2014

ASSISTANCE AND POLLUTION PREVENTION OFFICE

YEAR IN REVIEW

OFFICE OF ENVIRONMENTAL STEWARDSHIP

US ENVIRONMENTAL PROTECTION AGENCY

REGION 1

EPA United States Environmental Protection Agency

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The Assistance and Pollution Prevention office works with businesses, academia, municipalities as well as many others, to promote sustainable practices. Some of those sustainable practices are highlighted in this report. Mention of a particular business and/or practice does not, however, constitute an endorsement by the Environmental Protection Agency.

INTRODUCTION

The Environmental Protection Agency's (EPA's) Region 1, Assistance and Pollution Prevention Office (A&P2), housed within the region's Office of Environmental Stewardship (OES), is a results-oriented, innovative team focused on environmental problem-solving. Our unique mission and structure allow us to develop assistance strategies that are integrated with enforcement approaches and other programs and to work with a large range of internal and external stakeholders to accomplish our common mission of protecting human health and the environment. This report summarizes our 2014 work in a number of critical areas including:

- Improving air quality by reducing hazardous air emissions and promoting compliance with the Clean Air Act;
- Working with communities to expand the use of green infrastructure designed to protect our water resources and to increase resilience to the effects of climate change;
- Providing technical assistance to municipalities to help them maintain critical water infrastructure;
- Supporting efforts that achieve sustainable materials management through source reduction in targeted waste streams such as food waste; and
- Providing financial assistance to state programs and other organizations whose mission is to prevent pollution from being generated in the first place.

Through this work, we develop and implement networks with many organizations including state and municipal governments, non-governmental organizations (NGOs), interstate organizations, trade associations, and businesses whose operations are regulated by EPA.

This work achieves results. Since 2011, we have provided assistance to almost 140,000 entities on Clean Air Act hazardous air pollution regulations, enrolled both shippers and carriers in the SmartWay diesel emission reduction program, and contacted nearly 600 communities regarding the need to assess the condition of their water infrastructure. At one event alone, we educated more than 6,000 people about green infrastructure through our Soak Up the Rain program. In other efforts, we contributed to the recovery of more than 34,000 tons of food through the Food Recovery Challenge. This report highlights many more results. None of this work could have been accomplished without the support of EPA's management and the dedication of A&P2 staff. Those of us fortunate enough to work in public service know that this is a privilege we cannot take for granted. All of us welcome your comments on any aspect of our work (see staff list at the end of the report) and look forward to meeting the challenges ahead in 2015 and beyond.

IMPROVING AIR QUALITY AND ITS ASSOCIATED CLIMATE IMPACTS

In 2014, in collaboration with other EPA programs, A&P2 provided technical and compliance assistance to a variety of target audiences including industrial sectors, small businesses, trade and professional associations, states, and others to improve air quality in our communities and to address the associated climate impacts by promoting **reduction of air toxics and diesel emission reduction**. Actions taken by those we've targeted with our assistance and outreach have resulted in a variety of outcomes including:

- Reductions in hazardous air pollutants and greenhouse gases;
- Increased understanding by our target audiences of compliance requirements as well as pollution prevention and conservation opportunities;
- Increased compliance with requirements;
- Increased conservation of energy and fuel;
- Increased community support and satisfaction;
- Stronger partnerships to find and implement sustainable solutions to environmental problems; and
- Improved ability to exchange information on available technologies.

Air Toxics: Reducing Hazardous Air Pollutants from Engines and Boilers

Outreach efforts contributed to shaping an improved model for how EPA can develop new and improved rules. This approach relies on developing user-friendly compliance materials, easy access to information, and readily accessible options for targeted training. Other regions have adopted this method and EPA Headquarters relied, in part, on Region 1's reciprocating internal combustion engines (RICE) and boiler websites as the basis for its national web pages.

The highly effective technique we used to reach our target audiences was "wholesale viral marketing" using webinars to reach hundreds of entities. Our team included EPA's national rule writers and technical experts as well as regional technical assistance staff, all of whom collaborated to develop appropriate training materials and online training. Our team worked with trade associations, state technical assistance providers, and consultants to publicize the webinars.

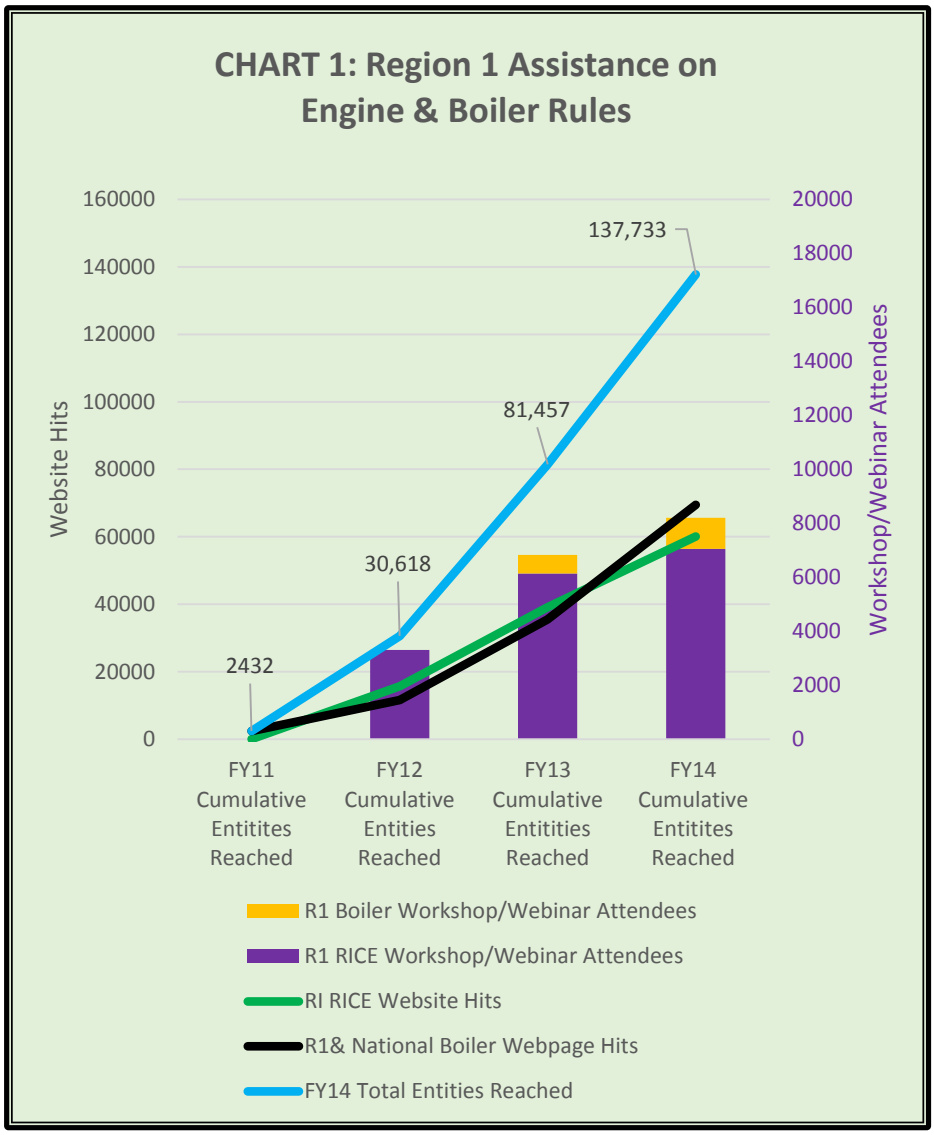
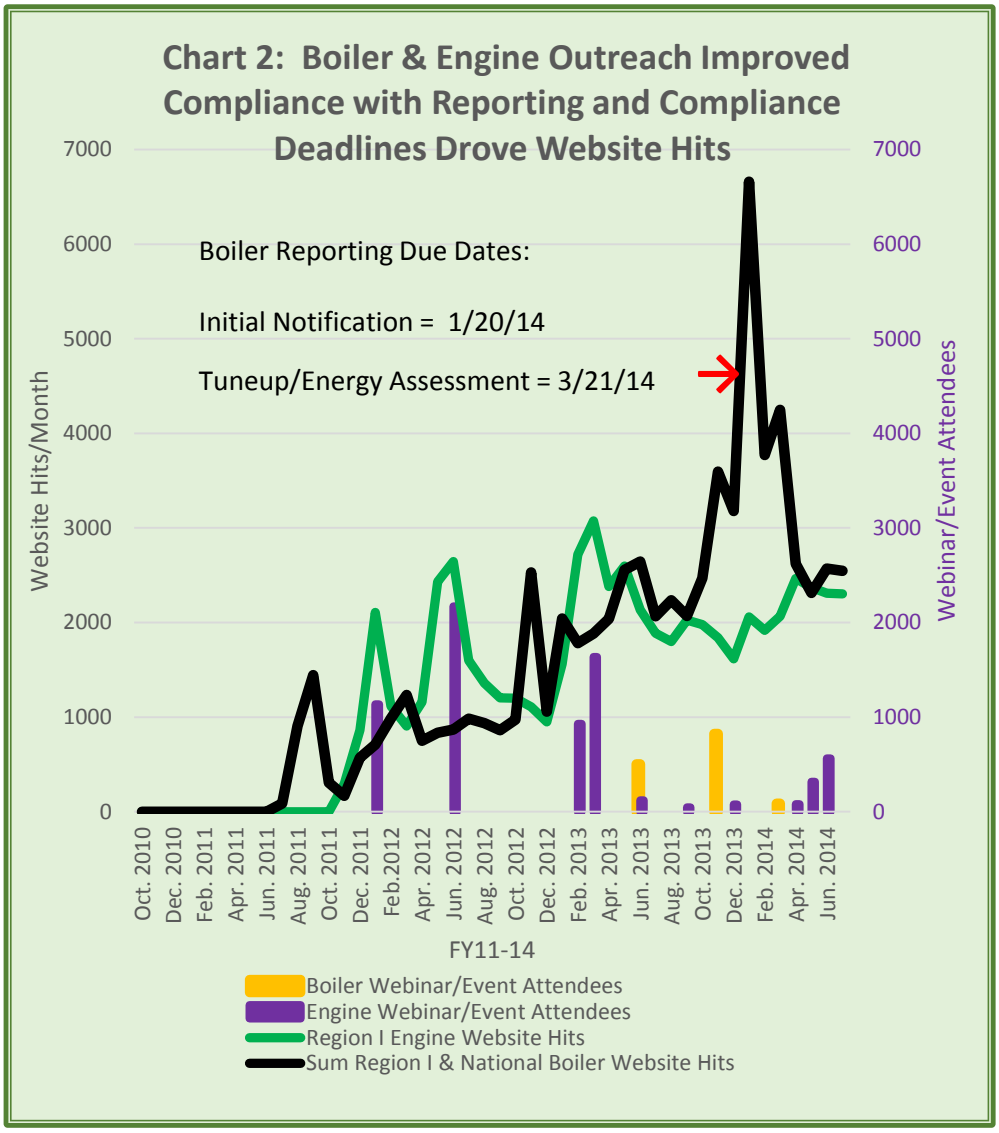


Chart 1 shows that since 2011, we have seen an increase in the number of attendees for our air toxics webinars and for those same years we have seen a corresponding increase in the number of website "hits" on our EPA webpages. This illustrates that our training, at least in part, created a pattern of people seeking out more information regarding how to comply with these new requirements.

