

TRASH FREE WATERS PROGRAM
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AQUATIC TRASH PREVENTION GREAT PRACTICES COMPENDIUM

THE MID-ATLANTIC STATES
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INTRODUCTION



Trash that is improperly disposed of -- either intentionally or inadvertently -- can enter fresh water and coastal ecosystems. This “aquatic trash” may eventually make its way to the ocean. Aquatic trash has become a pervasive problem in these environments, presenting a challenge to water quality and habitat protection, in addition to causing aesthetic blight, ecological effects, economic impacts, and possible human health risks. The U.S. Environmental Protection Agency’s (EPA) Trash Free Waters (TFW) program prompts collaborative actions to reduce and prevent land-based trash from entering our watersheds, coastal waters, and marine environment.

The central tenet of TFW is to support states, municipalities, and businesses to work together to develop innovative aquatic trash management strategies in targeted geographic areas. Recognizing that one size doesn’t fit all, regional strategies are tailored to a given geographic area and serve to enhance federal, state, and local programs. Such an approach allows for this global problem to be more manageable at a state and local level. Regional strategies consist of projects identified and developed by stakeholders to reflect their needs and concerns.

Stakeholders of the Mid-Atlantic Region asked EPA to create a great practices compendium to identify policies, programs, and initiatives that showed results with regard to reducing and/or preventing aquatic

trash. Hence, *The Aquatic Trash Prevention Great Practices Compendium for the Mid-Atlantic Region* was endorsed as one of the priority activities for the TFW strategy and projects in the Mid-Atlantic Region.

The great practices presented in this document are meant to provide general information pertaining to efforts that demonstrate progress toward aquatic trash prevention and/or reduction when applied in a given region, state, or locality. Whether efforts were directed at addressing litter and mismanaged trash or even aquatic trash capture and removal, the great practices provided in this compendium offer a variety of approaches to consider. Further, this compendium could serve as a single reference point for tried and true practices that showed real results, enabling civic leaders and others to make informed decisions about their future trash prevention program investments based on the experiences of others.

COMPENDIUM OVERVIEW

The best way to keep land-based trash and litter out of the ocean is to keep it from entering inland and coastal water bodies in the first place. This can be achieved by a number of great practices that vary in their activity and approach, activity-related costs, and duration of the activity after which a measure of progress can be marked. Some great practices presented in this compendium showed a reduction in the amount of trash entering waterways by affecting behavior change. Other great practices incorporated waste management infrastructure solutions and innovative aquatic trash capture and removal devices to make an impact. This compendium provides general information on varied great practices that achieved results in reducing and preventing the amount of trash in and entering waterways.

What can be done to address mismanaged trash and litter? One approach is to manage it before it even hits the ground. The *Municipal Trash Can Pilot* great practice demonstrated that providing a recycling bin and a trash can with a tightly fitting lid to residents in a given neighborhood can help address litter, illegal dumping, dirty streets, dirty alleys, and rat infestations. Another approach to address mismanaged trash and litter includes affecting behavior change through public outreach and education. The *Trash Free Schools Project* addresses the issues of mismanaged trash and littering by educating and empowering students, faculty, and staff to reduce their school's waste footprint while implementing a strong litter prevention strategy. Another approach to consider includes combining public education and awareness to affect a change in littering and illegal dumping behaviors of residents within a watershed. This can bring a reduction in the number of residents who litter and increase the number of residents opting to use trash cans. This result was seen from the *Regional Litter Prevention Campaign* that educated and inspired such a positive change in littering behavior. Philadelphia's city-run *Streets and Walkways Education and Enforcement Program* produced similar results of reducing litter while supporting and enhancing individual and community efforts to maintain a clean city. An additional result, due in part to the program, was an increase in recycling rates. Another option to affect behavior change related to littering and illegal dumping is to raise public awareness of the legal consequences of those behaviors, while increasing enforcement efforts. With public education, officer education, and litter/litter-related law enforcement, the *Litter and Illegal Dumping Enforcement Month* proved effective in Maryland, Virginia, and the District of Columbia as the number of citations issued for activities including littering, abandoned property, and illegal dumping showed a consistent decrease. The last example of an approach to affect behavior change is the implementation of a *Bag Bill*. Within three years of the law

taking affect in the District of Columbia, residents reduced their use of disposable bags, while businesses saw a reduction in the number of plastic bags issued to customers.

