


NEWMOA 2016 ANNUAL REPORT

30



YEARS OF LEADERSHIP

charting a new course



## About NEWMOA

The Northeast Waste Management Officials' Association (NEWMOA) is a nonprofit, nonpartisan interstate association that has a membership composed of the hazardous waste, solid waste, waste site cleanup, and pollution prevention program directors for the environmental agencies in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. NEWMOA was established by the governors of the New England states as an official regional organization to coordinate interstate hazardous and solid waste, pollution prevention, and waste site cleanup activities, and was formally recognized by the U.S. Environmental Protection Agency in 1986.

## LETTER FROM NEWMOA'S 2016 CHAIR

### Celebrating 30 Years of Leadership, Charting a New Course

**N**EWMOA turned 30 in 2016 and celebrated this milestone throughout the year. The Board of Directors invited current and former members to join them for dinner during its meetings in March, June, and September. Those dinners provided a great opportunity for reconnecting and reflection.

We've come a long way since 1986 when NEWMOA was formed. The issues facing the waste industry and state regulatory officials were different than they are today. Federal laws, including the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (commonly called Superfund), and the analogous state laws were new. State and federal officials were creating the programs, rules, and policies to implement these laws, and there were vigorous debates among them about how to go about their work. There were many notorious waste sites, including Love Canal, NY and Woburn, MA, that were profoundly affecting nearby communities and receiving widespread public attention. Government officials were struggling with how to implement programs to prevent new sites like those from occurring and to properly and safely clean them up. Solid waste programs focused on creating and filling landfills or incinerating waste, with local recycling programs in their infancy. Curbside collection of materials for recycling was rare. Solid waste officials were struggling with how to get those kinds of programs up and running and to create a regulatory framework to support the needed recycling infrastructure. Looking back on those times, it is obvious that we have made tremendous progress.

NEWMOA's basic mission, goals, and functions have not changed much since its founding. Nevertheless, the scope of the organization's efforts has expanded over the years to include waste site cleanup, brownfields, pollution prevention, waste reduction, toxics reduction, alternatives assessment, product stewardship, sustainable materials management, and others. Many of those concepts and approaches did not exist or were in their infancy in the mid-1980s.

We now face a set of new and increasingly complex challenges. This past year, states in the northeast confronted a series of crises in communities that learned that their drinking water supplies were contaminated with PFOA or PFOS, which are perfluorooctanoic acid and perfluorooctane sulfonic acid, respectively. Residents of small towns, like Hoosick Falls, NY; Merrimack and Litchfield, NH; and Bennington and North Bennington, VT have experienced a crash course in these compounds after they were detected in their local water supplies. These chemicals belong to the broader class of poly- and perfluoroalkyl substances (PFAS) that have been widely used for carpet and fabric protection, in food packaging, and in metal plating, and have been included in such products with familiar trade names as Teflon®, Gore-Tex®, Stainmaster®, and Scotchguard®. In addition, PFAS has been key a component of aqueous film-forming foams (AFFF), which are widely used in firefighting. EPA has set a limit of 70 parts per trillion for PFAS in drinking water because of the potential neurologic and other health effects related to exposure to these chemicals. The state environmental agencies have



**ROBERT KALISZEWSKI**

Connecticut Department of  
Energy and Environmental  
Protection

2016 NEWMOA Chair



**“NEWMOA anticipates that the region will face more sites with emerging contaminants of concern over the next 30 years. The lessons we have learned from past crises and those we are learning from the PFAS situation should help us face new challenges in the future.”**

undertaken extensive sampling of drinking water wells, and they are offering treatment systems or alternative water supplies to residents in areas where the results have exceeded states’ action levels.

To support these efforts and those underway in communities in New Jersey, Massachusetts, and elsewhere that have also experienced PFAS contamination, NEWMOA organized a regional meeting; a series of educational webinars; and monthly conference calls of state and federal officials across a variety of health and environmental programs. These activities were designed to make sure everyone is familiar with the most up-to-date scientific and technical information and is aware of how each other is responding to and addressing public concerns.

NEWMOA anticipates that the region will face more sites with emerging contaminants of concern over the next 30 years. The lessons we have learned from past crises and those we are learning from the PFAS situation should help us face new challenges in the future. I am proud of the ways in which NEWMOA has evolved and grown in its ability to help state agencies address this and other critical environmental challenges under significant resource constraints.

PFAS is just one of the issues that NEWMOA worked on in 2016. I invite you to learn about other examples of our initiatives by reviewing this Annual Report. For a quick overview of our 2016 accomplishments, check out NEWMOA-by-the-Numbers and the Highlights.

On a sadder note, several long time NEWMOA Board members retired this year, including Jay Naparstek, formerly with the Massachusetts Department of Environmental Protection (Mass DEP) and Sharon Yergeau, formerly with the New Hampshire Department of Environmental Services (NH DES). Jay helped to initiate NEWMOA’s Waste Site Cleanup (WSC) Program and joined the Board in 2002. He was an active contributor until his retirement in 2016. He worked on developing and overseeing NEWMOA’s highly successful annual series of waste site cleanup technical workshops. He chaired NEWMOA’s WSC Program for most of the past 10 years. Sharon was among a handful of state waste program staff that helped to found NEWMOA in the mid-1980s. For many years, she led NH DES’ pollution prevention and solid waste programs. She was a very active member of NEWMOA’s Board from 2006 to 2011 with a strong focus on toxics in products and packaging and waste prevention. She was NEWMOA’s Vice Chair in 2011. Sharon provided dedicated leadership during those years (and meticulous editing to many of NEWMOA’s publications). After she left the Board, she continued to participate in many of NEWMOA’s solid waste activities. We greatly appreciate the many contributions to NEWMOA’s work and the long-time leadership of the organization by both of these dedicated environmental professionals. We wish them well in their retirement.

I have been directly involved in NEWMOA for about 10 years, and, in reflecting on that time I am amazed at the depth and breadth of knowledge that NEWMOA’s members and staff embody. From the scientific understanding needed to address complex challenges, like PFAS, to the social and cultural know-how necessary to influence the actions of individuals, such as the “zero waste movement,” everyone associated with NEWMOA collaborates to solve tough technical and societal problems. The result is a higher quality of life for all those that live in the region and beyond. It is a pleasure and privilege to work with such a wonderful group of dedicated and caring people.

Finally, it is critically important that each of us look to mentor and support new members and staff to ensure that NEWMOA’s success is sustainable. Thank you.

## 2016 NEWMOA HIGHLIGHTS

### Strategic Planning – Charting a New Course

NEWMOA's Board engaged in a year-long strategic planning initiative in FY 2016. The effort began with a survey of NEWMOA's Workgroup members asking for feedback on the Association's activities, mission, and goals and recommendations for the future. The staff also conducted phone interviews with Board members asking for feedback and ideas. The results of this information collection were shared with the Board and informed its subsequent deliberations on a five-year plan. The Board is on track to finalize the plan in the summer of 2017.

### PFAS Activities

To help its members address a series of crises in communities that learned that their drinking water supplies were contaminated with perfluorooctanoic acid (PFOA) or perfluorooctane sulfonic acid (PFOS), NEWMOA organized a regional meeting of local, state, and federal officials; a series of educational webinars; and monthly conference calls. The participants in these activities come from a variety of government health and environmental programs. These events have helped make sure that everyone is familiar with the most up-to-date scientific and technical information and is aware of how each other is responding and addressing public concerns.