The engines covered by the RICE rule are stationary, non-emergency units of virtually all sizes and configurations. They include diesel and gas-powered engines from small (e.g., 25 brake horsepower [bhp]) to very large (e.g., >1000 bhp). Boilers covered by the Boiler Area Source Rule include all oil, biomass, or coal-fired commercial, industrial, or institutional boilers of greater than 1.6 million British thermal units (BTUs) per hour input capacity. Gas-fired, electric, and residential boilers are excluded.



By the end of fiscal year 2014, A&P2's outreach on these new rules was nearing completion; however, tools and materials A&P2 developed are still available to trade associations and other professional groups in sectors with suspected, or actual, high rates of non-compliance. We will continue to offer assistance to help these organizations build capacity to conduct outreach on the RICE and boiler rules. **Chart 2** shows that our assistance and online training created demand for more information and we saw dramatic increases in people visiting our RICE and Boiler webpages in advance of reporting due dates.

RICE WEBINARS FOR WATER UTILITIES

Attendees at our RICE webinars for water and wastewater utilities provided EPA with valuable information about how they use engines and also expressed thanks to EPA for helping to clarify a complex and challenging set of regulations. Twenty-four percent of attendees said they would begin engine retrofits at their facilities. Others indicated they were considering newer, compliant engines.

A&P2 spotlight

Reducing Diesel Emissions

"Thank you once again. I particularly appreciated the "essentiality" statement you made about trucking as a whole. You always strike a great balance between policy objectives and real-world industry dynamics."

Andrew Boyle, Executive Vice President & CFO
Boyle Transportation

DIESEL - 2014

- Nationwide, SmartWay partners have saved 51.6M metric tons of CO2, 120.7M barrels of oil, and $16.8B in fuel costs since 2004.
- Approximately 7% of shipper partners and 2% of carrier partners are based in New England. Three carriers have joined SmartWay since January 1, 2014.
- Boyle Transportation, a SmartWay specialized truck carrier partner based in Billerica, MA, proudly accepted an EPA Region 1 Environmental Merit Award on Earth Day.
- Two quarterly e-updates each reached 700 New England partners, agencies, associations, and other SmartWay supporters.
- A&P2 presentations to railroads on regulatory and voluntary topics reached 250 attendees at two events held in March and April. Many more were reached via associations' distribution of meeting materials.
- In the first half of 2014, A&P2 staff responded to 40 complaints and inquiries relating to diesel emissions reduction in the freight sector. Locomotive idling complaints involved twelve communities.

Diesel emissions reductions leading to reduced greenhouse gases and fuel savings were achieved through both voluntary efforts and compliance assistance. With a goal of improving the fuel-efficiency of freight movement in the Northeast, A&P2 worked to reduce idling of stationary trucks and trains leading to improved air quality and reduced impacts on abutters of facilities. This work consisted of education on new regulations including EPA's locomotive engine and fuel rules and the coastal emissions control area standards for ports; direct assistance in addressing complaints about idling locomotives and trucks; and promoting voluntary action through recruiting new partners to SmartWay. SmartWay is a successful voluntary partnership program offering technologies and strategies to improve fuel efficiency that can be applied to vehicles (including locomotives), fleet operations, and facilities. An added benefit of A&P2's work was the collaboration between environmental and transportation agencies which furnished valuable insights into transportation agencies' plans, priorities, and policies, and facilitated engagement across agencies on ways to build in idling reduction.

Future directions for this work include increased SmartWay outreach to shippers and carriers to recruit and promote technologies and strategies; helping the Northeast Diesel Collaborative Ports & Goods Movement Work Group engage with EPA's new national ports initiative; fostering freight fuel-efficiency and emissions reductions by sister federal and state environmental, transportation, and energy agencies; increasing collaboration among agencies with the hope of increasing funding for, and use of, idle reduction technologies; building technologies and strategies into new facilities and operations; and increasing instances of "freight as a good neighbor" through planning, policy, collaboration, and operations that lend themselves to replication.

BROKERING SOLUTIONS TO COMMUNITY COMPLAINTS ON IDLING TRAINS IN BOSTON

In response to complaints about overnight and all-weekend locomotive idling at a rail yard in the greater Boston area, EPA assistance staff engaged the railroad and then arranged an onsite meeting with railroad personnel and the abutter. Through facilitated discussions, the neighbor and the railroad attained a better understanding of each other's circumstances and railroad representatives pledged to investigate the mechanical and procedural roots of idling at that location and eliminate it. Follow-up indicates that the abutting neighbor is very pleased and emissions are greatly reduced. This story illustrates the success of our efforts to address these complaints in communities regarding idling trains leading to satisfied citizens in our communities.

A&P2 spotlight

EPA United States Environmental Protection Agency

A PATH TO IMPROVED WATER QUALITY AND PLANNING FOR CLIMATE ADAPTATION

Infrastructure Management

"I work very hard to bring fresh, thought-provoking classes and seminars into Vermont. With the professionalism and years of experience that you two [EPA assistance staff] provide, the operators and system managers have greatly benefited."

Wayne Graham, Wastewater Specialist
Vermont Rural Water

"Through CMOMs [Capacity, Management, Operations and Maintenance Programs] we have purchased two pole cameras to perform spot sewer inspections. We are purchasing a new vactor truck ($375,000) to assist with our CMOMs program." [Vactor trucks (see photo) help with cleaning sewers and catch basins and have been very useful in emergency response.]

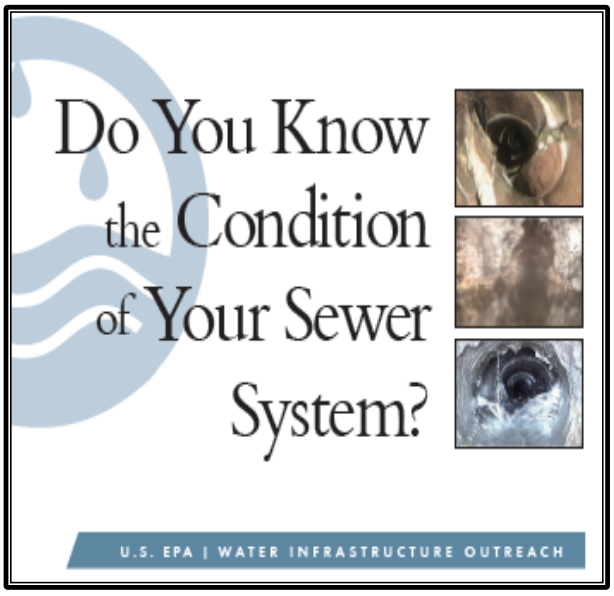
"The City has incorporated … asset management as part of our CMOMs program. All other DPW Divisions are standardizing on this system."
Feedback from the New Hampshire Department of Environmental Services gathered from wastewater systems in New Hampshire

Over the past several years, A&P2 has provided assistance to communities on current National Pollutant Discharge Elimination System (NPDES) permit compliance issues and encouraged planning for the renewal of aging municipal water infrastructures. Particular attention has been focused on smaller communities that may not have the staff and resources to tackle some of the more complex issues of aging water infrastructure. The benefits of better managing water infrastructure assets include improved emergency preparedness and response; improved budgeting; the ability to better respond to climate change; and improved compliance with the provisions of the Clean Water Act.

A&P2's municipal assistance staff promoted a suite of offerings to assist communities in an effort to further water infrastructure sustainability for compliance purposes as well as to help communities go beyond compliance. Our work often focused on municipal wastewater systems by addressing aging infrastructure issues in small and medium-sized municipalities throughout New England; however, issues of aging infrastructure are not limited to wastewater. Stormwater and drinking water infrastructure issues have been included both in our training programs and technical assistance.

Many New England communities have underground pipes that are more than a century old, and a reactive approach to maintenance will not ensure the long-term health of these collection, distribution and drainage systems. When the pipes fail, service is interrupted, leading to higher costs and substantial risk of environmental and property damage. (Photo shows sewer manhole with failing brickwork.)

In 2013, A&P2's efforts to increase municipalities' awareness about our nation's aging buried sewer systems led to the development of a brochure entitled "Do You Know the Condition of Your Sewer System?" This brochure is a tool to educate municipalities about the condition of their sewer systems. Knowing the condition of the sewer system leads to better management practices and is a necessary first step in planning for renewal and replacement of assets, a planning process known as "asset management." Thus, working with state contacts, the brochure, along with a state-specific letter, was mailed to nearly 600 New England communities and encouraged each community to budget for a condition assessment of their system.