While trash cleanups alone are not a long-lasting, sustainable solution to the aquatic trash problem, when used in tandem with other prevention and reduction efforts, the collection of mismanaged trash on land, as well as the capture and removal of aquatic trash, can be impactful. For example, the *Alley Cleaning Initiative* used a combination of truck sweepers and laborers that resulted in a decline in the number of dirty alley service requests. This effort helped prevent land-based trash from entering nearby waters. For trash that has entered waters, a trash interceptor might be an option for aquatic trash removal. The *Baltimore Water Wheel Trash Interceptor* removed tons of trash from the Baltimore Harbor with a cost well below that for removing the same trash using alternative methods, such as skimmer boats. Another option to consider is the use of an in-stream device to capture aquatic trash at hotspots within a sewershed. The *Anacostia River Trash Trap Program* showed that such devices might be useful.

What's happening where you live? Are the waters trash free? Are there approaches in place to address aquatic trash and to prevent it from entering nearby waters? Can any of these great practices prove useful in your watershed?

COMPENDIUM DEVELOPMENT

TFW regional strategies consist of projects identified and developed by stakeholders to reflect their needs and concerns. The development and implementation of the project-based regional strategies follow a systematic, three-phased approach:

Phase I: Reconnaissance – engage in a dialogue with government, businesses, non-governmental organizations (NGOs), and citizen stakeholders to understand the aquatic trash and litter issues of a given area.

Phase II: Planning and Strategy – facilitate the process through which stakeholders generate ideas for actions to remove and reduce barriers to aquatic trash prevention.

Phase III: Tactics and Action – support project collaboration and implementation, as well as measuring results to determine if such efforts bring a reduction in aquatic trash.

In 2013, EPA initiated this approach for project identification in the Mid-Atlantic (which includes the states of Pennsylvania, Delaware, Maryland, and Virginia, as well as key cities such as Philadelphia, Baltimore, the District of Columbia, Richmond, and cities in the Hampton Roads area). EPA engaged with stakeholders throughout the region via on-site meetings and conference calls, which in turn fostered a collaborative ethos. During these dialogue sessions in the Mid-Atlantic, stakeholders repeatedly asked that EPA create a great practices compendium to identify policies, programs, and initiatives that showed superior results with regard to reducing/preventing aquatic trash. Hence, the great practices compendium was endorsed as one of the priority activities for the TFW strategy and projects in the Mid-Atlantic region.

For purposes of this compendium, a great practice for maintaining trash-free waters is an activity, technology, program, or initiative that prevents trash from entering the aquatic environment and/or reduces

the volume of aquatic trash. The practice must demonstrate progress toward stated trash prevention and/or reduction goals, and must show a clear return on investment.

This edition of the compendium presents great practices in the Mid-Atlantic region with the following information template:

- Area of impact,
- Description of activity,
- Measure(s) of progress,
- Activity-related costs,
- Duration of activity,
- Partners and participants, and
- Point of contact for more information.

The information in this document was requested by EPA from principal organizations responsible for each practice. EPA may have edited the text provided by regional project leaders for purposes of clarity, consistency, and completeness. This document was prepared for informational purposes only. The information provided herein should not be cited or quoted as the endorsed views or policies of EPA. The projects are not listed in a particular order.

D.C. BAG BILL



AREA OF IMPACT

District of Columbia

DESCRIPTION OF ACTIVITY

In 2009, the District of Columbia (District) enacted the Anacostia Restoration and Protection Act, or “Bag Bill.” This Act requires all District businesses that sell food or alcohol to charge a five-cent fee for each disposable paper or plastic bag distributed with any purchase. Restaurants with seating are exempt from this requirement. The District Department of Environment (DDOE) is responsible for enforcing the law; DDOE staff is responsible for inspecting whether District businesses are in compliance.

MEASURE OF PROGRESS

In 2013, DDOE funded the Alice Ferguson Foundation and the Anacostia Watershed Society to conduct a survey to quantify changes in bag use since implementation of the Bag Bill. The survey also measured attitudes and experiences with the law. The following are major findings of the survey:

- 80% of District residents reduced their use of disposable bags since the law took effect.
- Households currently estimate using four bags a week versus ten bags a week before the law took effect.
- Businesses provide an average of 50% fewer bags.
- 67% of residents and 68% of businesses reported seeing less plastic bags found as litter today versus three or four years ago.
- 50% of businesses have saved money as a result of the Bag Law.
- 83% of residents and 90% of businesses either support or are indifferent to the Bag Law, with only 16% of residents and 8% of businesses feeling bothered by the law.