### Reusing and Recycling Bulky Waste

NEWMOA helped stakeholders in four rural areas in Maine, Massachusetts, and Vermont develop effective strategies to reuse and recycle carpet, furniture, mattresses, and large rigid plastic

items (i.e., bulky waste). NEWMOA developed and distributed four best management guides on each category of bulky waste, as well as consumer handouts customized to the targeted areas and a writeable template version that communities can customize. NEWMOA also conducted successful workshops to help communities improve their reuse and recycling of these difficult-to-manage wastes.

### Monitored Natural Attenuation

NEWMOA held successful "Monitored Natural Attenuation (MNA) – Appropriate Tool or Easy Way Out?" workshops for waste site cleanup professionals in September in Massachusetts and Connecticut. Natural attenuation relies on natural processes to clean up or attenuate pollution in soil and groundwater. It happens at many sites, but must be monitored to make sure it is occurring and in a time frame that is reasonable. The workshops:

- Reviewed the basic MNA principles, including attenuation processes, monitoring tools, data evaluation, and optimal site conditions with a focus on hydrocarbon-impacted sites and chlorinated-solvent sites
- Provided an overview of MNA as a tool for site closure
- Focused on new developments in the field, MNA of emerging compounds and metals, and the relationship between MNA and vapor intrusion.

### Mercury Product Trends

The Interstate Mercury Education and Reduction Clearinghouse (IMERC) hosted a well-attended webinar on "What Does IMERC Do with Companies' Mercury-Added

Product Data?" The presentation demonstrated the ways that IMERC and its members utilize mercury-added products data reported through its e-filing system. Manufacturers, distributors, and importers of mercury-added products, as well as federal, state, and local government programs, academic institutions, and non-governmental organizations (NGOs) attended. IMERC also partnered with the Product Stewardship Institute (PSI) on a webinar covering, "Mercury Products: Current Uses and Trends in Stewardship Programs". This webinar was restricted to federal, state, and local government programs, academic institutions, and non-governmental organizations (NGOs). NEWMOA staff presented an analysis of IMERC's 2013 data, and PSI presented information on current product stewardship programs for thermostats, lamps, and auto switches.

### Chemical Ingredient Disclosure

NEWMOA's IC2 program partnered with the Oregon Health Authority and the Washington State Department of Ecology on a successful proposal for funding from EPA's National Environmental Information Exchange Network (NEIEN) program to build an Interstate Chemicals-in-Products Reporting System. This funding will enable IC2 to create a multi-state reporting vehicle to meet the needs of state laws, such as Oregon's Toxic-Free Kids Act and Washington's Children's Safe Products Act, among others. Developing this system will be a high priority for IC2 in fiscal year 2017.

## NEWMOA BY THE NUMBERS



### 36 NEWMOA-SPONSORED TRAINING EVENTS

including webinars and in-person workshops, involving more than **1,780 participants**

# 152

### NEWMOA WORKGROUP AND PROJECT CONFERENCE CALLS

involving more than **1,550 participants**



### More than 52,700 USER SESSIONS

on four of the NEWMOA-supported websites and approximately **118,400 page views** by those visitors



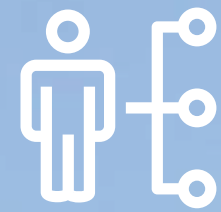
### 12 FACE-TO-FACE NEWMOA MEETINGS

involving approximately **285 people**



### 31 CONFERENCE CALLS

organized by partner groups in which NEWMOA staff participated



### 3 PROFESSIONAL SOCIAL NETWORKS

developed and supported by NEWMOA, including SustainableLodging.org with **705 members**; ZeroWasteConnection.org with **235 members**; and Green Chemistry Connection with **96 members**

# 16

### FACE-TO-FACE MEETINGS

sponsored by other groups in which NEWMOA staff participated

# 8

### WEBSITES

supported by NEWMOA, including NEWMOA.org, TheIC2.org, ERPStates.org, P2Rx.org, and GreenLodgingCalculator.org

# 2

### NEWMOA LISTSERVS

involving about **230 participants**



**4 ISSUES OF  
NEWS@NEWMOA**

distributed to approximately  
**2,525 readers** each



More than  
**450 COMPANIES**

reporting on their  
mercury-added products  
through the Interstate  
Mercury Education and  
Reduction Clearinghouse  
(IMERC)

**13**

**IMERC MEMBER STATES**

**42**

**OTHER NEWMOA  
PUBLICATIONS OR  
DOCUMENTS**

developed and distributed



**32 WORKGROUPS OR  
COMMITTEES**

involving approximately  
**660 participants** and  
**4 networking groups**  
involving approximately  
**90 participants**

**14**

**IC2 MEMBERS**

including state and  
local governments;  
**11 Supporting Members**



**11 ONLINE DATABASES**

and other downloadable  
tools and resources  
developed and/or  
maintained

**6**

**NEWMOA STAFF**



**NEWMOA  
MEMBER STATES**

For more information,  
visit [www.newmoa.org](http://www.newmoa.org).



## SUSTAINABILITY AND POLLUTION PREVENTION



**STEPHANIE D'AGOSTINO**

New Hampshire Department  
of Environmental Services

2016 Pollution Prevention  
and Sustainability Program  
Area Chair

Fiscal Year 2016 marked an important milestone for P2 programs – 25 years since the passage of the federal Pollution Prevention Act. During this time, programs have evolved in the breadth of their services and the clients they serve. The initial focus of state programs has evolved from hazardous waste reduction to the efficient use of energy and resources. P2 programs now take a broad view of their role in advancing sustainability that goes beyond traditional waste reduction approaches and industrial sources to cover all aspects of life, including service sectors and consumers. Because state programs know that they can be more effective and efficient by working together, NEWMOA's role in coordinating state efforts and information sharing continues to increase in importance.

### Northeast P2 and Sustainability Roundtable

NEWMOA's Northeast Pollution Prevention and Sustainability Roundtable helps state and local government environmental officials implement effective multimedia source reduction and assistance programs to promote sustainability and improvement in public health and the environment. In 2016, the Roundtable met in person and by phone to share information and coordinate projects.

### Pollution Prevention Resource Exchange (P2Rx)

NEWMOA supports a regional Pollution Prevention Resource Exchange (P2Rx) Center. P2Rx is a network of eight regional centers that advance P2 as a cornerstone of sustainability. The goals of P2Rx are to build networks, develop and deliver P2 information and training, and measure impacts resulting from P2 efforts. NEWMOA's P2Rx Center helps users connect with other P2 and sustainability practitioners, develop and deliver effective source reduction programs, find useful information and tools, and measure their impacts. In 2016, NEWMOA fulfilled its P2Rx goals by delivering services through professional social networks that it developed and managed, including the:

- [Zero Waste Connection](#)
- [National Sustainable Lodging Network](#)
- [Green Chemistry Connection](#)

Through these professional social networks, members learn about events, trainings, resources, and emerging issues that help them develop and implement sustainable strategies.

### New P2Rx.org Website

In addition to supporting its Northeast Regional P2Rx Center, NEWMOA fills a key infrastructure role by hosting the national [P2Rx.org](#) website. Many P2Rx web-based services originate from this



website and are broadcast to regional centers' websites. In 2016, NEWMOA launched a modernized version of the site with the following features:

- A mobile-friendly design
- Highlighted P2Rx Center services
- Calendar of available webinars and trainings
- A variety of opportunities to network with peers
- System for sharing P2 results

### Spanish Language P2 Resource

NEWMOA published a Spanish language [P2 Resource page](#) on P2Rx.org to better serve Spanish-speaking colleagues. This resource was prepared in partnership with the Pacific Northwest Pollution Prevention Resource Center (PPRC), who, under a small contract from NEWMOA, compiled and helped to annotate the page. NEWMOA added the English language version of the resources to make the collection accessible to English-speaking technical assistance providers.