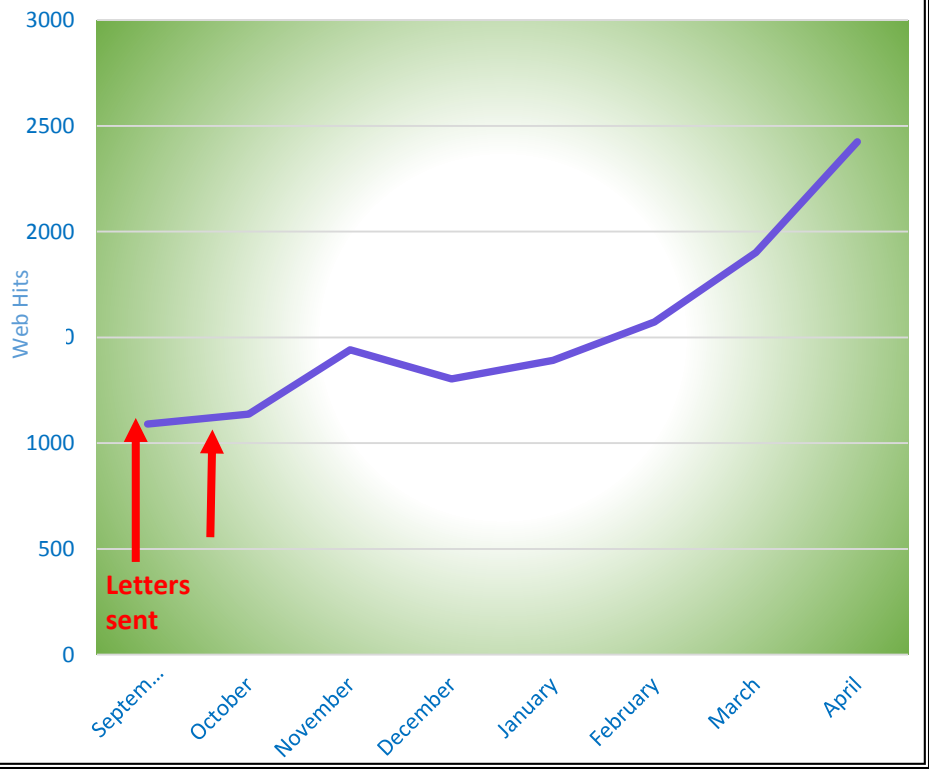


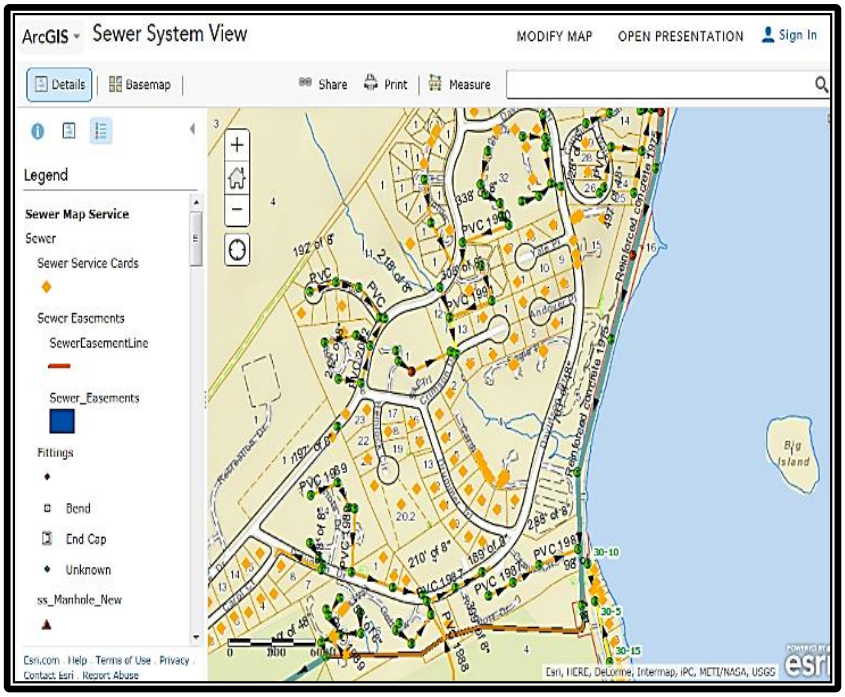
Understanding the condition of your sewer system also captures the knowledge of staff involved in maintaining each community's underground assets. This has become more important recently because a key municipal wastewater asset that is also aging is the workforce itself (a study by the Water Research Foundation projects that 37 percent of water utility workers and 31 percent of wastewater utility workers will retire over the next decade).

To address the workforce issue, A&P2 has been helping both our state partners and our training partners with Management Candidate School (MCS) programs. MCS is a twelve-month program that trains future water pollution control managers. Beginning with the Rhode Island Department of Environmental Management (RIDEM) in 2007, A&P2 has subsequently partnered with programs offered by the New England Interstate Water Pollution Control Commission (NEIWPCC), New Hampshire, and Maine (Maine's MCS includes drinking water operators). A&P2 has assisted these programs in teaching about Capacity, Management, Operations and Maintenance (CMOM) as well as environmental communication skills to the future water and wastewater utility managers.

Considerable effort this year focused on improving EPA's "Wastewater Collection System Toolbox" by including more current information, new tools, and case studies. In addition to the Condition Assessment brochure and budget letter, the team developed information to assist municipal managers and wastewater superintendents with managing private laterals, and infiltration and inflow. A spreadsheet template was also developed (and is currently being beta tested) to help systems manage condition assessment data once it has been collected.

CHART 3: This chart shows an overall increase in visits to our online Wastewater Collection System Toolbox following our outreach to municipal officials and wastewater system operators in September 2013. In April 2014 we noted nearly 2,500 web visits to these helpful tools.





The Team also developed a case study on low-budget mapping in Gorham, New Hampshire. This work showed how even a small community with limited resources can use electronic mapping to capture the physical information and improve the management of their wastewater infrastructure. While the New Hampshire NPDES permit requires that collection systems have a map of their sewers, moving from a paper map to an electronic map increases a community's ability to coordinate with other departments and prioritize work including maintenance, assessment (e.g., closed circuit TV (CCTV) inspection) and repairs.

INFRASTRUCURE MANAGEMENT

- A condition assessment brochure was distributed to nearly 600 New England communities.
- There have been over 7,000 web hits since the brochure and letter were distributed.
- Conducted over 45 CMOM reviews since NPDES permit issuance.
- Provided training on how to map with GPS (including development of a loan program) and loaning one of EPA's two available GPS units to 15 communities to map their underground infrastructure.

For municipalities, the best way to understand their water infrastructure systems is to map their system manhole by manhole, catch basin by catch basin, or hydrant by hydrant. To support this type of specific work, A&P2 implemented a global positioning system (GPS) training and loan program. We have trained dozens of communities in the systematic mapping process and have loaned GPS units to communities who are interested in field support for mapping so that they could begin the process of creating a digital map of their sewer, drinking water and/or stormwater systems. The maps can be used for planning and preventive maintenance as well as identifying trouble spots and conveying system information in a meaningful and powerful way.

In addition to tool development and mapping assistance, the team continued to provide presentations and training on asset management and CMOM and worked with state and training partners to develop concepts for asset management outreach. The goal is to help communities meet their regulatory commitments, promote better management practices and encourage realistic financial planning. As we move into the next fiscal year we look forward to providing continued training on these tools and providing technical assistance as people use them in their system operations.

WATER INFRASTRUCTURE CONDITION ASSESSMENTS

Compliance with NPDES permit requirements for Operations and Management plans and reports has been boosted by outreach and tools provided on our website. Condition Assessment training by A&P2 has not only focused on the permit requirements but also beyond-compliance improvements in emergency response, climate resilience and asset management principles. A combination of outreach, assistance and working with our state partners in New Hampshire has resulted in documentation of hundreds of miles of sewer evaluation. Reports filed annually under the permit describe thousands of dollars of needed investments in infrastructure that are being made with continued attention to this important asset.

A&P2 spotlight

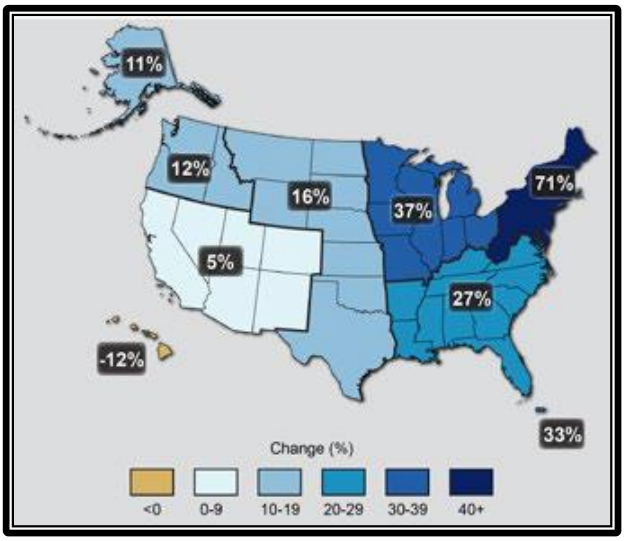
Green Infrastructure Implementation and Financing

"Investing in green infrastructure pays off for our environment and our economy. It reduces water pollution and energy consumption. It creates jobs and boosts local economic activity. And these investments help local communities build resilient systems to protect from severe storms, floods, and other impacts of climate change."

Gina McCarthy, Administrator
US Environmental Protection Agency

New England's rivers, lakes and seacoast make our region a very special place. Polluted stormwater runoff continues to be a significant problem for our water bodies, however, and is a particular concern in this region as our climate changes and the occurrence of heavy rainfall events (as shown in the map below) with ever larger volumes of runoff increases. Rain water becomes runoff as it flows from our roofs, sidewalks and roads. It enters storm drains carrying pollutants (such as fertilizer, animal waste, motor oil and sediment) it has picked up along the way to our local streams, rivers and other water bodies. Polluted stormwater runoff creates health risks and causes significant environmental and economic harm. In many New England communities, the traditional systems for managing stormwater – the gray infrastructure of storm drains, catch basis and pipes – are aging and inadequate to handle the runoff they receive.