ACTIVITY-RELATED COSTS

For more information, please reach out to the point of contact provided below.

DURATION OF ACTIVITY

The law was officially implemented on January 1, 2010.

PARTNERS AND PARTICIPANTS

The District government continues to welcome the active participation by many local community groups to assist the public to develop a strong understanding of the Bag Bill. Local businesses provide opportunities for consumers to utilize alternatives to disposable paper or plastic bags. In addition, local non-governmental organizations and other District government agencies help aid in the enforcement of the law. For more information on these activities, contact Matt Robinson of the DDOE.

POINT OF CONTACT FOR MORE INFORMATION

Matt Robinson, Environmental Protection Specialist, District Department of the Environment, Stormwater Management Division, Program Implementation Branch, matthew.robinson@dc.gov, 202-442-3204

ANACOSTIA RIVER TRASH TRAP PROGRAM



AREA OF IMPACT

District of Columbia

DESCRIPTION OF ACTIVITY

The Anacostia River has been listed for trash on the District of Columbia's 303(d) list since 2006. In 2010, the District, in partnership with the State of Maryland and U.S. EPA Region III, finalized a total maximum daily load for trash in the Anacostia River.

Since 2009, the District has implemented a grant program known as the "Demonstration of Trash Reduction Technologies" to fund local non-governmental organizations to design and install best management practices to capture trash found in the Anacostia River and its tributaries. In 2009, this grant program awarded grants to two local non-governmental organizations, the Anacostia Watershed Society and Earth Conservation Corps, to install in-stream devices to capture trash. Since then, a total of six devices have been installed through this grant program. Design types have ranged from custom to proprietary designs. In terms of proprietary designs, two of the District's grantees, Anacostia Riverkeeper and Earth Conservation Corps, have elected to install Bandalong litter traps, a design which originated in Australia. The District is the first jurisdiction in the western hemisphere to install this design.

The District targets "hotspot" sewersheds for installation. These are highly "piped" areas of the city that are part of the municipal separate storm sewer system. These sewersheds typically drain to three or fewer outfalls, allowing the District to collect trash originating from a large area. The Demonstration of Trash Reduction Technologies grant program has funded the installation of trash traps at two such hotspots.

MEASURE OF PROGRESS

Since the installation of the first trash traps in 2009, these traps have captured over 25,000 pounds of trash from the Anacostia River and its tributaries. The success of each trash trap is highly dependent on where it is installed. The District is also using these traps to capture important monitoring data on the types of trash found in its waterways. For example, the Anacostia Watershed Society has worked with community volunteers to remove 12,976 pounds of trash from the Nash Run trash trap between March 2009 and

August 2014. Data from this trash trap shows a decline in the number of plastic bags entering the river since the implementation of the Anacostia River Clean Up and Protection Act of 2009 (commonly referred to as the “Bag Bill”) in the District. Volunteers also produced photographs of collected trash that depict significant counts of Styrofoam consumer products, which aided in the enactment of a ban on polystyrene in the District and Montgomery County, Maryland.

ACTIVITY-RELATED COSTS

Through the District’s Demonstration of Trash Reduction Technologies grant program, six trash traps were acquired and installed. This grant program is primarily funded through revenue collected by the District’s \$0.05 fee on plastic bags.

Project costs vary based on the type of trash trap installed. For the Bandalong Litter Traps, costs associated with designing, building, and installing the trap ranged from \$50,000 - \$100,000. These costs are highly dependent on installation site conditions. Annual maintenance costs for the Bandalong Litter Trap ranged from \$28,000 - \$44,000 per year. Such maintenance costs are dependent on the amount of trash captured by each trash trap. For custom design trash traps, costs associated with designing, building, and installing the trap ranged from \$6,000 to \$10,000. Only preliminary estimates were available regarding annual maintenance costs for a custom design trash trap which ranged from \$27,000 - \$30,000 per year.

DURATION OF ACTIVITY

Trash trap installation began in 2009. The District anticipates maintaining all trash trap devices indefinitely, pending available funding.

PARTNERS AND PARTICIPANTS

The District Department of the Environment has partnered with local non-governmental organizations to design, install, and maintain these devices. Stormwater Systems, Inc., of Cleveland, GA, was sub-contracted by Earth Conservation Corps and Anacostia Riverkeeper to design and install all Bandalong Litter Traps. The non-governmental organizations that have participated in this program so far include the Earth Conservation Corps, Anacostia Riverkeeper, Anacostia Watershed Society, and Groundwork Anacostia River D.C. These volunteer efforts help keep public costs down and foster a greater sense of community pride and environmental awareness about the importance of litter prevention, particularly among young people in urban neighborhoods.