### P2 for Refrigeration

NEWMOA partnered with CLEAResult to hold two webinars in October for more than 50 participants focused on energy efficiency and safer chemical use in refrigeration, as a way of advancing sustainability in the grocery sector. The goal of these webinars was to help participants understand how to improve energy efficiency in and minimize accidental releases of high global warming potential gases from refrigeration units.

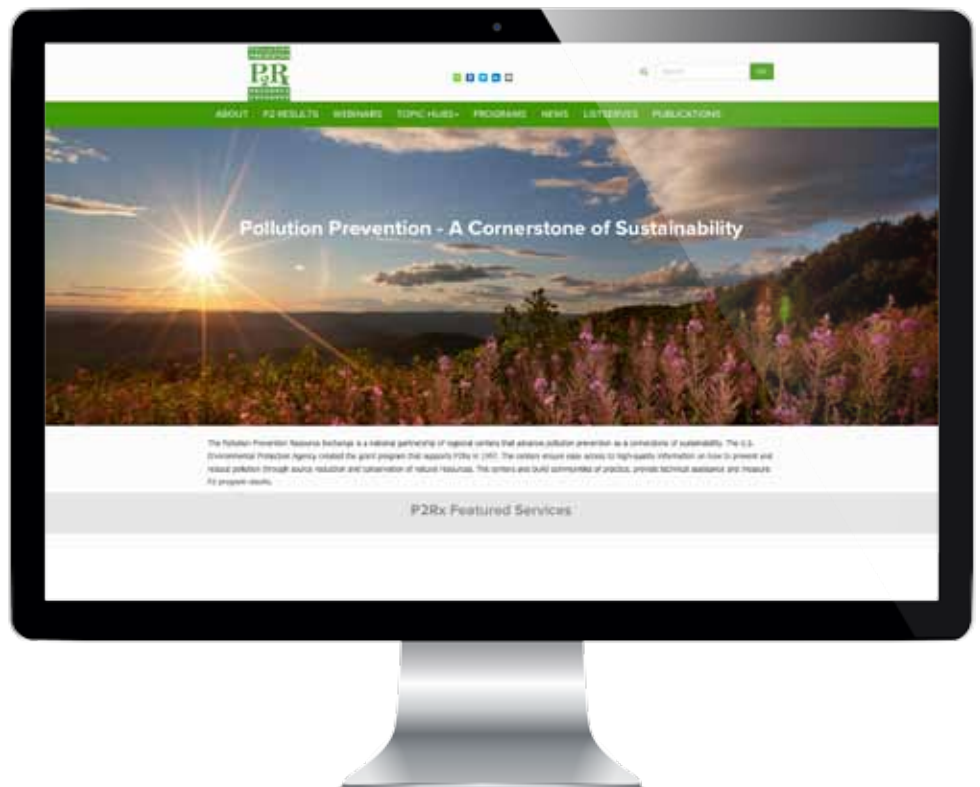
During “Cool Tips for Technical Assistance Programs (TAPs): Identifying Opportunities in Refrigeration”, assistance providers heard an overview of the opportunities

for improving the sustainability and efficiency of refrigeration equipment. The presenters also discussed how TAPs can make referrals for an opportunity assessment and implementation support.

The “Sustainability in Refrigeration: High Impact Practices that Lower Costs for Grocers” webinar focused on two key sustainability opportunities within grocery stores: refrigerant leak reduction and energy efficiency through opportunities for retrofits, re-commissioning, retro-commissioning, and installing new technologies. The presenters described actions grocery stores can take to reduce their operating costs.

**“P2 programs now take a broad view of their role in advancing sustainability that goes beyond traditional waste reduction approaches and industrial sources to cover all aspects of life, including service sectors and consumers. Because state programs know that they can be more effective and efficient by working together, NEWMOA’s role in coordinating state efforts and information sharing continues to increase in importance.”**

*New home page of [P2Rx.org](#)*





## HELPING STATES ADDRESS EMERGING CLEANUP ISSUES



**JAY NAPARSTEK**

Massachusetts Department of  
Environmental Protection

2016 Waste Site Cleanup  
Program Area Chair

In FY 2016, NEWMOA's Waste Site Cleanup Program proved invaluable in its ability to make mid-course adjustments in response to the important problem of poly- and perfluoroalkyl substances (PFAS) contamination in water supplies and homeowners' wells in areas of New Hampshire, New York, and Vermont. These situations greatly concerned all the northeast states, and NEWMOA's Board decided to lead an effort to coordinate education, information sharing, and training on this contaminant of concern. After PFAS emerged as a priority in March 2016, NEWMOA organized a regional states/EPA meeting followed by monthly information sharing calls and initiated a five-part webinar training series. In addition to its focus on PFAS, NEWMOA also organized training workshops and webinars on other priority topics and held its annual States/EPA Brownfields Programs meeting.

### **Poly- and Perfluoroalkyl Substances (PFAS)**

PFAS are a large class of chemicals that have been used in numerous consumer products and industrial processes due to their oil and water resistant properties and their exceptional stability. The products include carpet and fabric protection, food packaging, and aqueous film-forming foams (AFFF) used for firefighting. Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic

acid (PFOS) are two of the most common PFAS found in the environment and in the human body. Several states in the northeast have sites where drinking water is impacted by PFAS. In May 2016, EPA issued a drinking water health advisory level of 70 parts per trillion (ppt) for PFOA and PFOS (combined), and some NEWMOA states have set even lower standards. Detection at such low levels presents many challenges both in the field and in the laboratory.

PFAS are a diverse compound class, so they possess a range of fate and transport properties that depend heavily on the individual compound(s). Understanding fate and transport at a site is also dependent on the source(s) of the release to the environment and the hydro-geologic and other physical and chemical conditions. The same properties that make PFAS so useful in consumer products and for firefighting make them challenging to remove from soil and water, including drinking water supplies. Remediation and treatment to meet EPA's 70 ppt drinking water guideline is difficult.

PFAS is an emerging environmental and public health issue that regulators, consultants, and academic researchers are working hard to understand. In May 2016, NEWMOA co-sponsored a PFAS meeting with the Brown University Superfund Research Program (SRP). Attendees included more than 120 officials from the waste, drinking water, and health

departments in each of the northeast states, as well as EPA Regions 1 and 2. The meeting provided a forum for states and EPA to gain a baseline understanding of PFAS issues and to share their experiences.

After the meeting, NEWMOA organized a PFAS Working Group that includes approximately 55 members and held monthly conference calls. After each call, participants shared additional information and resources.

NEWMOA also planned a series of five 90-minute training webinars in partnership with the Brown University SRP, two of which occurred in FY 2016:

- “PFAS Sampling and Analysis” was attended by over 250 local, state, and federal staff and consultants from across the country
- “An Introduction to PFAS: Frequently Asked Questions” was attended by over 270 participants

## Technical Training

The issues at many waste sites are complex and complete cleanup is often unattainable due to technicalities or expense. To overcome these barriers, investigation and remediation techniques and technologies are constantly evolving. Keeping up with all these changes requires ongoing training. To address this, NEWMOA’s Waste Site Cleanup Program provides technical and programmatic training for state staff and the consulting community.

