the obstacles homeowners cited for not conserving water included: “I'm not aware with rebates & incentive that can help me conserve water” (17.6%), “My water bill is affordable” (14.7%), and “It didn't occur to me” (11.8%) (Table 7). The number one reason that apartment dwellers did not conserve water was: “I don't pay for my water” (30%) (Table 8).

Table 7. Homeowner obstacles to water conservation.

Home: What obstacles or reasons prevent you from conserving water?	Response Percent
It's too difficult.	2.9%
My water bill is affordable.	14.7%
It doesn't concern me.	5.9%
I don't know how.	5.9%
It's the government's problem.	2.9%
I'm not aware with rebates & incentive that can help me conserve water.	17.6%
It didn't occur to me.	11.8%
There are no obstacles or reasons for me not to conserve water.	8.8%

Table 8. Apartment resident obstacles to energy conservation.

Apartment: What obstacles or reasons prevent you from conserving water?	Response Percent
It's too difficult.	0.0%
It didn't occur to me.	0.0%
My water bill is affordable.	0.0%
I don't have any choice.	7.7%
I don't pay for my water.	30.8%
It's the government's problem.	0.0%
I don't know how.	0.0%
There are no obstacles or reasons for me not to conserve water.	15.4%

The barriers were diverse and quite particular to whether the respondent lived in a house or an apartment. For some homeowners, affordable energy and water rates were a reason not to conserve. Similarly, a third of apartment residents had no incentive to conserve since they did not pay for water.

Knowledge of LADWP Rebates and Incentives

A majority of homeowners (61.9%) knew about LADWP rebates and incentives, versus less than fifty percent of apartment dwellers. Although the majority of homeowners were familiar with turf rebates and Energy Star appliances, fewer knew about rebates and incentives for window and skylight replacement, Energy Star Qualified Air Conditioners, or lawn-based conservation devices (Table 9). Those who live in apartment were well aware of free showerheads (57.9%) and Energy Star appliances (63.2%), but not as aware of kitchen and bath aerators (36.8%) (Table 10).

Table 9. Homeowner knowledge of LADWP programs.

Home: Which LADWP rebate and incentive are you familiar with?	Response Percent
California Friendly Landscape Incentive Program (\$3.00 per square foot of turf removed)	79.5%
Home Energy Improvement Program	48.2%
Energy Star Appliances	79.5%
Energy Star Qualified Residential Windows and Skylights	33.7%
Energy Star Qualified Air Conditioners	31.3%
Weather-Based Irrigation Controllers	25.3%
Soil Moisture Sensor System	10.8%
Rotating Nozzles	20.5%
Rain Barrels	33.7%
High-Efficiency Toilets	68.7%
I was not aware of these programs	3.6%

Table 10. Apartment resident knowledge of LADWP programs.

Apartment: Which LADWP incentives are you familiar with?	Response Percent
Free showerheads	57.9%
Free bath and kitchen aerators	36.8%
Energy Star appliances	63.2%

Although most respondents reported they were doing their the best to conserve energy and water, the survey showed many were not aware of LADWP rebates and incentives, and that lawn ownership, despite many seeing lawns as incompatible with Southern California climate, is still an entrenched cultural value. Lessons learned from this survey will inform future outreach and how messages are framed.

Project Achievements and Highlights

The production of each of the three PSAs was one of the biggest highlights of this project. With a modest budget, three high-quality PSAs were produced that used humor to raise awareness about the serious issue of energy and water conservation. They achieved a significant level of distribution that far exceeded the original expectations of the grant. With over 16,000 views on YouTube alone, we predicted, using conservative estimates, that nearly 7% of viewers would be influenced to modify their behavior (Appendix 4, “TBF Impact” tab). PSAs #1 and #3 combined received 3,644 views, but interestingly, PSA #2 received 12,776 views (as of June 5, 2015). Part of the reason for PSA #2’s success was theorized to be related to the popular website Upworthy, which featured PSA #2 on its website and promoted it via Facebook and Twitter. Upworthy’s website boasts 50,000,000 views per month (per their own estimate), 7.6 million likes on Facebook, and 487,000 followers on Twitter. Unfortunately, it is impossible to control when a social media message goes viral, but fostering partnerships increases the odds for this kind of reciprocity (Appendix 5). The use of funds to promote and boost social messaging to increase potential reach in the future should be considered.