POINT OF CONTACT FOR MORE INFORMATION

Matt Robinson, Environmental Protection Specialist, District Department of the Environment, Stormwater Management Division, Program Implementation Branch, matthew.robinson@dc.gov, 202-442-3204

SWEEP



AREA OF IMPACT

Philadelphia, Pennsylvania

DESCRIPTION OF ACTIVITY

Streets and Walkways Education and Enforcement Program (SWEEP) is a City-run program created in June 1991 to educate Philadelphia citizens about their responsibilities under the Sanitation Code. SWEEP initially focused on commercial areas, but has expanded to other areas over time. Through education and enforcement, SWEEP supports and enhances individual and community efforts to maintain a clean city.

The program costs approximately \$2.3 million annually, and employs 60 SWEEP officers. These officers enforce the law against violators through intensified street patrols by uniformed litter enforcement officers, computerized tracking of code violation notices, and speedy adjudication of violations. In cases of non-compliance, SWEEP officers will issue warnings and citations to the appropriate individuals. SWEEP officers also work with residential communities to address problem locations. Specially trained civilian officers meet with the individuals responsible for the operation of businesses and apartment buildings to review cleanup responsibilities.

MEASURE OF PROGRESS

The SWEEP program has helped to reduce litter and increase recycling in the City of Philadelphia.

In each of the past several years, SWEEP issued fewer citations for littering than the previous years. SWEEP issued 145,300 citations in 2014, down slightly from a high of 155,500 in 2013. In 2015, SWEEP is on track to issue even fewer citations, with a projection of 128,000. This decrease in citations is one indication that SWEEP is working.

The City of Philadelphia's Litter Index supports the conclusion that the amount of littering in the city is decreasing. In 2009, the Litter Index reported that 72 out of 109 (66%) index areas were "Significantly Littered," "Excessively Littered," or "Extremely Littered." By 2014, only 8 out of 109 (7%) index areas were "Significantly" or "Excessively Littered," with no "Extremely Littered" areas.

Further, the City of Philadelphia substantially increased its volume of recycled materials since the inception of SWEEP. Recycling has increased from an average of 45,000 tons per year in the 1990s to approximately 127,000 tons in Fiscal Year 2014. This increase is in part due to SWEEP education and outreach efforts.

Additionally, SWEEP maximizes every opportunity to educate residents, community groups, businesses, churches and schools on the importance of the city's Streets Department rules and regulations. SWEEP Officers formally educate the public in a variety of ways including community meetings and school presentations; conducting media events and interviews; staffing special events; hosting seminars; issuing formal print and e-letters; and posting press releases. Informal educational opportunities include engaging citizens by canvassing door-to-door and disseminating information to patrol, phone, email, and social media contacts.

Finally, SWEEP has a built-in targeted learning process. For instance, in 2006, a pilot study was conducted in the lowest performing recycling areas of the city to determine what form of enforcement stimulated residents to recycle: education, warnings, or a citation. The study revealed that people are more likely to recycle after receiving a warning.

ACTIVITY-RELATED COSTS

The program costs approximately \$2.3 million annually.

DURATION OF ACTIVITY

SWEEP was created in June 1991 and continues to be implemented.

PARTNERS AND PARTICIPANTS

Philadelphia More Beautiful Committee, Keep Philadelphia Beautiful, UNLITTER US, and RECYCLEBANK.

POINT OF CONTACT FOR MORE INFORMATION

Keith Warren, keith.warren@phila.gov

ALLEY CLEANING INITIATIVE



AREA OF IMPACT

Baltimore, Maryland

DESCRIPTION OF ACTIVITY

The Alley Cleaning initiative by the Bureau of Solid Waste (Bureau) is an effort to use technology (alley cleaning sweepers) to keep alleys clean and reduce trash and litter. Alleys in Baltimore are the main collection sites for trash and tend to be small, compact, and close together. As such, alleys are natural magnets and conduits for trash and litter.

Currently, the Bureau responds to dirty alley requests with a truck, driver, and laborers to physically clean dirty alleys reported. The aim of this initiative is two-fold:

1. Clean alleys quickly and effectively with one employee using one machine;
2. Clean alleys on a proactive basis before the problem builds and light trash and debris attracts more, and oftentimes heavier trash, including bulk items such as furniture and mattresses. When such trash items accumulate, additional resources must be committed to clean the site.