In fiscal year 2016, NEWMOA’s workshop topics were “Making Better Decisions: Real-time Data Collection and Interpretation Workshop” and “Monitored Natural Attenuation: Appropriate Tool or Easy Way Out?” In addition, NEWMOA repeated its FY 2015 “1,4-Dioxane Assessment and Remediation” workshop and held a webinar on “Geophysical Evaluation of Bedrock Drinking Water Wells: Understanding the Science.”

## Real-Time Data Collection and Interpretation

Inadequate site characterization can lead to project delays, unnecessary expenses, and uncertain results. Using traditional site characterization methods to provide enough information to address financial uncertainties can be cost prohibitive and could discourage site redevelopment. The use of innovative sampling methods and field-based characterization technologies, and the ability to interpret the data and adapt a workplan in the field can reduce the overall time and expense of performing a quality site characterization and remediation, while simultaneously yielding better information to make informed decisions.

In March 2016, NEWMOA held “Making Better Decisions: Real-time Data Collection and Interpretation” workshops in Danielson, CT, Westford, MA, and Lebanon, NH. The workshops included classroom sessions that focused on case studies, as well as three outdoor equipment demonstrations and an indoor exhibit area with five vendors of field-portable analytical equipment. The workshops reached more than 190 state and federal staff and consultants. Participants reported that the workshops were valuable for the:

- “Good presentations... and equipment demos”
- “Real-world details of field implementation by knowledgeable folks”
- “Field show and vendor hands-on, especially with new models and equipment”
- “Combination of desk top presentations and field demonstration”

## Monitored Natural Attenuation (MNA)

Natural attenuation relies on natural processes to clean up or attenuate pollution in soil and groundwater. It happens at many sites, but must be monitored to make sure it is occurring

**“NEWMOA’s Waste Site Cleanup Program proved invaluable in its ability to make mid-course adjustments in response to the important problem of poly- and perfluoroalkyl substances (PFAS) contamination in water supplies and homeowners’ wells...”**

and in a reasonable time frame. Due to its low cost compared to active remediation, many responsible parties propose MNA as the response for their sites. State programs need to know how to evaluate these requests and determine if MNA is in fact the best approach. NEWMOA designed a workshop to:

- Review the basic principles of MNA, monitoring tools, data evaluation, and optimal site conditions
- Provide an overview of MNA as a tool for site closure
- Present new developments in the field of MNA

NEWMOA collaborated with the Brown University Superfund Research Program to sponsor the “Monitored Natural Attenuation: Appropriate Tool or Easy Way Out?” workshops held in September 2016 in Danielson, CT and Chelmsford, MA. The workshops were attended by more than 130 state and federal staff and consultants. Attendees reported that the workshops were high quality and useful and made the following comments:

- “Excellent speakers”
- “Good overview of MNA, technologies, and tools to evaluate”
- “Very good technical information provided in a thorough but engaging manner”

- “Good balance of useful technical information and new research”
- “MNA is no longer just a term for me, but a concept that I can now discuss and consider professionally”

### 1,4-Dioxane Assessment and Remediation

1,4-dioxane is a challenging emerging contaminant. It is an added ingredient in many products and a manufacturing by-product. It is highly soluble in water, relatively non-volatile, and degrades slowly in subsurface environments and therefore is difficult to remove from groundwater. NEWMOA organized a “1,4-Dioxane Assessment and Remediation” [workshop](#) to present the most current information available on treatment and remediation. The workshop was held in Connecticut and Massachusetts in September 2015, and was repeated in New Hampshire in December 2016. The New Hampshire session was attended by more than 65 state staff and consultants. Participants reported that the workshop was:

- “Informative without being repetitive”
- “Pertinent and applicable”
- “A great discussion with good diversity of topics”
- “... appropriate to my current work”
- “Well organized, with lots of good information”

### Geophysical Evaluation of Bedrock Drinking Water Wells

Existing wells installed to provide drinking water supplies can provide useful information to help understand how contamination at a site will travel. Investigators can use geophysical equipment in the well to characterize the bedrock and determine pathways for migration. To help state programs better understand how this technique can be used, NEWMOA organized a “Geophysical Evaluation of Bedrock Drinking Water Wells: Understanding the Science” [webinar](#) in February 2016 that included a presentation by a nationally-recognized expert and a case study of a site in New Hampshire. Participation in the webinar was limited to state and federal staff, and over 60 attended.

### Brownfields

In addition to technical training, NEWMOA’s Waste Site Cleanup Program helps members and EPA develop strategies to improve the effectiveness of their cleanup programs, including Brownfields redevelopment. Since 2004, NEWMOA has organized at least one meeting annually of state and EPA Region 1 Brownfields program staff to discuss implementation challenges and solutions. NEWMOA was fortunate to host David Lloyd, Director,

EPA Office of Brownfields and Land Revitalization at the May 2016 meeting. In addition to hearing from Mr. Lloyd, participants discussed:

- Housing and Urban Development (HUD) resources
- Connecticut’s Brownfields Land Bank Program
- Results of Vermont’s soil background study
- State Brownfield program updates and priorities
- EPA’s Brownfields program priorities

NEWMOA’s Waste Site Cleanup Program provides vital support to help state programs address the challenges they face. The Association enables its members to learn about emerging issues and develop responses more efficiently than they would if they operated separately. Organizing training through NEWMOA is more cost-effective than having each state develop this capacity. Bringing all the state programs together also enhances the training experience by involving people with different perspectives and a broad range of experiences. As resources available for waste site cleanup programs continue to shrink, the efficiencies state programs gain through NEWMOA become even more valuable.



Vendor exhibits at the “Making Better Decisions: Real-time Data Collection and Interpretation” workshops



## SOLID WASTE AND SUSTAINABLE MATERIALS MANAGEMENT (SMM)



**SARAH WEINSTEIN**

Massachusetts Department of  
Environmental Protection

2016 NEWMOA Solid Waste  
Program Chair

**“When food waste is landfilled, it contributes to the production of methane, a potent greenhouse gas (GHG). Landfills are a significant contributor of anthropogenic GHGs. By contrast, food waste that is captured before it is discarded can feed those in need or be transformed into value-added products.”**

**H**ot topics in solid waste and sustainable materials management for NEWMOA’s Board and Workgroups in 2016 included increasing food waste recovery and diversion, disaster debris management planning, climate resiliency of the solid waste infrastructure, and increasing reuse and recycling of furniture, mattresses, carpet, and large rigid plastic items. NEWMOA was busy working on these topics and others throughout the year.

### Food Waste

According to the U.S. EPA and Department of Agriculture (USDA), 40 percent of the food produced in the U.S. is not eaten, and there are many untapped opportunities to recover food so it can feed people and animals. EPA estimates that about 15 percent of the municipal solid waste stream is food waste. EPA and USDA have established a national goal to reduce food waste by 50 percent by 2030. NEWMOA supports actions to help achieve this objective in the northeast.

Under the EPA “Food Recovery Hierarchy”, priority for use of unwanted food should first be to feed people, then feed animals, and then be directed to anaerobic digestion facilities or composting; the least preferred management approaches are combustion or landfilling. When food waste is landfilled, it contributes to the production of methane, a potent greenhouse gas (GHG). Landfills are a significant contributor of

anthropogenic GHGs. By contrast, food waste that is captured before it is discarded can feed those in need or be transformed into value-added products. After it is discarded food waste can produce nutrient rich soil through composting or energy when diverted to an anaerobic digester (AD).