The map shows percent increases in the amount of precipitation falling in very heavy events (defined as the heaviest 1% of all daily events) from 1958 to 2012 for each region of the continental United States. These trends are larger than natural variations for the Northeast, Midwest, Puerto Rico, Southeast, Great Plains, and Alaska. The changes shown in this figure are calculated from the beginning and end points of the trends for 1958 to 2012.
Source: Third National Climate Assessment Report (2014).



Green infrastructure (GI) is a complimentary, and potentially alternative, approach to managing stormwater that uses plants, soils and natural processes to reduce or prevent runoff. Utilizing infiltration, evapotranspiration, storage and reuse, GI practices can be implemented at varying scales – from the residential home to the watershed – and bring a wide range of environmental, social and economic benefits to a community. While many municipalities, businesses and citizens recognize the advantages of GI, some believe these practices will not work in New England's harsh climate or are cost-prohibitive to implement. These concerns are fueled by a lack of public education and unfamiliarity with GI performance and cost data. Further, New England communities find it difficult to adopt stormwater funding solutions and as a result underfund programs designed to control stormwater runoff.

GREEN INFRASTRUCTURE IMPLEMENTATION AND FINANCING

- Since 2010, Region 1 organized the installation of 13 rain gardens while providing hands-on training to 400 participants.
- Beginning in 2012, Region 1 created a Soak Up the Rain education and outreach campaign and associated tools.
- During 2013-2014, EPA sponsored 6 workshops covering a range of green infrastructure topics. More than 350 homeowners, representatives from state agencies, municipalities, planning organizations, and environmental organizations attended.
- Environmental Merit Award recipients included: Peter Hinrichs, formerly of YouthBuild Boston, Inc., who collaborated with EPA on the installation of rain gardens at EPA's New England Regional Laboratory and at Dewey Square in Boston (2013); the UConn Non-Point Education for Municipal Officials (NEMO) Program and Rutgers Cooperative Extension rain garden training team (2012); and Kent and Greenwich Hospitals and their landscape designers for promoting sustainable landscaping in healthcare settings (2012).
- More than 6,000 attendees visited the Soak Up the Rain exhibits at the 2014 Boston Flower & Garden Show.
- More than 50 stormwater and green infrastructure tweets were sent by the region in 2014.

To address these challenges, A&P2 is implementing a three-pronged strategy that focuses on communicating, incentivizing, and financing GI. Specifically, A&P2 has:

- Developed a citizen-based public outreach education program called Soak Up the Rain;
- Incentivized the use of GI best management practices by promoting green infrastructure installations (of rain gardens, for example) and trainings that include municipal and citizen participation, green job skill development, and the wide-spread use of GI technologies; and
- Promoted the development of municipal stormwater program funding strategies.

Encouraging Citizens to Soak Up the Rain

Region 1 launched Soak Up the Rain in 2012. Soak Up the Rain is a stormwater public outreach campaign designed to raise awareness about the problem of stormwater runoff and to encourage citizen action. Soak Up the Rain promotes green infrastructure practices such as the planting of trees, rain gardens and green roofs; the installation of rain barrels, permeable pavements and dry wells; and the redirection of downspouts. These are all actions that can be taken by residents, businesses and communities to help keep rain where it lands; soaking it into the ground, reducing runoff and the environmental problems caused by runoff. Soak Up the Rain educates citizens about the real costs of stormwater runoff and the incentives for citizen action.

While climate change is increasing the frequency of major rain storms in New England, it is our more frequent smaller storms or the early portion of larger storms that wash the greatest concentration of pollutants from our streets into our surface waters. It is what we call the "first flush." Smaller, decentralized green infrastructure practices, such as those promoted by Soak Up the Rain to reduce stormwater runoff, can be particularly effective at managing this first flush.

Soak Up the Rain connects residents, municipal decision makers, the business community, and others to resources and assistance. Soak Up the Rain provides tools such as a website, demonstration projects, grants, training programs, and outreach events to do this. Through social media, we also use Soak Up the Rain to promote the educational and training goals of New England stakeholders and showcase the many stormwater outreach programs led by state agencies, educational institutions, planning organizations, watershed organizations, and others.

Rain barrels and rain gardens are just two of the many ways to soak up the rain.

Getting the Message Out

Gardeners to the Rescue at the Boston Flower Show 2014

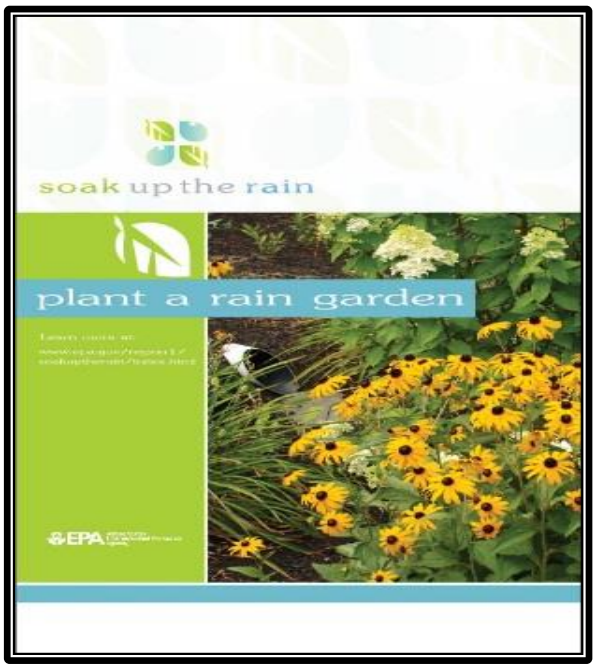
Trevor Smith from the Ecological Landscaping Alliance, Nancy Lin from the Massachusetts Department of Environmental Protection, and Cindy Brown from EPA Region 1 at the Soak Up the Rain exhibit at the 2014 Boston Flower & Garden Show. They were joined by YouthBuild Boston, the Mystic River and Charles River Watershed Associations, and the Mass Watershed Coalition. EPA estimates that more than 6,000 people visited the Soak Up the Rain display to learn about the problem of stormwater runoff, how they can get involved in our communities, and the green infrastructure solutions they can install on their properties to soak up the rain and reduce polluted stormwater runoff.

Taking it Local

EPA has designed customizable tools so that municipalities can implement Soak Up the Rain in their own communities. The Pioneer Valley Planning Commission (PVPC) did just that and has launched its own Soak Up the Rain campaign for its 43 member communities in Western Massachusetts. "What I love about Soak Up the Rain is that it provides simple, clear, and effective language. It conveys the idea of what we need to do while also serving as a call to action. We have recently launched the Soak Up the Rain Pioneer Valley campaign in collaboration with EPA staff and are using it throughout our 43 member communities, including residents, businesses, and municipal officials." Patty Gambarini, PVPC Senior Environmental Planner. To learn more, visit Soak Up the Rain Pioneer Valley.

soak up the rain Pioneer Valley

Tools of the Trade



This rain garden poster is only one of the customizable Soak Up the Rain outreach tools that will soon be available to the public for use in developing their own Soak Up the Rain public outreach campaigns. Others tools include:
A Soak Up the Rain PowerPoint presentation (with a multi-topic slide deck);

- Soak Up the Rain business cards;
- *Faces of Soak Up the Rain* videos featuring homeowners, municipal officials, landscape professionals, and others who are soaking up the rain;
- Specific information for K-12 schools, federal buildings, colleges, and universities; and
- Information on how communities can develop financing mechanisms for stormwater management.

Advancing Implementation of Green Infrastructure: "Getting GI in the Ground"

Rain Garden training at the Naval Submarine Base New London. Partners included: UConn, NEMO program and Rutgers University Cooperative Extension. Photo credit: John Narewski, Groton, CT.

Training and technical assistance to educate, collaborate, and build capacity are important elements of our efforts to promote green infrastructure. Several projects supported by A&P2 are highlighted below.

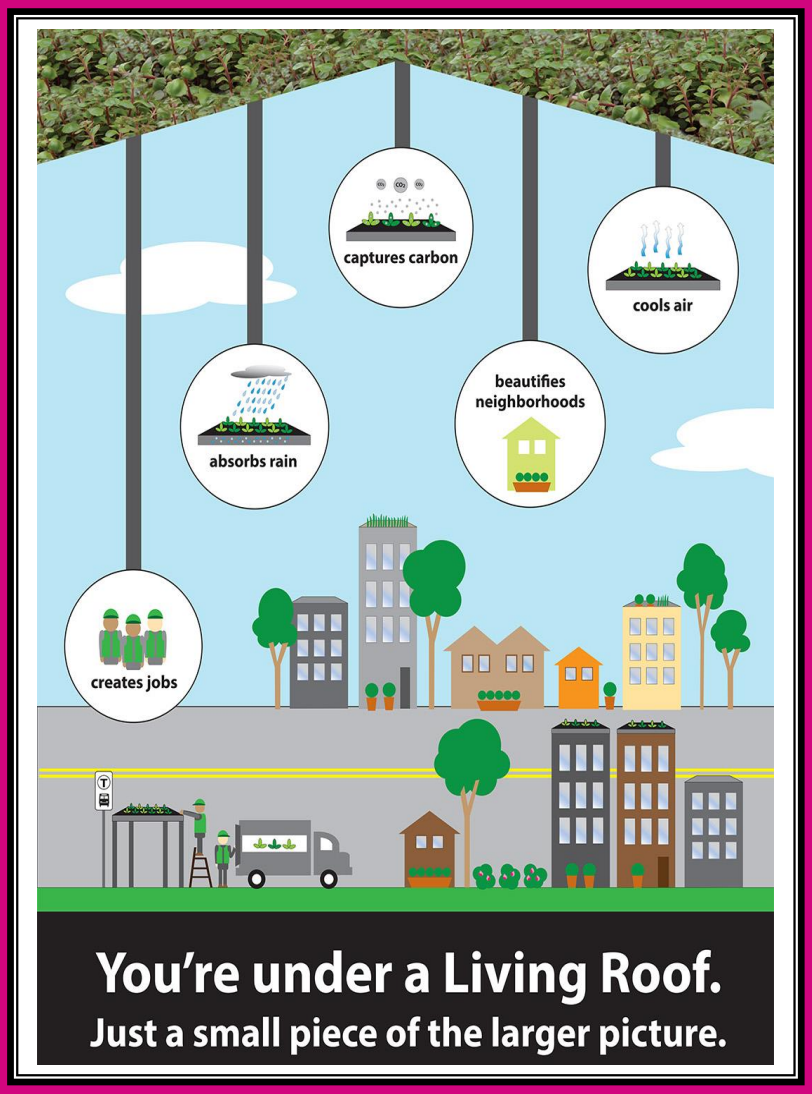
Training for Federal Facilities

Two-day rain garden workshops with classroom instruction and a hands-on rain garden planting at:

- Veterans Administration hospitals in Leeds, MA (Sept 2011) and Brockton, MA (June 2012);

US Naval Submarine Base, New London, CT (Sept 2014); and

- Massachusetts Air National Guard (104 Fighter Wing), in Westfield, MA (Oct 2014).