Since the start of the program on August 1, 2014, the Bureau has calculated the number of dirty alley service requests per month in the selected pilot neighborhoods and is tracking the trends.

MEASURE OF PROGRESS

As of early 2015, there has been a 10% decline in the number of dirty alley service requests overall in the pilot neighborhoods since program inception in August 2014. Some neighborhoods have seen up to a 20% and 40% decline in the number of dirty alley service requests. The indirect benefits of the Alley Cleaning Initiative include increased neighborhood pride in seeing clean alleys throughout the community. Trash filled alleys give the appearance of neglect and inattention which creates an environment ripe for illegal activities that can only flourish in such “civic blind spots.” Those involved with this initiative indicated that an additional benefit of alley cleaning is the fostering of strong investments from within and outside the community.

ACTIVITY-RELATED COSTS

The initial capital outlay for the purchase of the three sweepers totaled \$551,526. The annual operating costs of the three sweepers, including personnel and maintenance, was approximately \$180,000.

DURATION OF ACTIVITY

The Alley Cleaning Initiative started on August 1, 2014 and continues operation.

PARTNERS AND PARTICIPANTS

The Bureau of Solid Waste, along with the Baltimore Sustainability Commission, the Waterfront Partnership, Blue Water Baltimore, and other environmental groups.

POINT OF CONTACT FOR MORE INFORMATION

Valentina I. Ukwuoma, valentina.ukwuoma@baltimorecity.gov, 410-396-5134

MUNICIPAL TRASH CAN PILOT



AREA OF IMPACT

Baltimore, Maryland

DESCRIPTION OF ACTIVITY

The Municipal Trash Can Pilot is an important effort to reduce litter and improve city cleanliness. The distribution of 9,250 carts on wheels (trash cans with a 65 gallon holding capacity) and recycling bins (with a 25 gallon holding capacity) to select neighborhoods in the Belair Edison and the Mondawmin areas is an effort to gauge whether keeping trash in containers can drastically reduce litter and improve the cleanliness of these neighborhoods.

Consequently, the Bureau of Solid Waste (Bureau) conducted a baseline assessment of the pilot areas for sanitation service requests before the pilot started on July 2, 2014. Service requests for illegal dumping, dirty streets, dirty alleys, and rat abatement were calculated for the target neighborhoods.

The Bureau will continue to track these numbers for 12 months and will compare them monthly from year to year to look for improvements in the number of service requests created. Trash that is set out in bags and not contained in trash cans with tight-fitting lids, are prone to rip open, spilling the contents out. This leads to the trash being spread across the alley and/or street. It also provides food for rodents, as well as stray cats and dogs, which can further spread the trash through the neighborhoods. The intent of the Municipal Trash Can Pilot is to demonstrate how providing contained trash cans and recycling bins to residents will eliminate this problem, reduce litter, and increase neighborhood cleanliness.

MEASURE OF PROGRESS

Since the pilot began in July 2014, there have been 108 fewer calls for rat eradication from the pilot neighborhoods and 23 fewer requests to clean dirty alleys, when compared to the same time period the previous year. Additionally, the pilot neighborhoods have shown a 26% to 37% increase in recycling when compared to the same time period the previous year.

It is assumed that a city-wide roll out would lead to significant reductions in the rat population and generally cleaner alleys and streets. Further, reductions to the rat population would likely result in fewer workers' compensation claims and other public health benefits. While definitive cost savings cannot be calculated at this time, it is believed that potential savings in these areas would easily cover the initial outlay of funds necessary to expand the program.

ACTIVITY-RELATED COSTS

Project related costs came to \$600,000 when carried out in select neighborhoods. A city-wide roll out of the program is estimated to cost between \$10 and \$12 million.

DURATION OF ACTIVITY

The Municipal Trash Can Pilot started on July 2, 2014 and continues operation.

PARTNERS AND PARTICIPANTS

The Bureau of Solid Waste; Greater Mondawmin Coordinating Council; Belair-Edison Neighborhoods, Inc.; Belair Edison Neighborhood Association, and Healthy Neighborhoods.