There are significant opportunities to promote waste reduction and increase diversion of unwanted food from disposal in landfills and incinerators in the northeast. The technologies for converting these wastes to energy through AD are rapidly improving, and there is growing interest in expanding composting capacity. State environmental agencies in the region have begun to permit new AD and commercial composting operations. The agencies are also working with local governments and waste haulers to address challenges with food waste collection and storage.

NEWMOA’s Food Waste Workgroup is a forum for interstate collaboration and information sharing on methods for diverting food from disposal, siting and permitting of composting and AD facilities, and other regulatory and policy issues and challenges. The first step in developing plans for this material is understanding the amount of food material that could be available for diversion. NEWMOA’s Workgroup identified a need for improved estimates of this material and reviewed a variety of “calculators” that estimate food waste



*NEWMOA's guides for local government officials on the options available for reusing and recycling each type of bulky waste*

generation without having to undertake a complete waste inventory and that can help generators decide whether they are close to levels that would require them to act under state rules, such as diverting materials from disposal. Throughout 2016, the Workgroup, joined by staffs from EPA Regions 1 and 2, met to share updates and information.

Many members of the Workgroup participated in a dynamic conference, "Reduce and Recover, Save Food for People" that was co-sponsored by the Harvard Food Law and Policy Clinic, Massachusetts DEP, Recycling Works Massachusetts, and EPA Region 1 in June. The conference involved over 300 participants, including government officials at all levels, students and faculty, food donation organizations, food industry representatives, grocery stores, charities, environmental organizations, non-profit organizations involved in activities related to alleviating hunger, and others.

NEWMOA sponsored a [webinar](#) on "Anaerobic Digestion for Food Scraps" in October that covered:

- AD technologies and their pros and cons for food scraps
- The status of AD for food scraps nationally

- Private sector views of states' organics bans
- Challenges for the private sector
- Managing the outputs from AD facilities

### Bulky Waste Reuse and Recycling

Bulky wastes include furniture, carpet, mattresses, and such large rigid plastic items as children's swimming pools and play structures. In the northeast, most of these items are disposed of in landfills, which is expensive and challenging for homeowners and local waste authorities. Disposal of these materials is particularly challenging in rural communities because they are difficult to handle and transport and consume a large amount of increasingly scarce space in landfills. Some of what is thrown away can be reused or contains materials that, through recycling, can replace virgin material in the manufacturing of new products, reducing their carbon footprint and overall environmental impact.

With support from the USDA in 2016, NEWMOA assisted local waste management authorities and a variety of stakeholders in four rural areas in Maine, Massachusetts, and Vermont to develop effective strategies to reuse and recycle

carpet, furniture, mattresses, and large rigid plastic items.

NEWMOA prepared [guides](#) to help local government officials better understand the options available for reusing and recycling each type of bulky waste and to develop strategies for diverting them from landfill disposal/.

In addition, NEWMOA developed [handouts](#) customized for residents that include local options for reuse, recycling, and disposal of bulky items. NEWMOA created two template versions of these handouts so that additional communities can tailor their information to fit their needs.

NEWMOA staff led bulky waste workshops for local officials and transfer station operators in Maine, Massachusetts, New Hampshire, and Vermont throughout the year. These sessions were well attended, and participants reported that they learned that:

- "...massive amounts of mattresses are going to landfills"
- "...businesses out there recycle and repurpose these items"
- "Bulky plastics and mattresses can be recycled"
- "You can dismantle and recycle mattresses and box springs"
- "Mattresses and carpet are not yet subject to EPR"
- "Some carpets are recyclable"

### Solar Panels on Landfills

NEWMOA held a [webinar](#) in March focused on "Solar Panels on Landfills: Lessons Learned". The presenters talked about the initiatives underway in Massachusetts to expand development of photovoltaics on closed landfills and technical issues that have been addressed in facility permits.

## C+D Material Recycling

NEWMOA held a [webinar](#) in May on construction and demolition materials recycling that examined innovative projects in New York City that focused on implementing closed-loop post-consumer gypsum wallboard recycling and recycled glass used in concrete.

## Waste Reduction Model

NEWMOA provided an overview on recent revisions to EPA's Waste Reduction Model (WARM) via a well-attended [webinar](#) in July. The audience included federal, state, and local government officials, non-governmental organizations, companies, consultants, and others who are involved in solid waste management.

EPA created the WARM to help solid waste planners and organizations track and voluntarily report greenhouse gas (GHG) emissions reductions from different waste management practices. WARM calculates and totals GHG emissions for baseline and alternative waste management practices – source reduction, recycling, combustion, composting, anaerobic digestion, and landfilling. The Model calculates emissions across a wide range of material types commonly found in municipal solid waste.

The latest version of WARM was released in March 2016. Most updates concern the addition of the AD materials management pathway. EPA added energy and emissions for anaerobic digestion of organic materials, including food waste, yard trimmings, and mixed organics.

## Avian Flu Waste

NEWMOA held a series of conference calls to discuss state plans for addressing waste associated with a potential outbreak of the avian flu (also called “bird flu”) in the region. While avian flu cases have not yet been found in the northeast, state agencies are

anticipating that there will be a serious threat within the next few years as the disease migrates east and north. State environmental officials are concerned about safe management of the large number of affected birds that would have to be euthanized during an outbreak. The calls focused on the options for properly managing the deceased birds and associated waste materials through incineration and composting to prevent further spread of the disease.

## Disaster Debris Management

In 2016, NEWMOA revitalized its Disaster Debris Workgroup as a forum for sharing plans for properly managing the large quantities of debris associated with hurricanes and tornadoes, significant snow storms, and other catastrophic events. The group involves environmental and emergency response officials at the state and federal levels. It initiated a discussion about developing a regional online database of outlets for various common disaster debris materials that could provide an easy way for officials to find this information.

## Product Stewardship

Product stewardship shifts end-of-life financial and management responsibility, with government involvement, upstream to the producer and away from the public sector; thereby providing incentives to producers to incorporate environmental considerations in the design of their products and packaging. A form of product stewardship, called Extended Producer Responsibility (EPR) requires manufacturers to pay some or all of the collection and recycling costs for their products when they reach the end of their useful lives. During the past decade, northeast states have enacted more than 25 producer responsibility laws covering at least 7 categories of products, including electronics, paint, mattresses, mercury thermostats, mercury auto switches, fluorescent lamps, and

rechargeable batteries. All northeast states have adopted laws covering one or more of these products. State environmental agencies are responsible for implementing many of the requirements of the product stewardship laws, and NEWMOA supports a Workgroup to provide a forum for the state officials who manage these programs to share information and best practices. This group convened several times during the year to share updates and strategies.

## Committee on the Environment

In FY 2016, the Northeast Committee on the Environment (NECOE) asked NEWMOA to support their solid waste discussions by informing them about state product stewardship initiatives and solid waste challenges. The NECOE includes state environmental agency commissioners and directors, and its efforts are facilitated by the Coalition of Northeast Governors (CONEG). NEWMOA's product stewardship implementation workgroup compiled information on the status of state extended producer responsibility (EPR) laws and programs which was shared with NECOE during their meetings in FY 2016. In addition, NEWMOA collaborated with a sister organization, The Northeast Recycling Council (NERC) to prepare a [Fact Sheet](#) on the “Challenges Facing Municipal Solid Waste (MSW) Recycling in the Northeast”, which provided the basis for a lively NECOE discussion.

## Coordination in New York and New Jersey

NEWMOA facilitated information-sharing conference calls and an annual meeting for EPA Region 2, New Jersey, and New York SMM staff and managers. These meetings provided an opportunity for updates and coordination on such topics as food waste, EPR, waste data, and disaster debris planning and management.