SOAK UP THE RAIN

The Fairmount-Indigo Line Community Development Corporation Collaborative (the Collaborative) led the effort to install green roofs on three bus shelters along the Fairmount Commuter Rail line in Boston. EPA's Soak Up the Rain program partnered with the Collaborative and also developed an educational poster that is displayed in the bus shelters to raise awareness about the benefits of green roofs and other green infrastructure practices in urban environments. Other Collaborative partners included Land Escapes Design Inc., YouthBuild Boston (shown in the photos above), the City of Boston, JCDecaux North America, and the Massachusetts Bay Transportation Authority. This effort is the first in a series of street level green roof projects that will be installed in Boston in 2015 to promote green jobs while demonstrating how communities can use green roofs and other green infrastructure in their neighborhood to soak up rain, absorb carbon, counteract the heat island effect, beautify the neighborhood, and create green jobs.

A&P2 spotlight

Promoting Green Workforce Development

Focusing on a goal of green workforce development, EPA has partnered with state and municipal agencies, local community groups, and youth training organizations to conduct hands-on rain garden trainings in Bridgeport, CT (May 2010); Providence, RI (April 2011); and Lawrence, MA (May, July, August 2014).

Watch some project videos from our Soak up the Rain website:

- EPA, YouthBuild, Greenway Conservancy Build a Rain Garden in Boston, April 2012; and
- Providence Rain Garden Installation, See how One Rhode Island Community Planted a Rain Garden.

Greenscaper training and rain garden installation for small and minority landscaping/construction businesses, at Beardsley Zoo, Bridgeport, Connecticut. Partners included: the City's Small & Minority Business Resource Office, and Parks Department; UConn NEMO program, and Rutgers University Cooperative Extension.

Promoting Community Stewardship

Trainings to raise awareness about the problem of stormwater and green infrastructure solutions to address it were offered in Worcester, MA and Hartford, CT. The sessions featured classroom training and hands-on installations

Worcester Youth Center, Worcester, MA (June 2012) Partners included: Worcester Stormwater Coalition, UConn NEMO Program, Rutgers University Cooperative Extension, and the Mayor's Office. Participants included neighborhood groups, youth groups and universities.

Classical Magnet School, Hartford, CT. (Nov 2010) Partners included CT DEEP, Office of Pollution Prevention; UConn NEMO program, Rutgers University Cooperative Extension, Hartford Neighborhood Environmental Partnership, and the City of Harford. Participants included residents and community groups, city and state DEP employees, and professional landscapers and landscape designers.

The Charles River Watershed Association, under a 2013 grant from EPA, is partnering with the Town of Franklin, Massachusetts to conduct community workshops and actions that can be taken to reduce the levels of phosphorus entering the Charles River. Their Soak it Up Franklin website includes presentations, a rain garden kit, and other resources.

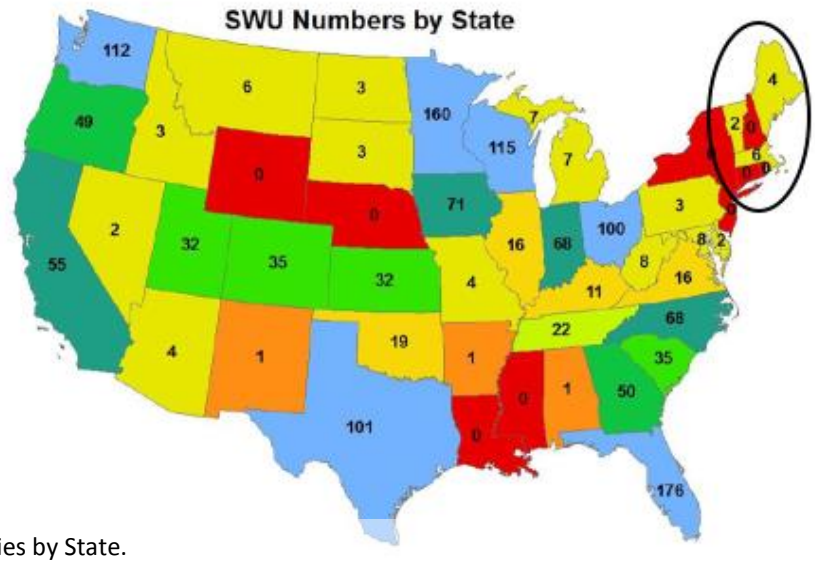
Workshops for the Development Community.
Two workshops in June 2013 and March 2014 and a vendor fair in 2014 featured national and regional experts and panel discussions about local projects.

Green Infrastrcuture workshop and vendor fair, Holyoke Community College. Partners included the Pioneer Valley Planning Commission (PVPC), University of MA Water Resources Research Center, and EPA's Office of Research and EPA's Office of Research and Development, Atlantic Ecology Division.

Tree Filter system shown, with James Houle, Principal Investigator, University of New Hampshire, Stormwater Center. Team includes EPA's Office of Research and Development, Edison NJ.

Supporting Research-Tools Development
The goal of the *Right Sizing Rain Garden Capacity Demonstration Project* (funded through a 2012 Regional Applied Research Effort or "RARE" grant) is to quantify the response of bioretention cells (rain gardens) constructed in New England to the types of storms that occur during the course of a year. This will assist in assigning credits for the implementation of the municipal separate storm sewer system (MS4) permit.

Consensus-Based Stakeholder Decisions on Stormwater Funding
Approximately 1500 U.S. municipalities have addressed stormwater-related fiscal challenges by establishing dedicated stormwater utilities (SWUs). Many communities have tried and failed or have not pursued any stormwater funding mechanisms. In New England, there are currently approximately 12 municipalities with stormwater funding mechanisms in place. In 2013, A&P2 and EPA's Office of Program Evaluation released a report that analyzed several municipal case studies to highlight the reasons behind these successes and failures. Among other things, the report concluded that stakeholder consensus-building efforts were critical to utility adoption by municipalities.



Stormwater Utilities by State.
Source: Western Kentucky University Stormwater Utility Survey, 2013

Outreach: Paying for Municipal Stormwater Programs

A&P2 convened two workshops (in New Hampshire in the fall of 2012 and western Massachusetts in the fall of 2014) which focused on using stakeholder consensus-building strategies to establish stormwater funding utilities. Noted experts, town officials and audience members shared their experiences and identified strategies that led to success. Partners included New Hampshire's Great Bay Discovery Center and Massachusetts' Pioneer Valley Planning Commission.

Designing Individual Consensus-Based Stakeholder Involvement Plans

Based on stakeholder feedback, Region1 is launching a project to develop a curriculum to guide municipalities through the development of consensus-based stakeholder involvement plans. This curriculum will be tested in a series of municipal roundtables and will be tailored to each MS4's specific circumstances. Lessons learned from this effort will be incorporated into a final curriculum and a template/draft stakeholder plan that will be made available for widespread use.

EPA Conference on Sustainable Green Infrastructure Financing Mechanisms: Public-Private Partnerships

Public-private financing partnerships (PPPs) may offer MS4s options for financing green infrastructure while generating profits for the private sector partners; however, rigorous financial feasibility studies are lacking and private investment dollars are driven away by uncertainties. EPA is planning a regional conference to highlight collaborative funding partnerships. Following the conference, EPA and stakeholders may convene a multi-sector workgroup to develop PPP mechanisms applicable to small MS4s.

THINKING BEYOND WASTE

Thinking Beyond Waste doesn't just mean making good decisions about the *end* of a product's life cycle (recycling, composting, energy recovery, and landfilling). It also refers to sustainable materials management – the use and reuse of materials in the most productive and sustainable way across their *entire* life cycle. Sustainable materials management conserves resources, reduces waste, slows climate change, and minimizes the environmental impacts of the materials we use.

In A&P2, promoting sustainable outcomes has been achieved in a number of ways including collaboration with regional and national partners, providing training and assistance, and by influencing sustainable business decisions. As a result, we have promoted sustainable materials management, advocated for certain types of "waste" to be thought of as a resource, sought and assisted in implementing and evaluating sustainable solutions to business and industry waste management problems, and built a strong network of state partners, non-governmental organizations and practitioners who are in turn promoting sustainable materials practices.