Another highlight was the outreach success at the Metropolitan Water District’s Groundwater Festival (March 14, 2015). Outreach is always a challenge, but the event organizers determined an effective strategy for public engagement. Every event attendee had to visit each table in order to get their raffle card stamped. Once the entire card was stamped, it could be submitted for a chance to win an energy-efficient appliance. This allowed us to meet many people (many from LADWP’s service area) and giveaway water and energy conservation devices on the condition they fill out the Water and Energy Conservation Survey. The survey link was posted on our website, on social media, and in the description box for each PSA, yet we only received 134 submissions online; whereas, the face-to-face interaction, with incentives, received almost of third of the total surveys submitted. This indicates face-to-face engagement, although more expensive, is more effective in motivating and influencing people to change (Table 11).

Table 11. Cost comparison between Twitter and face-to-face outreach.

	Tweets	Outreach Events
Number	130	14
Potential Reach	48,531	1,530
Engagement	711	578
Engagement Rate	1.58%	37%
Hours Invested	10	60
Labor (\$26.87/hr.)	\$269	\$1,612
Engagements/hour	71	9.6
Engagement/unit	\$0.38	\$2.79

Community engagement was a highlight of this grant. Whether at the LADWP convenings, partnership-organized festivals and outreach events, or volunteer workshops, we met hundreds of passionate people who are concerned about the environment and want to make sustainable changes. Many participants were conservation veterans while others were eager to learn what they can do to actively participate and conserve. LADWP gave us the tools to inform and offer next steps. At many of the outreach events, we networked with non-profit groups such as Heal the Bay, Surfrider Foundation, and Friends of the Ballona Wetlands and discussed future collaborations. We discussed outreach challenges, how each of us could participate or expand our reach, and the need to work together to maximize potential reach. It was through this grant that we were invited to SoCal Edison's "Gathering of Green Teams," and the Water Replenishment District of Southern California was pleased to see our partnership with LADWP, and how we included conservative incentives pertinent to the City of Lakewood. The invitation to make a special presentation at the final LADWP convening was the capstone of this grant (Appendix 6). The lessons learned from this grant have already made us a stronger organization, more readily able to meet our mission, and generated ideas for future work.

Project Challenges and Resolutions

The primary objectives of this project were to educate communities in Council District 11 and the public about energy efficiency and water conservation strategies and Los Angeles Department of Water and Power (LADWP) incentives and rebates. Although behavior change was a primary goal, the ability to quantify that was slightly outside the scope of this project, due to the high proportion of online strategies implemented. TFB's diverse outreach strategy included presenting available LADWP rebates and incentives, providing free LADWP water and energy conservation devices, producing humorous PSAs on the serious issue of water and energy conservation, and providing a survey to assess attitudes and current behavior. Given this broad strategy, it was not feasible to gather post-survey data. It took a significant amount of effort to directly engage once via online and televised strategies, but asking someone to complete a before and after survey would not have had significant results. In spite of that difficulty, TBF devised a way to estimate the potential for behavior change for each strategy implemented (see Appendix 4, "TBF Form" tab).

An additional "work around" strategy that TBF developed was to give a pre- and post-survey to two classes of LMU students (Fall 2014 and Spring 2015). Thirty students in each of the two classes took the survey at the beginning of the course and then at the end. This introductory sustainability course focused on a vast range of environmental issues including energy and water conservation. There was a statistically significant change in both attitudes and behaviors for both classes in a positive direction that included the direct implementation of water and energy conservation strategies. Even further, the amount of engagement that the students

received was so high that they were passing along water and energy conservation strategies to their friends, families, and neighbors.

Another challenge was meeting the rain garden event milestone (e.g. four volunteer events at each of the rain garden installation events), but because rain garden installations were delayed, two of the proposed garden installations fell outside the grant closing timeline. With the approval of LADWP, TBF was able to adapt and schedule suitable CD11 outreach, and use footage from the first rain installation (April 24-28) for the “How-to” video.