## HAZARDOUS WASTE MANAGEMENT PROGRAMS



**MICHAEL WIMSATT**

New Hampshire Department  
of Environmental Services

2016 NEWMOA Hazardous  
Waste Program Chair

Discussions among hazardous waste program officials throughout 2016 focused on management of waste pharmaceuticals and other materials at retail outlets, an EPA rulemaking that sought to clarify requirements for generators of hazardous waste, and the results of enforcement at treatment, storage, and disposal facilities.

Related to these topics, NEWMOA's Hazardous Waste Program was very busy commenting on several significant federal rule proposals, including a pharmaceutical waste rule and the generator improvement rule.

### Pharmaceutical Waste Rulemaking

NEWMOA submitted detailed comments to EPA on its proposed pharmaceutical waste rule. NEWMOA was generally supportive of EPA's proposed rule and offered many suggestions to help improve the proposal.

In its comments, NEWMOA asked EPA to clarify whether healthcare facilities would be allowed to manage non-creditable hazardous waste pharmaceuticals under the proposed rulemaking without their needing to be sent to a reverse distributor, provided they are instead sent directly to a hazardous waste Treatment, Storage, and Disposal Facility (TSDF). NEWMOA viewed this as an important clarification for those charged with implementing the rule.

While NEWMOA generally supported the broad scope of waste materials included under EPA's definition of pharmaceutical, the Association expressed concern that the proposed rule could be misinterpreted to mean that it is EPA's intent to expand the scope of waste materials subject to regulation under Resources Conservation and Recovery Act (RCRA) Subtitle C. As such, NEWMOA suggested that EPA provide some additional clarification that this was not the Agency's intent.

NEWMOA asked for clarification about the inclusion of personal protective equipment (PPE) contaminated with pharmaceuticals in the definition of pharmaceutical waste. The language in the proposed rule could be interpreted by people not familiar with the details of the federal mixture and contained-in rules to include gloves used to pick up a pill, which NEWMOA does not believe was the intent. Since this rule would apply to retail pharmacies that do not typically have extensive expertise in the RCRA requirements, NEWMOA recommended that this portion of the definition be clarified to exclude PPE that may have come into contact with HW pharmaceuticals (HWP), but which have no (or de minimis amounts of) residue on them.

NEWMOA expressed concern that EPA's distinction between "potentially creditable" and "non-creditable" is practically unenforceable. As constructed, it would require inspectors to know



things about the actions and the intentions of healthcare workers that could not be known. NEWMOA asked EPA to provide further clarification on what RCRA inspectors should look for and the types of evidence health care facilities should produce to show that HWPs slated to be sent to a reverse distributor (RD) are potentially creditable.

NEWMOA supported EPA's proposed definition of healthcare facility, but recommended that it should also include school nurse's offices and infirmaries.

NEWMOA's letter expressed concern about EPA's proposal to not require labeling of the hazardous pharmaceutical waste. Unlabeled waste is easily forgotten and can end up being stored in unsecured locations where it is even more subject to diversion or improper disposal. To help facilitate compliance monitoring by EPA and authorized state programs, NEWMOA recommended that potentially creditable hazardous waste pharmaceuticals should be accumulated in a designated location and that either the designated location should be identified with signage or the containers holding potentially creditable hazardous waste pharmaceuticals be marked/labeled.

NEWMOA strongly supported EPA's proposed ban on sewer disposal of pharmaceuticals for all generators. This would serve to change the standard practice at healthcare facilities and reinforce the messages for conditionally exempt small quantity generators (CESQGs) and homeowners.

NEWMOA strongly supported the concept of exempting controlled substances from RCRA as dual regulations create too complex a network of regulatory issues. This would also complement the approach some of NEWMOA's members use for household pharmaceutical collection. NEWMOA agreed with EPA's goal of ensuring that household waste pharmaceuticals collected in Drug

Enforcement Agency (DEA) or DEA-authorized collection receptacles are sent for combustion.

NEWMOA strongly encouraged EPA to work with other agencies to identify and review existing pharmaceuticals and establish a process to review new pharmaceuticals to determine whether they qualify for regulation as hazardous waste. The current universe of pharmaceuticals that are regulated under RCRA is out-of-date given the number of pharmaceuticals that have been created in the last 35 years. In addition to identifying pharmaceuticals that are most toxic to humans, NEWMOA encouraged EPA to consider in future regulations those pharmaceuticals that have the greatest potential to impact the environment (e.g., antihistamines and endocrine disruptors). NEWMOA also recommended continued regulation of e-cigarettes and nicotine-containing e-liquids, as the safety of these products is less widely accepted because they are neither pharmaceuticals nor supplements.

NEWMOA commented on other sections of the proposed rule covering the definition of healthcare facility, hazardous waste determinations, container standards, shipments of waste to off-site locations, standards for shipping hazardous waste pharmaceuticals, conditionally exempt small quantity generator shipments of waste off-site, and interstate shipments of waste.

### Generator Improvement Rulemaking

In NEWMOA's [comments](#) on EPA's Generator Improvement Rulemaking, the Association expressed concern about the burden this rule would place on the state RCRA programs and their limited capacity to implement it. For most state RCRA programs, the staff resources available to undertake RCRA policy changes and the authorization process

have been declining for many years and are at an all-time low. These staff are currently working on the authorization process for implementing important EPA RCRA rules that the Agency has promulgated over the past five or more years. The Generator Improvement Rule would place significant burdens on these staff because of the need to compare existing state regulations against the revisions in the rule and to determine how to align the states' rules so that they reference the proper federal requirements and are at least as stringent as EPA's. In addition, public and legislative notifications and other policy-making processes that states must follow are time-consuming.

The marked increase in generator reporting from this rulemaking (i.e., small quantity generator or SQG notifications) and other pending changes to the federal hazardous waste regulations will be difficult for data management staff to keep up with. To provide adequate time for state programs to successfully implement these rules, NEWMOA recommended that EPA allow them four to six years to apply for authorization. NEWMOA also recommended that EPA allocate adequate supplemental RCRA funds to the states to at least partially off-set the resource costs associated with the authorization process.

In response to both of its letters, the Agency thanked NEWMOA for its comments and indicated that they would be considered as the Rules are finalized.

### Health and Safety Training for RCRA Inspectors

During a February NEWMOA conference call, state programs provided overviews of their health and safety training activities for RCRA inspectors. These state programs have, to varying degrees, attempted to comply with the mandates of the Occupational Safety and Health Administration (OSHA), but none has developed a unique training program

for RCRA inspectors. EPA issued a memorandum in July 2015 regarding health and safety training for inspectors. The topic of credentials and qualifications was raised in this memo. During the NEWMOA conference call, it became clear that members were unclear about the scope of EPA's memo, and the group decided to send EPA a letter seeking clarifications. NEWMOA's members consider the health and safety of their employees to be a top priority, and they wanted to ensure that they are complying with EPA's requirements for training for RCRA inspectors.

NEWMOA's [letter](#) to EPA Headquarters asked for comment about whether OSHA's training requirements satisfy those specified by EPA. If not, NEWMOA asked EPA to clarify the additional courses or activities that must be added to the states' current programs to ensure full compliance. NEWMOA also asked whether EPA requires completion of specified training courses prior to approving the issuance of credentials to state staff and whether there are potential instances where state inspectors who wish to perform a RCRA inspection may be blocked if they do not

have the approved EPA credentials.