POINT OF CONTACT FOR MORE INFORMATION

Valentina I. Ukwuoma, valentina.ukwuoma@baltimorecity.gov, 410-396-5134

BALTIMORE WATER WHEEL TRASH INTERCEPTOR



AREA OF IMPACT

Baltimore Inner Harbor, Maryland

DESCRIPTION OF ACTIVITY

In May 2014, the Waterfront Partnership, working with Clearwater Mills, installed the world's first ever solar-powered water wheel trash interceptor at the mouth of the Jones Falls in Baltimore's Inner Harbor. The primary stated goal for this effort was to greatly reduce the amount of trash flowing from Jones Falls into Baltimore's Inner Harbor. The secondary goal was to show that water wheel trash interceptors are a cost efficient way to remove trash from water.

Depending on precipitation, the Baltimore Water Wheel Trash Interceptor (Water Wheel) collects anywhere from 2 tons to 75 tons of floating debris from the Baltimore Inner Harbor every month. In the period between May 2014 and June 2015, the Water Wheel has collected 278 tons of trash consisting of 157,130 plastic bottles, 204,419 polystyrene containers, 5.7 million cigarette butts, 3,336 glass bottles, 81,420 grocery bags, 130,219 chip bags, and 940 sports balls.

So far, the Water Wheel has exceeded all expectations and is removing tons of trash from the Baltimore Harbor at a cost well below the cost of removing the same trash using alternative methods such as skimmer boats. Additionally, the Water Wheel is powered by renewable resources (solar and hydro) and operated via the Internet, thereby requiring fewer resource hours than skimmer boats.

MEASURE OF PROGRESS

In addition to estimating the amount of trash removed by the Water Wheel from entering into the Inner Harbor, the progress is being tracked against the cost efficiencies of the trash skimmer operations of the

Department of Public Works. While data is limited, initial findings show that the Water Wheel is a cost efficient technology for supplementing the work of skimmer boats when implemented in suitable locations. Water Wheels can capture the majority of trash and debris coming from a specific outfall, allowing skimmer boats to focus on other areas. The Baltimore Water Wheel Trash Interceptor removes trash at a cost of \$430 per ton.

Interestingly, all of the outreach and education that resulted from the popularity of the Water Wheel was an added bonus and was not part of the initial program intent. The Water Wheel has had a lot of media attention, including front page news stories on NBC, a story on National Public Radio, and a Ford Motor Company commercial focused on the Water Wheel.

ACTIVITY-RELATED COSTS

The capital costs of the Baltimore Water Wheel Trash Interceptor were \$800,000. Ongoing operation and maintenance costs vary based on rain events but are estimated at \$130,000 annually.

DURATION OF ACTIVITY

The Baltimore Water Wheel Trash Interceptor was installed in May 2014 and is still in operation.

PARTNERS AND PARTICIPANTS

Waterfront Partnership of Baltimore, Constellation Energy, the Maryland Port Administration, the Abell Foundation, and the Baltimore City Department of Public Works.

POINT OF CONTACT FOR MORE INFORMATION

Adam Lindquist, Manager, Healthy Harbor Initiative, Waterfront Partnership of Baltimore, Inc.
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REGIONAL LITTER PREVENTION CAMPAIGN



AREA OF IMPACT

Maryland, Virginia, and the District of Columbia

DESCRIPTION OF ACTIVITY

Recognizing the importance of public education and awareness in creating behavior change, the Alice Ferguson Foundation created the Regional Litter Prevention Campaign (Campaign) to change littering behaviors of residents in the Potomac Watershed. The campaign consists of a toolkit that includes advertisement and visuals, communication and community outreach pieces; these are meant to fit effortlessly into existing programs. The Campaign is designed to be implemented at the community grassroots level, as well as the broad jurisdictional level, in order to best reach the target audience of “trashers” (those who litter), community leaders and members, local businesses, and the media.

The Campaign allows communities and jurisdictions to build awareness of residents and local businesses to the harmful nature of litter, which will help to drive behavior change among litterers in their area. The end goal of the Campaign is to create a lasting reduction of litter in the Potomac Watershed by educating and inspiring a positive change in littering behavior. In order to achieve this goal, the Alice Ferguson Foundation is looking for new jurisdictions and communities to implement the Campaign for the message to have widespread impact. The Campaign implementation occurred as follows:

- **2008-2010.** The Alice Ferguson Foundation conducted social research in order to develop a regional public outreach and education campaign to understand the root causes of littering and to change littering behaviors.
- **2010.** Media and message consultants were hired to research, develop and implement campaign plans and materials based on the findings from the social research.
- **2011.** The Campaign was piloted with grassroots outreach strategies in the community of Deanwood and through a broader jurisdictional approach in Montgomery County, Fairfax County, Arlington County, the District of Columbia, and Prince George’s County.
- **2012.** The Campaign expanded to the communities of Forest Heights and Oxon Run, both in Maryland.
- **2013.** The grassroots Campaign effort was further expanded to include Capitol Heights South to Forest Heights in Prince George’s County and the District of Columbia Wards 5, 6, 7, and 8.