Food Recovery Challenge

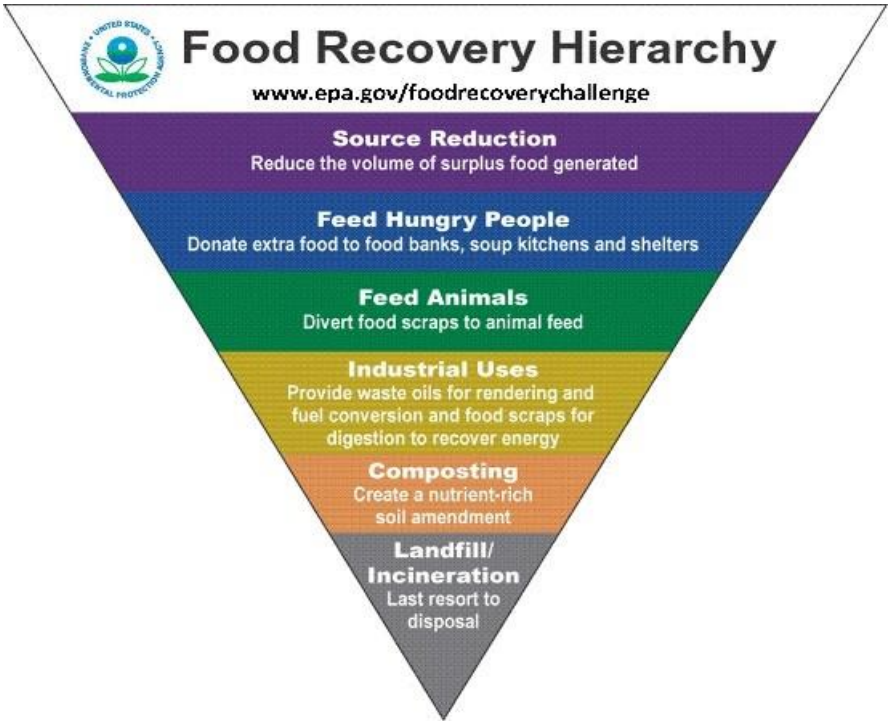
"Participation in EPA's Food Recovery Challenge is a win-win. Food waste reduction through composting and food donation protects our environment, reduces disposal costs, and helps feed those in need. The Red Sox remain committed to making Fenway Park not only America's Most Beloved Ballpark, but also one of its greenest."

Jonathan Gilula, Executive Vice President/Business Affairs
Boston Red Sox

The Food Recovery Challenge is part of EPA's Sustainable Materials Management Program which seeks to reduce the environmental impact of materials through their entire life cycle including how they are extracted, manufactured, distributed, used, reused, recycled, and disposed of. The Food Recovery Challenge encourages participants to reduce as much of their food waste as possible in order to save money, help communities, and protect the environment.

EPA has published a food recovery hierarchy that answers the question "How Can I Divert Food from Landfills?" The answer is:

- Source Reduction-preventing waste before it is created;
- Feeding the People-donating fresh, wholesome food for those in need;
- Feeding the Animals-feeding fresh, safe food scraps to animals (i.e., pigs);
- Finding Industrial Uses-rendering fats, oils, and grease and turning them into products or biofuel; and
- Composting-turning food waste into a valuable soil amendment.



FOOD RECOVERY CHALLENGE IN THE PRESS IN 2014
(Clink links to View Articles)

- UMass Lowell and Bakery Join Program to Reduce Food Waste.
- Boston Medical Center Uses National Food Program to Prepare for Massachusetts Ban
- Parkland Medical Accepts EPA Challenge to Reduce Food Waste
- Ten New England Organizations Commit to Reduce Food Waste

Our regional sustainable food management work educates and raises awareness on the value of food "waste" as a resource. Wasted food has economic, environmental, and social impacts. Much of the food discarded, especially by institutions, is actually safe, wholesome food that could potentially feed millions of Americans. Excess food, leftovers, and scraps that are not fit for consumption and donation can be recycled into a nutrient-rich soil supplement or used for energy recovery through anaerobic digestion. EPA's Food Recovery Challenge asks participants to reduce as much of their food "waste" as possible, thereby saving money, helping communities, and protecting the environment.

FOOD RECOVERY CHALLENGE: BY THE NUMBERS IN 2014

- New England has 58 Food Recovery Challenge participants in the venues, colleges and universities, healthcare facilities, and grocery stores sectors.
- 35,164 tons of food waste was recovered in 2013 (latest data available).
- A&P2 hosted 5 webinars as part of the Solid Materials Management webinar series highlighting FRC partners: University of Maine at Orono, Assumption College, Worcester State University, Clark University (2012 &2013 Award Winner), College of the Holy Cross, and Big Y Supermarket (2012 Award Winner). These webinars reached more than 937 participants.
- Our 21 email news bulletins were distributed to more than 450 contacts each.
- A&P2 presented at 7 conferences and workshops on a range of sustainable food management topics reaching more than 680 people.

DECREASING FOOD WASTE, BANNING FOOD FROM LANDFILLS

An estimated 14.5 percent of American households were food insecure at least some time during the year in 2012, meaning they lacked access to enough food for an active, healthy life for all household members. Americans throw out more than a quarter of all food purchases - about 300 pounds per person per year. The states of Vermont, Massachusetts, and Connecticut have all passed legislation requiring large organizations to decrease food waste diversion to landfills or incineration. New England States are leaders in this arena. EPA is partnering with the Rhode Island Food Policy Council and Vermont's Addison County Solid Waste District to pilot **the Food Too Good Too Waste Toolkit** that focuses on consumer choices to minimize wasting food.

A&P2 spotlight

Federal Green Challenge

"The Federal Green Challenge has added an extra level of focus to the VA's environmental efforts by providing motivational targets and goals and rewarding facilities for their best sustainable efforts. We are pleased to be a part of this initiative."

William J. Kulas, Environmental Program Manager
VA New England Health Care System.

FEDERAL GREEN CHALLENGE

- Region 1 has 30 active Federal Green Challenge Members
- In FY13, FGC participants reduced fuel oil use by 104,237 gallons, reported savings of 9,215,237 cubic feet of natural gas, and 4 facilities achieved over 1 megawatt of energy conservation.
- FGC participants recycled 5,255 tons of municipal solid waste and composted 59 tons of organic waste helping to reduce landfill disposal by 1,393 tons and incineration by 302 tons of municipal solid waste in FY13
- In FY13, water conservation efforts for drinking water and landscape irrigation reduced water consumption by 1,480,406 gallons.
- Region 1 hosted four national webinars in the past year and convened 3 meetings for FGC members.

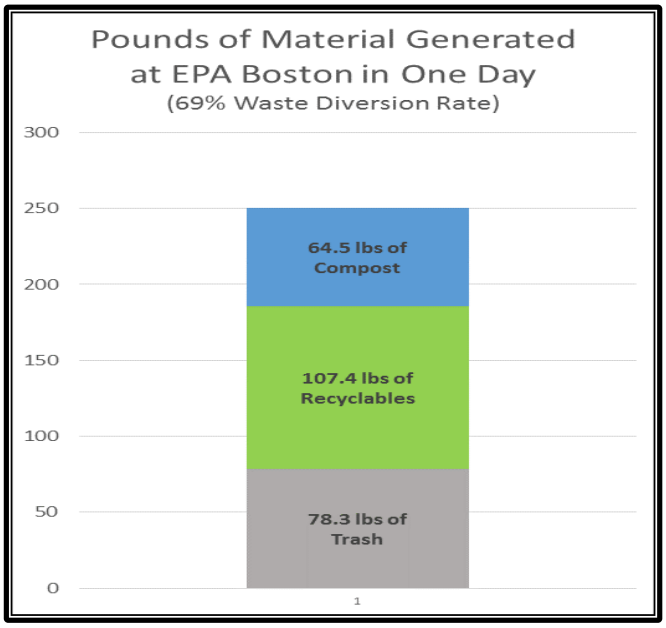
A&P2 and OES' Federal Facility Program supported sustainable materials management and "led by example" in fiscal year 2014 (FY14) by promoting regional Federal Facility participation in the Federal Green Challenge (FGC). This nation-wide initiative actively recruits and encourages Federal Facilities to reduce their greenhouse gas emissions by decreasing water and energy consumption, increasing green purchasing practices, minimizing the disposal of solid waste, reducing their transportation footprint, and improving the purchase and management of electronic devices. To promote the FGC initiative, the A&P2 Office and Federal Facility Program conducted outreach and education activities which included a monthly webinar series, workshops and meetings, and an awards program that highlighted achievements at six federal agencies. To track annual performance goals, the regional FGC works with members to populate a dedicated database of environmental outcomes.

GREEN TEAM SUCCESS AT A WINCHESTER MA COMPANY

The Food and Drug Administration, Winchester Engineering and Analytical Center in Winchester, MA achieved a 30% reduction in energy use in 2013 by employing an innovative set of practices to update a laboratory built in the 1950s. The efforts included an analysis of room and equipment-use data and the installation of energy efficient equipment including the heating, ventilating, and air conditioning (HVAC) system. A Green Team education campaign also encouraged employees to turn off laboratory equipment and shut down computer monitors and printers at the end of the day. This work led to a decrease of over 376,000 Kilowatt-hours (kWh) of energy reduced.

A&P2 spotlight

In addition to managing the FGC initiative, Region 1 became an FGC member and launched such green efforts as an in-house composting program which collected nearly 900 pounds of organic waste per month and an air travel program that reduced air miles from 700,436 miles in FY12 to 455,490 miles in FY13. This was a reduction of 35%.



WASTEWISE

- Partners diverted more than 460,000 tons of materials in 2013.
- In 2014 the region sent 23 email updates to over 450 contacts each.
- 2 new partners in New England have joined since the revamped platform came online.
- In total the region has over 40 active participants in the WasteWise Program.

"We've been recycling at the Orchards since we opened in 1998. With being part of WasteWise we've looked even harder for ways to reduce, like finding a dish detergent that uses 95% less packaging waste and composting kitchen food scraps. Our goal was to recycle more than we throw out, as measured by dumpster usage, and we've achieved it by working collaboratively with staff, residents and their families."

Patricia Hooper, Executive Chef
The Orchards at Southington, A Senior Living Community

Not everyone takes a holistic approach to their waste management and "you can't manage what you don't measure." With that in mind, A&P2 worked very hard to have businesses and institutions in New England take an active role in better understanding the outcomes from their waste management approaches. What is the tool of choice? EPA's WasteWise Program. While the ability to join WasteWise was closed for much of the year due to a restructuring of the computer platform program, A&P2 continued to promote the WasteWise principles of having facilities establish a waste baseline, knowing what their waste numbers are and identifying and committing to specific waste prevention activities. We reached more than 450 contacts with our bi-weekly email newsletter providing technical advice, promoting training opportunities, and highlighting positive waste management or waste reduction accomplishments of New England facilities.