EPA replied to NEWMOA in September stating that its memo applies only to state RCRA inspectors who are currently, or who are seeking to be, designated as federally-credentialed inspectors in states that have a signed authorization agreement with EPA giving the state the authority to conduct inspections on behalf of EPA. Inspectors working in states covered by such a state/EPA authorization agreement and who have completed the required training and have been issued EPA inspector credentials are federally-credentialed inspectors. State inspectors conducting inspections on behalf of EPA are required to follow the same training requirements as those of federal employees who are EPA inspectors, with minor exceptions. EPA's letter clarified that it was not their intention in the July 2015 memorandum to imply that there were new health and safety training requirements for inspectors in states with an authorized state RCRA program or any other authorized state program.

### Training

In June, NEWMOA held workshops for 75 state hazardous waste inspectors that covered:

- Enforcement of Land Disposal Restrictions
- Results of inspections of Treatment, Storage, and Disposal Facilities
- EPA RCRA rulemakings and policy changes
- Updates on the E-Manifest System development
- Results of inspections of dry cleaners in New Hampshire

These well-attended sessions were held in Massachusetts and New Jersey.

Throughout FY 2016, NEWMOA provided training for hazardous waste program staff through monthly information-sharing conference calls or webinars.

## LEAN AND PROCESS IMPROVEMENT FOR ENVIRONMENTAL AGENCIES

Lean and Six Sigma methods help organizations identify and eliminate unnecessary and non-value-added process steps and activities that have built up over time. These process improvement approaches were developed originally for use in the private sector for manufacturing processes, but there has been steady progress towards adapting them for use in the public sector for service and administrative processes. In non-manufacturing settings, waste (non-value-added activity) is most prevalent in processes associated with the exchange and flow of information. Government organizations are using Lean and Six Sigma to improve these administrative activities.

Most environmental agencies in the northeast are using Lean to dramatically reduce time in their permitting, data gathering and management, administrative reviews, and other activities. These agencies have found that Lean methods enable them to understand how their processes are working on the ground and to make adjustments that optimize desired outcomes. By getting routine activities to operate more quickly and efficiently, staff time can be freed to focus on higher-value functions.

In 2016, NEWMOA supported a Lean Practitioners Workgroup to facilitate information sharing to help its members learn from each other's experience and exchange technical resources. In addition to periodic conference calls, NEWMOA held several webinars to share the results of recent Lean events.

In February, NEWMOA held a [webinar](#) that covered a Lean event involving Massachusetts DEP and EPA Region 1 focused on improving the RCRA Part B license renewal process. Presenters from Mass DEP and EPA Region 1 shared the results of this successful and ground-breaking Lean event and many lessons learned.

In July, NEWMOA held a [webinar](#) to showcase a Lean event focused on streamlining and improving the Performance Partnership Agreement and related work plan negotiation processes involving EPA regional offices and state agencies. Originally, the Lean event involved EPA Region 1 and NH DES, but it expanded to ultimately include six New England state environmental agencies. Presenters included members of the core Lean team from NH DES and EPA Region 1 and other state environmental agencies.

These sessions focused on:

- EPA's proposed Pharmaceutical Rule and Generator Improvement Rule
- Pharmaceutical waste treatment and disposal
- Management of waste from intentional deployment of auto air bags
- Guidance on health and safety training for state RCRA inspectors
- State views of waste management requirements for vape bars and sales of e-cigarettes and nicotine juice
- Management of utility wastes
- Use of emergency permits for on-site treatment of unstable or reactive chemicals
- EPA's draft guidance on waste analysis plans
- Post-closure guidance for hazardous waste facilities
- Scrap metal management
- Management of waste at abandoned sites

These calls and workshops were for state and federal hazardous waste inspectors and other compliance and enforcement staff and regulatory development staff.

The evaluations from participants in the workshops and calls emphasized how important these opportunities are for state RCRA program staff. These programs are the primary training that they receive.

## 2016 NEWMOA OFFICE HAPPENINGS



*(Left to right) Jennifer Griffith, NEWMOA; Rich Bizozero, MA OTA; and Paul Locke, MA DEP at NEWMOA's Open House on January 21, 2016*



*(Left to right) Beth Debay, Deb Szaro, and Brian Tocci, EPA Region 1 at NEWMOA's Open House on January 21, 2016*



*Terri Goldberg, NEWMOA hosted a delegation of government officials from South Korea on June 6, 2016, and shared information on a wide range of environmental topics*



## INTERSTATE CHEMICALS CLEARINGHOUSE (IC2)



**KEN ZARKER**

Washington Department of Ecology

2016 IC2 Chair

### National Environmental Information Exchange Network (NEIEN) Grant

The big news in 2016 was the announcement, in mid-May, that the EPA NEIEN accepted a grant proposal submitted by the Oregon Health Authority (OHA), the Washington State Department of Ecology, and the IC2 to build an Interstate Chemicals-in-Products Reporting System. The financial support provided by this grant will allow the IC2 to build a multi-state reporting system to meet the needs of state laws such as Oregon's Toxic-Free Kids Act (TFKA), Washington State's Children's Safe Products Act, and Vermont's Act 188 (2014) regulating Chemicals of High Concern to Children, among others.

The IC2's Database Workgroup created a subgroup in June 2016 to begin preparing for the creation of this data system. That subgroup met frequently to discuss and define the data elements that the new database will encompass and the business processes that the system must be designed to accommodate.

Oregon is the latest state to pass requirements for manufacturers of children's products to report the products they manufacture that contain chemicals of concern for children's health. Vermont and Washington previously developed state-specific reporting systems. Washington has committed to using the IC2 data system as its reporting mechanism in the future.

### Cleansing Product Ingredient Disclosure

The IC2 continued to support the New York State Department of Environmental Conservation's (NYSDEC) Cleansing Product Ingredient Disclosure Program, providing technical guidance and stakeholder outreach, as requested, throughout FY 2016.

### Webinars

IC2's Training Workgroup organized and presented seven wide-ranging and informative [webinars](#), covering:

- Ken Geiser's book, *Chemicals without Harm*
- An Update on the California Safer Consumer Products Program
- The Healthy Babies Bright Futures Program
- Decision Making and Life Cycle Considerations in Alternatives Assessment
- Walmart and the Retail Industry Leaders Association (RILA) on Chemical Ingredient Disclosure
- GS1 and the Werks (UL) on Collecting Information on Chemical Ingredients
- Automotive Chemical Management and the International Material Data System (IMDS)

The webinars were attended by IC2's Members and Supporting Members, including state and local government officials, non-governmental organizations, researchers, company representatives, and others.

## Procurement Support

A group of IC2 members interested in state and local agency procurement and in exploring how the Clearinghouse can play a role in most effectively advancing low toxicity product procurement came together to create an IC2 Procurement Workgroup that met in late FY 2016.

Areas of interest include:

- Defining how states and municipalities can work together to enhance the market for less toxic products
- Identifying product categories that would be good targets for action
- Sharing specification language and facilitating or coordinating joint procurement
- Discussing how patterns of chemical use can inform environmentally preferable procurement
- Working with large vendors to harmonize green product claims with state requirements

## Databases

IC2 staff added hazard assessments to the Chemical Hazard Assessment Database (CHAD) as the Washington Department of Ecology and other IC2 members made them available. The IC2 added 11 new GreenScreens® and 5 Quick Chemical Assessment Tool (QCAT) assessments to the Database. The GreenScreens added in 2016 provide detailed hazard assessment information for acetaldehyde, benzene, benzyl chloride, isopropanol, n-butanol, n-propyl bromide, titanium dioxide, Galaxolide, dibutoxymethane, dodecylmethylamine oxide, and perfluorohexanoic acid.