MEASURE OF PROGRESS

Evaluating of the Campaign deployment (both scope and scale) is done via regular contact with partners and tracking outreach efforts of staff.

Three methods used to evaluate the effectiveness of changing behavior include: phone interviews, door-to-door interviews, and direct behavioral observations. The first two aforementioned methods were not effective ways at evaluating effectiveness due to biases related to self-reporting and because many of the people reached had not been exposed to the Campaign. The direct behavioral observations were effective because it was done at sites in close proximity to where Campaign material was posted, increasing the likelihood of the pedestrians being exposed to the Campaign.

A 45% reduction in the number of litterers and a 77% increase in the number of people throwing trash into litter cans were observed before and after the Litter Campaign materials were posted at four sites in Prince George's County in 2013.

The Campaign was evaluated at four sites in Prince George's County, and a 45% reduction in the number of litterers was observed after the Campaign was initiated.

ACTIVITY-RELATED COSTS

The total costs for this Campaign approximated \$776,000 during the timeframe of 2008 to spring 2014. Of those costs, 17% were in-kind donations.

Of the total amount, 38% was spent on research and development, 51% was spent on implementation, 9% was spent on evaluation, and 1% was spent on other activities.

DURATION OF ACTIVITY

The Regional Litter Prevention Campaign was launched in winter 2011 and continues.

PARTNERS AND PARTICIPANTS

County Partners include The District of Columbia, Arlington County, Fairfax County, Montgomery County, and Prince George's County.

Community partners include businesses, civic associations, schools, community groups, faith-based organizations, citizens, parks, recreation centers, libraries, and others.

POINT OF CONTACT FOR MORE INFORMATION

trash@fergusonfoundation.org, 301-292-5665

Program Website:

<http://fergusonfoundation.org/trash-free-potomac-watershed-initiative/education/litter-prevention/>

TRASH FREE SCHOOLS PROJECT



AREA OF IMPACT

Maryland and the District of Columbia

DESCRIPTION OF ACTIVITY

The Trash Free Schools Project works to educate and empower students, faculty, and staff to reduce each school's waste footprint by providing education and resources, including a comprehensive guidebook, to aid in rethinking, reducing, reusing, and recycling. As part of the project, students and staff at K-12 schools will have the resources needed to investigate an environmental issue while implementing a strong waste reduction and litter prevention strategy. An easy eight-step process guides schools in creating a green team and building momentum from year to year.

The Trash Free Schools Project:

- Creates an active and environmentally-aware school culture by increasing participation and engagement among the school body.
- Fosters environmental stewardship through student action by teaching the process of how to recognize, investigate, and take action on an environmental issue.
- Allows schools to gain recognition as an environmental leader among schools and establish a starting point for other "green" certification programs.
- Integrates waste reduction and environmental themes into lessons and curricula.
- Provides service learning opportunities for students.

MEASURE OF PROGRESS

Participating schools are graded on their activities using the Trash Free Schools Report Cards. This self-study, conducted at the end of the school year, measures action items, including school-wide education, effectiveness of a recycling program, and sustainability of the program in subsequent years. Points are assessed based on how well each program performs, and they are given a letter grade to assess their progress. All reporting schools indicate a new Trash Free indicator to be incorporated each year. Examples of an indicator can include: recycling bins in each classroom, bin monitoring for appropriate materials, and organizing a schoolyard cleanup. Trash Free Schools currently reaches 5,500 students in Maryland and 3,000 students in the District of Columbia each year.

ACTIVITY-RELATED COSTS

The activity-related costs are roughly \$15,000 annually. The program is free for participating schools.

DURATION OF ACTIVITY

This project runs throughout the school year – from late August until the middle of June.

PARTNERS AND PARTICIPANTS

Although many partnering schools join through educational outreach programs and the Regional Litter Prevention Campaign, which is also an initiative by the Alice Ferguson Foundation, any school can participate. As of August 2015, 23 schools participate in this program; a list of currently participating schools can be found on the program website provided below.