UNIVERSITY OF SOUTHERN MAINE CHANGES THEIR WASTE MANGEMENT

Over three years ago, the University of Southern Maine (USM) hired a new team of sustainability and waste management professionals who took a hard look at USM's waste practices. USM had been recycling for over 20 years, yet their processes and levels of effort were inconsistent. USM had to make a change and decided to aggressively improve campus recycling and reduce overall waste. Highlights include:

- The Tiny Trash Initiative increased their recycling rate by 12% and reduced their bag and labor costs.
- Coffee ground collection reduced 5 tons of waste per year.
- Food waste recovery reduced waste by 30 to 35 tons per year.
- Liquid recovery reduced waste by more than 20 tons per year.
- Experimenting with collecting and screening vacuum bags to remove sand from waste stream.
- Aggressively pursuing separation of metals from demolition and renovation projects.
- Implements the Mindful Move-Out program which collects usable household materials in the spring when students leave campus.

Over a three-year period, USM increased their recycling rate by 30% and reduced annual net waste cost by $43,000. These are results that can also be achieved by other institutions. Click here for information.

A&P2 spotlight

EPA Region 1 Compost Project

In September of FY2014, EPA Region 1 launched a composting pilot project on two floors of its Boston offices, collecting several pounds of food waste per day. By April 2014, the project had expanded to all of 10 floors, and by July, the program diverted nearly 1,000 pounds of organic waste per month. By one recent measure, this resulted in a 48% reduction in the weight of EPA trash and boosted EPA's overall diversion rate to 68%.

The composting pilot was initiated to support the region's Zero Waste Policy which was signed by Regional Administrator Curt Spalding in 2012 after a waste audit indicated that over 40% of the weight of EPA trash was food waste. During the first several months of the pilot, a team of Zero Waste volunteers evaluated compost bins and bags, developed educational materials and signage, then collected and measured compost on a daily basis until compost volumes were verified. The team worked closely with GSA's building managers and the building's janitorial service, Work Inc., to address health and safety concerns, coordinate waste hauler service, and train Work Inc. staff.

To help promote the compost ethic and educate EPA staff, the Zero Waste Team canvassed over 200 individuals on the pilot floors to identify employee concerns and answer questions. As the compost program was expanded, the volunteers hosted breakfast kick-off events on each floor and explained the industrial composting process at dozens of office parties and staff meetings.

From washing hundreds of pilot compost bins and reassuring anxious employees, to visiting the industrial compost site, attending ongoing meetings with GSA, and instituting a rigorous compost measurement system, the Zero Waste Team proved that EPA can change its culture and lead through example. In the spirit of continuous improvement, the team is pursuing new strategies to achieve the Zero Waste goal, including the composting of restroom paper towels and a GSA-approved plan to pilot composting with all federal tenants at the John W. McCormack U.S. Post Office and Courthouse.

Healthcare

"The EPA has been a great partner and [WasteWise] provides us with a program to augment all of our recycling efforts. As a healthcare institution it is not just important to us, but also to our patients and employees, that we are doing everything we can to be a greener organization and to reduce our carbon footprint in our state."

Michael Murphy, Director of Support Services
Norwalk Hospital

HEALTHCARE

- Worked with the Department of Health and Human Services on promoting resilient hospitals
- Promoted the Food Recovery Challenge to New England Hospitals (there are 5 FRC healthcare partners in the region).
- Sent 23 email news bulletins to 1,845 contacts each.

With nearly 300 hospitals and thousands of other healthcare facilities in New England, the potential environmental and health impacts from these operations can be significant. Hospitals, for example, use a wide range of toxic chemicals, generate large quantities of wastes, and consume vast amounts of energy and water. The EPA Region 1 Healthcare Assistance program is helping to provide the information facilities need including information to help them reduce the environmental impacts of their operations and improve their understanding of and compliance with environmental regulations.

In recent years, Region 1 has focused on sustainability including sustainable landscapes, energy use reduction, and waste reduction. We're helping hospitals realize the cost savings and environmental benefits that can be attained through improvements in recycling, energy efficiency, water conservation, rain gardens, and other green infrastructure. This year EPA has been focused on food recovery in the healthcare sector. In the future, EPA also plans to work on climate change and the president's climate action plan for resilient hospitals.

"Through a public-private partnership with the healthcare industry, it [Department of Health and Human Services] will identify best practices and provide guidance on affordable measures to ensure that our medical system is resilient to climate impacts."

THE PRESIDENT'S CLIMATE ACTION PLAN, June 2013

VETERANS AFFAIRS OF CENTRAL AND WESTERN MA MEDICAL CENTER RAIN GARDEN

Healthcare institutions have a unique opportunity to connect patients and staff to nature through healing gardens. They do not, however, always consider stormwater management when designing their gardens. In late 2013, as part of a larger landscape master planning effort, the Veterans Administration (VA) of Central and Western Massachusetts Medical Center undertook construction of its third rain garden in as many years. This garden is located at the VA's Chapel on a narrow linear site of about 600 square feet. The site was previously a bland lawn area containing a yard drain which continues to serve as the rain garden's overflow. Rain water feeds the site through a downspout at the site's upper end as well as through sheet flow off of the Chapels slate roof.

The garden was specifically designed to provide double benefits as both a rain garden and a colorful, eye-catching "healing garden" that is highly fragrant through much of the growing season. A "Chives River" serves as the functional and visual centerpiece for filtering roof runoff in a subtle channel flanked by dense chives. The “Chives River” forms a stunning purple-pink drift in late spring. Other fragrant and showy plantings include hyacinths, blue hill sage, three species of summer-blooming phlox, Virginia sweet spire, and hummingbird summer sweet. Reinforcement of the garden's upper edge (in response to sheet flow off the Chapel's roof from intense storms during the summer of 2014) has fully stabilized the garden which should largely establish during the 2015 growing season. A rain garden like the one installed by the Veteran’s Administration of Central and Western Massachusetts is a model for other healthcare institutions interested in learning how to connect wellness and environmental health while also satisfying other goals such as stormwater mitigation, leadership in energy and environmental design (LEED) certification, improved aesthetics, promoting wellness, and enhancing community relations.

A&P2 spotlight

Grocery Sector

“EPA is an important partner for promoting sustainability in the grocery sector. EPA catalyzes engagement with businesses and trade organizations, leverages national program expertise, and provides a much needed contact and champion for state pollution prevention programs.“

Terri Goldberg, Executive Director
NEWMOA

The grocery sector represents a new and important opportunity for the A&P2 Office due to its economic magnitude, regulatory relevance, and sustainability opportunities. There are over 4,000 food retail stores in New England and the seven largest supermarket chains employ nearly 150,000 staff at 876 stores with total annual revenues over $25 billion.

Supermarkets and their distribution centers must comply with many federal, state and/or local regulatory requirements due to their use of refrigerants (Clean Air Act), universal waste generation (Resource Conservation and Recovery Act), stormwater management challenges (Clean Water Act), propane storage (Emergency Planning and Community Right-to-Know Act), and solid waste (state recycling and food waste regulations). Because grocery stores are the most electricity-intensive type of commercial building and generate methane-producing food waste, their sustainability efforts will help mitigate greenhouse gas emissions. Over the past year A&P2 has worked to identify key internal and external stakeholders, assess key technical assistance providers and launch a dialogue with industry leaders. Moving into FY15, Region 1 plans to support the grocery sector by developing a dialogue with business and trade associations to identify their environmental needs and by coordinating with state and federal programs to leverage and provide technical assistance tools and resources to New England grocers.

LOOKING TO THE FUTURE IN THE GROCERY SECTOR

- Hosted two Sustainable Grocery Workshops at Whole Foods and Hannaford stores that reviewed opportunities for saving energy, reducing waste, and conserving water.
- Promoted grocery sector stakeholder development with trade associations, business leaders, and nonprofit organizations.
- Participated in NEWMOA's Grocery workgroup to support a state recognition programs for sustainable grocery stores.
- For FY 15, A&P2 will host a Sustainable Leadership Summit of public and private sector stakeholders to identify regional sector priorities.

Partner and grantee Peter Cooke from Manomet Center for Conservation Sciences, Brunswick ME, offering technical assistance to a supermarket.

Small Business Assistance

The President's Executive Order 13653 requires that EPA create outreach information in plain language and incorporate the best available technology to assist the regulated community in its efforts to comply with environmental requirements. A&P2 personnel perform the following activities to help small businesses directly and support states and other assistance providers in their efforts to help businesses achieve and go beyond compliance:

- Conduct outreach aimed at reducing hazardous air pollutants from engines and boilers;
- Work with state small business assistance programs to exchange information on the needs of small businesses regarding regulatory issues and compliance;
- Assist in the development of plain language fact sheets, web-based assistance tools etc. to explain regulatory requirements;
- Prepare question and answer (Q&A) and frequently asked questions (FAQ) documents to explain requirements and best practices;
- Work with trade associations, supplier networks, and others to promote compliance and best practices;
- Assist in the development of user-friendly, web-based compliance and best practices information including short video clips on important topics;
- Conduct free webinars for states, assistance providers, and regulated entities; and
- Conduct workshops and roundtable meetings on regulatory topics.

STOPPING POLLUTION BEFORE IT STARTS

Pollution Prevention

Pollution Prevention (P2) refers to the use of materials, processes or practices that reduce or stop the creation of pollutants or waste at the source. P2 includes improved operating practices like material substitution, process and equipment modifications, and energy and wastewater conservation. Simply put, pollution prevention means stopping pollution before it starts. Here in New England, A&P2 has taken a leadership role in shaping how EPA approaches pollution prevention work nation-wide. By serving as the sub-lead region for the national pollution prevention program, Region 1 has helped to foster collaboration among Regional P2 programs and Headquarters in policy discussions, work towards achieving national P2 program consistency, finding efficiencies in the way we do business to implement the P2 program and mutually critical work.