Additional Information

Through this grant, TBF developed new and strengthened existing partnerships. Through matching funds, TBF worked closely on water and energy conservation issues with the Metropolitan Water District of Southern California, the Water Replenishment District of Southern California, Southern California Edison, the City of Palos Verdes Estates, and Culver City. Within CD11, relationships were strengthened with Councilmember Mike Bonin’s office (CD11), Loyola Marymount University, Friends of the Ballona Wetlands, the community of Mar Vista, the Surfrider Foundation, Arts:Earth Partnership, and SELVA International. In the development and making of the PSAs, we developed partnerships with gifted filmmakers and other media organizations including the G2 Gallery (<http://www.theg2gallery.com/>), KPCC, Santa Monica City TV, and the City of Calabasas TV.

Part of the success of this grant is due to a pre-existing relationship with Loyola Marymount University (LMU). For the past nine years, TBF has worked closely with the Biology and Environmental Science Departments concerning water quality and habitat restoration issues, but this grant presented the opportunity to develop relationships with other LMU departments such as the Center for Urban Resilience, Community Relations, Film Department, and Green LMU. Additionally, with a different focus, we have been able to engage LMU’s surrounding Westchester community more fully, presenting information that concerns each of them in their daily lives (i.e. energy and water savings).

Two introductory Environmental Sustainability courses offered unique opportunities to provide semester-long outreach about water and energy conservation to 60 (total) engaged students living in the Westchester area (CD 11). As part of this course, students were surveyed on the first and last day of class, which included both a ‘before’ and ‘after’ assessment of a targeted energy and water conservation campaign. Throughout the semester, students learned about energy and water issues, conservation strategies, and LADWP rebates and incentives. An analysis of pre- and post-survey results showed a statistically significant change in both attitudes and behavior concerning water and energy conservation. Specifically, students were significantly more likely to make individual changes to live more sustainably regarding both

energy and water use. Additionally, students reported applying pressure to their peers, families, and communities to also engage in learned techniques and conservation strategies. They had also often directly applied conservation strategies to their residences. This highly successful program shows that continued, engaged learning and education can play a significant role in behavior change; however, the effort and time input was very high.

Impact Form Summary

To assess our project's impact, we used the LADWP Impact Form to capture energy and water savings from conservation devices distributed (Appendix 4, "Impact Form" tab). Additionally, a separate form was developed with help from SSG to estimate behavior change through best professional judgment or appropriate literature estimates (Appendix 4, "TBF Form" tab). Because of our diverse outreach strategy and the difficulty of subsequent follow up with online participants, we modified the impact form to estimate impact by analyzing qualitative data (e.g., venue-type, participant demeanor, social media engagement-rate) and designed a method that estimated quantitative behavior change. This is a common method used in the social sciences.

Not surprisingly, physical outreach was more expensive and time-intensive, yet yielded a higher engagement-rate (37%) and allowed for face-to-face dialogue; while social media/email outreach was much less expensive and less time-consuming, yet yielded a lower engagement rate (1.6% for Twitter) but with generic messaging. To compare these different, but complementary, approaches, a "Likelihood of Behavior Change" metric was devised that rated impact on a scale of Low (0-10%), Medium (11-49%), and High (50-100%). How an activity rated depended on best professional judgment and/or data analytics (Appendix 4; Table 11). TBF's program had an impressive reach, but most importantly, it had the potential to bring about considerable behavior change (**18,476 and 18,937** people for energy and water, respectively).

Future Directions / Ongoing Work

Since 1988, the mission of The Bay Foundation has been to improve water quality, conserve and rehabilitate natural resources, and protect the Santa Monica Bay and surrounding watershed's benefits and values. The work on this grant has strengthened this mission creating the opportunities to develop new strategies to continue and enhance these goals. Although many of the tools employed for this grant have been used in previous work (e.g., press release, websites, social media), never to the degree as used for this project. Social media strategy dramatically improved, especially as partnerships were strengthened and developed, and message framing improved. New tools such as the PSAs, social survey, paperless outreach (Appendix 7), allowed TBF to greatly expand its reach and broaden its institutional possibilities.

List of Appendices

- Appendix 1.** Press Releases
- Appendix 2.** Social Survey
- Appendix 3.** Twitter List
- Appendix 4.** Impact Forms
- Appendix 5.** Media Collage
- Appendix 6.** LADWP Final Convening Presentation
- Appendix 7.** Paperless Outreach Examples
- Appendix 8.** Favorite Photos

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