Additional partners include the National Oceanic and Atmospheric Administration, District of Columbia Department of the Environment, District of Columbia Schools, Prince Georges County Public Schools, Montgomery County Public Schools, Prince George's County Department of Parks and Recreation, and Horton's Kids of District of Columbia.

POINT OF CONTACT FOR MORE INFORMATION

trash@fergusonfoundation.org, 301-292-5665

Program Website:

<http://fergusonfoundation.org/trash-free-potomac-watershed-initiative/education/trash-free-schools/>

LITTER AND ILLEGAL DUMPING ENFORCEMENT MONTH



AREA OF IMPACT

Maryland, Virginia, and District of Columbia

DESCRIPTION OF ACTIVITY

The Alice Ferguson Foundation and its partners work to raise awareness of the legal consequences of littering, illegal dumping, and related crimes. Further, the Alice Ferguson Foundation raises awareness of the social and environmental effects that littering has on our communities, our economy, and the Potomac Watershed. In addition, there are increasing enforcement efforts through Litter Enforcement Month and training law enforcement officers about the importance of enforcing litter and litter-related laws. By increasing enforcement efforts, the hope is to educate the public and provide incentives for behavior change.

The mission of Litter and Illegal Dumping Enforcement Month is to raise awareness of litter, illegal dumping, and related crimes; the laws associated with them, and their social and environmental effects on our communities, our economy, and the Potomac River.

On March 22nd, 2011, the Litter Enforcement Working Group met at the Metropolitan Washington Council of Governments at which point goals for Litter Enforcement Month (LEM) were confirmed. Participating Jurisdictions agree to four actions, an alternate for non-code enforcement agencies, such as Sheriff's offices, was added in 2012:

Public Education: The communities served will be educated about the effects of litter and the legal ramifications of being caught. This can be done through a variety of outreach approaches using media outlets, posters, and community meetings.

Officer Education: During LEM, officers will be encouraged to enforce litter and litter related laws by being taught about the effects of litter and reminded how to enforce them. This can be accomplished by providing information during officer roll call announcements and officer training, as well as posting flyers.

Enforce and Track Citations: Throughout LEM, participating jurisdictions will keep track of any citations, violations and other reports concerning litter, illegal dumping and related laws which include the following: Blight, Hoarding, Most-littered areas, Uncovered hauls, Graffiti, Abandoned Property, Illegal Tire hauling or piling, Loitering, and Snipe Signs

Reporting Out: Inform the Alice Ferguson Foundation of their efforts during LEM by completing a simple, online survey and sharing newsworthy stories.

Alternate activity for non-code enforcement agencies: Engage Community Labor Forces or Alternative Incarceration Branches to participate in the Potomac Watershed Cleanup by reporting the trash picked up during the month of April.

MEASURE OF PROGRESS

The success of LEM is tracked through various metrics including ongoing participation, number of citations issued, community outreach efforts, and the amount of trash picked up for the month of April. In 2015, the Metropolitan Washington Council of Governments Police Chiefs Committee unanimously endorsed LEM. The 2014 LEM gave out 348 citations for activities including littering, abandoned property, and illegal dumping. This is a decrease in citations issued when compared to 643 citations issued in 2013 and 850 citations issued in 2012.

In 2014, 400 Metro Transit Police were reminded about LEM activities. The effort has also attracted attention from news outlets with LEM 2014 being featured in 4 local newspapers and a radio show.

ACTIVITY-RELATED COSTS

Activity-related costs are roughly \$6,000 per year. This does not include the cost of training to participating groups.

DURATION OF ACTIVITY

This program has been implemented during the month of April of each year since 2011. Additionally, the Alice Ferguson Foundation undergoes six months of event planning, preparation, and evaluation.

PARTNERS AND PARTICIPANTS

Fourteen agencies from nine jurisdictions participated in LEM 2014:

Maryland: Montgomery County Police and Prince George's County Police.

Virginia: City of Alexandria Police, Code Administration, Sheriff's Office, and Transportation and Environmental Services; Prince William County Police and Neighborhood Services; Falls Church City Police; and Manassas City Police.

Additional Agencies: The District of Columbia Metropolitan Police; Metro Transit Police; and the United States Park Police.

POINT OF CONTACT FOR MORE INFORMATION

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Program Website:

<http://fergusonfoundation.org/trash-free-potomac-watershed-initiative/litter-enforcement/litter-enforcement-month/>