EPA United States Environmental Protection Agency

POLLUTION PREVENTION

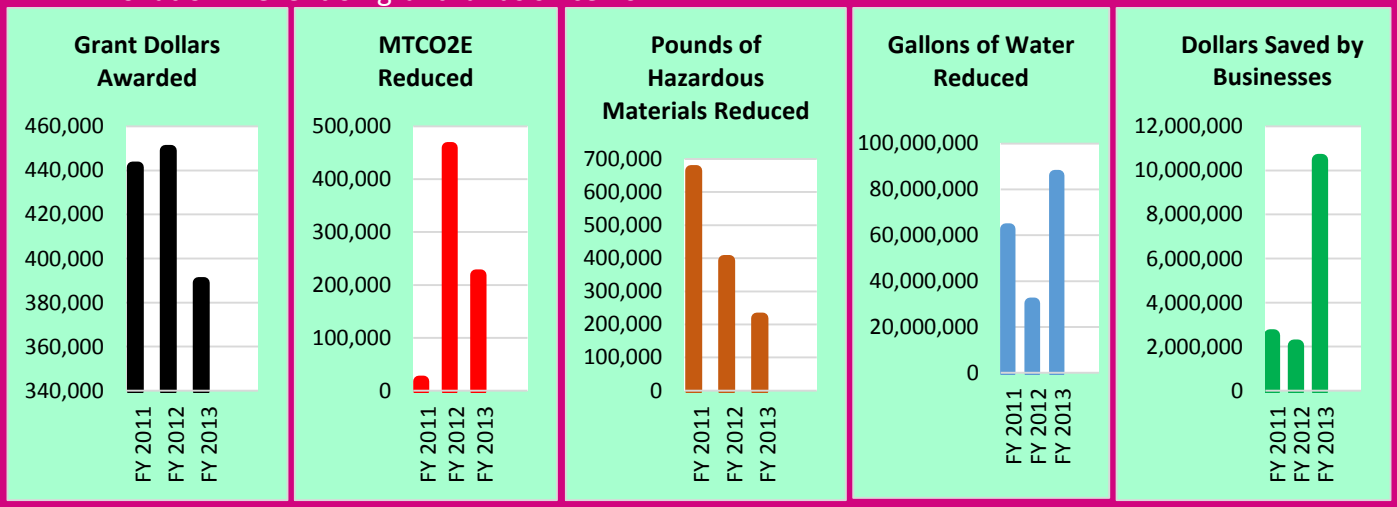
- Completed an assessment of needs for training and capacity building of our New England State P2 Programs.
- Served as the Sub-lead Region for the National Pollution Prevention Program.
- Awarded 6 grants totaling more than $390,000 to New England State P2 Technical Assistance Programs and other state entities for the primary purpose of assistance for New England businesses and industry.

On a regional level, this year we have supported programs that provided pollution prevention and compliance training for small to medium-sized businesses; offered P2 and compliance assistance to the Health Care, auto-body and auto repair sectors; supported a region-wide push to address P2 in the hospitality industry; supported state Business Environmental Partnership programs; provided outreach and assistance to colleges, high schools and middle schools on safe laboratory chemical management; and provided technical assistance, education, and quantification of reductions achieved through impervious cover mitigation strategies being applied to development and redevelopment activities.

These results were achieved by partnering with state pollution prevention programs, trade organizations, and academia and by collaborating with, and learning from, our colleagues nation-wide. All of this work is helping build a strong, diverse, and well informed network of pollution prevention providers and practitioners across New England and is resulting in measureable benefits to the New England environment. In 2015 we will be moving toward work in the areas of climate change mitigation, food manufacturing and processing, and community level hazardous materials source reduction.

EPA P2 GRANTS AWARDED TO N.E. STATES PROVIDED ASSISTANCE TO BUSINESSES AND ACHIEVED IMPRESSIVE RESULTS

The graphic below shows the results achieved by New England States and other grantees with Pollution Prevention grant funds since 2011.



A&P2 spotlight

Green and Sustainable Chemistry

The phrase "green toxicology" bridges "the gap between toxicology and sustainable molecular design. It focuses on a particular application of the principles of toxicology to address certain problems, in this case, articulating design rules that can be used by synthetic chemistry to design products and reduce hazard."
Emma Davis, Report
Chemistry World

GREEN AND SUSTAINABLE CHEMISTRY

- Business Value Creation through Green Chemistry Meeting organized and facilitated by EPA.
- Collaboration with ORD to embed green chemistry into EPA priorities and programs.
- Bringing Safer Chemicals to the Marketplace Workshop
- Green Chemistry Connection website; a resource for practitioners.

The New England Green Chemistry Initiative (NEGCI) brings stakeholders from a broad spectrum of green chemistry and sustainability focus areas together to identify priority products and materials for safer substitution and safer molecular design. Regular meetings are held among sector-based workgroups both as a full working group and in more focused sectional meetings.

Green Toxicology

How does a "green chemist" really know how to make a safer molecule? The answer is: understand the relationship between the structure and toxicity of a molecule. One might think that this is already the practice, a common part of the chemical design process. Sadly, evaluating whether a compound is a potential threat to public health and the environment usually occurs after the product is made-after the proverbial horse has left the barn. Green toxicology seeks to ensure that hazard reduction happens at the beginning, at the design phase.

Over the past year, EPA has led efforts to promote green toxicology at the national and international level. This was achieved by partnering with Johns Hopkins Bloomberg School of Public Health (JHBSPH), Dow Chemical, and other academic and industrial partners to advance green toxicology, defined as the application of the principles of toxicology into the design of safer, healthier, and sustainable products. As part of this effort, a workgroup organized a "Green Chemistry Information Day" Baltimore at JHBSPH. This gathering served as the inspiration for two upcoming green chemistry workshops, the first in Switzerland and the second in Washington State.

The workgroup currently has an article in press called Green Toxicology scheduled to be published in the journal Alternatives to Animal Testing.

Educating the next generation of green and sustainable scientists to design safer products is a core mission of this green toxicology effort.

LOBSTER AND CRAB SHELLS AS A SOURCE OF MATERIALS FOR WOUND CARE

Who would think that the discarded shell of the lobster you just enjoyed as part of a succulent bouillabaisse could provide the starting material for bandages used in healing wounds in diabetic patients? Well it can. Chitin is the second most abundant natural product, surpassed only by cellulose, giving the shells of insects and crustaceans (lobster, crab and shrimp) their strength.

EPA has been working with local seafood companies and academic researchers to develop environmentally friendly ways of extracting this valuable commodity, chitin, from the shells of lobster and crab waste generated here in the northeast. The benefits if this project include:

- Reduced waste from discarded, processed lobster and crab shells;
- Increased support for the fishing industry from selling their crab waste;
- Development of an environmentally gentle chitin extraction method;
- Provided a much needed commodity to the health care industry; and
- Improved patient outcomes by providing an effective treatment option.

A&P2 spotlight

FINDING EFFICIENCIES IN HOW WE DO BUSINESS

Doing more with less has become a way of life for many professions. Environmental protection is no exception. Costs are rising, budgets are dwindling and people's time is being taxed in many ways. This is not just true for EPA, but for our partners and constituents as well. With these realities in mind, A&P2 has worked diligently to streamline our overhead, track our resources and work creatively to help our partners and regional businesses improve their performance and innovate while still keeping an eye on the bottom line. Some of the ways this has been achieved is through training, consolidation of effort and enhanced attention to detail.

Effectively Reaching Our Audiences

Resources including travel dollars for both EPA and our partners continue to be reduced, yet there is continued need to support and provide timely information to a growing audience. EPA increasingly relies on *GoToWebinar*® software to offer information and training sessions on a wide variety of topics including compliance requirements on the Clean Air Act rules impacting engines and boilers as well as diesel emission reduction opportunities in our SmartWay Programs, the Food Recovery Challenge and Federal Green Challenge to name a few. This allowed EPA to reach large audiences for the lowest cost and provided the largest number of businesses access and opportunity to attend training without losing a day of productivity or incurring cost to attend or travel to events.

Leveraging Outcomes through Grants and Contracts

In FY14, A&P2 effectively administered approximately $513,435 in grants to support a number of regional efforts including Pollution Prevention/Source Reduction, Healthy Communities, composting, green infrastructure, creating entry-level stormwater positions, and capacity-building. An additional $21,000 was dedicated to contracts supporting green infrastructure and solid waste management projects.

Partnering and Network Building

Our effective partnering with state agencies, trade associations, universities, communities, other government agencies, and businesses has allowed A&P2 to reach an expanded audience, achieve enhanced results and build networks across New England that work cooperatively to assist businesses and communities to improve their environmental performance.

LOOKING AHEAD: 2015 AND BEYOND

The results compiled in this report represent the efforts of many dedicated staff and the leveraged outcomes from our collaborative work with a variety of internal and external stakeholders. While many of these achievements resulted in important environmental outcomes, and the depth and the breadth of the work was far-ranging, significant environmental challenges continue to mount as we all confront the daunting challenges posed by our changing climate.

In the upcoming year, the Assistance and Pollution Prevention Office will continue to support EPA's efforts to build climate resiliency into our programs that support communities: we will continue to work with municipalities on their asset management and CMOM challenges and their green infrastructure and zero waste opportunities. We will continue our robust sector-based outreach to: hospitals, venues, groceries, federal facilities and the diesel transportation sector, and we will continue to promote waste and food waste reduction strategies throughout New England. Our pollution prevention efforts will expand to include food manufacturing and climate adaptation planning for small and medium-sized businesses, particularly in areas that are most vulnerable for risk of flooding. And we will continue to direct our limited grant dollars to support priority environmental work throughout New England.

If you have any comments or questions on what you have read in this report, or ideas that you would like to share with us, please give one of us a call (see last page for our contact information).

Sincerely,
The Assistance and Pollution Prevention Team,
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POLLUTION PREVENTION - STOPPING POLLUTION BEFORE IT STARTS

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