Galaxolide is a synthetic musk that is a common fragrance chemical used in cleaning products. Women's Voices for the Earth commissioned the assessment of Galaxolide, which has highly persistent, bioaccumulative, and aquatic toxicity properties.

Dibutoxymethane is sold under the

trade name SolvonK4 and is increasingly used as an alternative to perchloroethylene in garment dry cleaning.

Dodecylmethylamine oxide is used in cosmetics and personal care products, cleaning products, as an antifungal and antibacterial agent, in many industrial applications, and as a laboratory reagent.

Perfluorohexanoic acid (PFHxA or C6) functions as processing aid in fluorinated polymer production and is used in aqueous firefighting foams, water/grease repellents, and other commercial products. Per- and polyfluoroalkylated substances (PFAS), of which PFHxA is one example, are components of and precursors for surfactants and surface protectors used in industrial applications and consumer products, including impregnating agents for clothing and textiles, coatings for paper and packaging, in waxes and cleaning agents, insecticides, firefighting foams, and hydraulic fluids in airplanes. PFHxA is also a breakdown product of fluorotelomer compounds used to produce stain- and grease-proof coatings on food packaging and household products. PFHxA is a candidate chemical to replace perfluorooctanoic acid (PFOA), which has been largely phased-out throughout the United States and the European Union.

IC2 staff updated the IC2 Chemicals Policy Database with legislation that was enacted in 2015 and made improvements and changes to the scope of the Database.

IC2 staff added California's Candidate Chemicals list to the Chemicals of Concern Database.

## Alternatives Assessment

During FY 2016, the Alternatives Assessment (AA) Workgroup formed a subgroup to

revise the IC2 *Alternatives Assessment Guide's* exposure assessment module to bring it into alignment with the National Academy of Sciences' (NAS) *Framework to Guide Selection of Chemical Alternatives*. The IC2 *Guide*, published in January 2014, incorporated many principles of comparative exposure assessment, and the NAS used the *Guide* as a source document for its *Framework* but placed greater emphasis on comparative exposure assessment. The AA Workgroup wanted to update the *Guide* to clarify how comparative exposure can be used within the *Guide's* frameworks to conduct AAs. The AA Workgroup plans to publish a revised version of the IC2 *Alternatives Assessment Guide* in FY 2017.

The IC2 completed a discussion paper undertaken with the support of the Lowell Center for Sustainable Production, which focused on integrating life cycle considerations in AA.

## e-Bulletins

The Clearinghouse published three IC2 *e-Bulletins* in 2016. IC2 *e-Bulletins* are distributed to all IC2 Members and Supporting Members, colleagues at EPA, other interested groups, and anyone who expresses an interest in the work of the Clearinghouse.



The IC2 website



## INTERSTATE MERCURY EDUCATION AND REDUCTION CLEARINGHOUSE



**KAREN KNAEBEL**

Vermont Department of  
Environmental Conservation

2016 IMERC Chair

### Fact Sheets

In December 2015, IMERC published updates to its Mercury-Added Product Fact Sheets for six targeted product categories, including:

- [Mercury Use in Batteries](#)
- [Mercury Use in Dental Amalgam](#)
- [Mercury Use in Formulated Products](#)
- [Mercury Use in Lighting](#)
- [Mercury Use in Measuring Devices](#)
- [Mercury Use in Thermostats](#)

The [Fact Sheets](#) summarize the data provided by manufacturers and distributors of mercury-added products to the IMERC-member states in compliance with the state Notification requirements.

They include a trends analysis of mercury use in each product category sold in the U.S. from 2001 to 2013, as well as information about the amount of mercury used in the products; why mercury has been or continues to be used in the products; state phase-outs and bans on the use of mercury in products; collection and recycling programs (where applicable); and other useful information.

Overall, mercury use in each of the product categories analyzed from 2001-2013 has declined. For the most recent reporting period between 2010 and 2013, the greatest reductions occurred in the batteries (92 percent) and

### Mercury-Added Product Notification 2013 Data Summary - Updated August 2016

Product/Component	2001	2004	2007	2010	2013	% Change 2001-2013
Batteries	2.79	2.47	2.07	7.12	0.08	-97%
Dental Amalgam	30.77	26.61	19.96	17.08	15.97	-48%
Formulated Products	1.20	1.04	1.45	1.37	0.52	-57%
Lamps	10.71	10.07	10.65	8.40	5.22	-51%
Measuring Devices	5.12	3.05	1.13	0.77	0.63	-88%
Misc. Products	4.25	2.40	2.78	2.38	2.16	-9%
Switches & Relays	60.07	51.44	29.93	19.43	N/A	-68% (2010)
Thermostats	14.63	14.45	3.74	0.02	0.05	-99%

*Note: Data presented is in U.S. short tons (1 ton = 2,000 pounds)*

lighting (37 percent) product categories. As new technology becomes available, IMERC expects these mercury product categories to continue to decline. Although the 2013 report for thermostats showed a slight increase in mercury use, manufacturers have reported to IMERC that they have completed a phase out of these devices and have sold their remaining inventory as of January 2015.

IMERC continued to collect 2013 notification data throughout the fiscal year. This includes information on the amount of mercury in products sold in the U.S. in calendar year 2013. IMERC staff updated the data analysis in August 2016. This information became the focus for two education and outreach webinars held later in the year (see below).

## Supporting Membership

In March, the NEWMOA Board of Directors approved a proposal from the IMERC Steering Committee to implement an IMERC Supporting Membership policy and process for manufacturers, distributors, and importers of mercury-added products; trade associations; and non-governmental organizations (NGOs).

Supporting members must support IMERC's mission to help states implement laws and programs aimed at getting mercury out of products, the waste stream, and the environment. Benefits of Supporting Membership include:

- Technical assistance with notification, labeling, and phase-out requirements
- Participation in webinars and discussions related to the results of mercury reduction efforts, new programs, legislation, and other important topics
- Participation in conference calls to discuss ways to improve effectiveness of IMERC's programs
- Participation in review of outreach and educational materials related to mercury-added product data analysis

- Wider access to mercury-added product data reported through the e-filing system
- Prioritization of IMERC's review of submissions and requests
- Promotion of the efforts to develop and use non-mercury alternatives

IMERC developed a formal policy and dues structure for Supporting Members, as well as necessary supporting materials, including an Application Form and Memorandum of Agreement. IMERC staff spent much of the summer promoting this option to potential supporting members and is continuing recruitment efforts in FY 2017.

## Webinars

IMERC hosted a webinar in September titled, "What Does IMERC Do With Companies' Mercury-Added Product Data?" The purpose of this event was to show how IMERC and its members utilize mercury-added product data reported through the e-filing system. More than 23 manufacturers, distributors, and importers of mercury-added products, as well as federal, state, and local government programs, academic institutions, and non-governmental organizations (NGOs) attended.

IMERC also partnered with the Product Stewardship Institute (PSI) on a September webinar, "Mercury Products: Current Uses & Trends in Stewardship Programs". In addition to IMERC's 2013 data analysis, PSI presented information on current product stewardship programs for thermostats, lamps, and auto switches. About 28 federal, state, and local government officials, academic researchers, and NGO representatives attended.

## Workgroups

IMERC's Notification, Labeling, Phase-Out, and Education and Outreach Workgroups supported the implementation of member-states' mercury-added product requirements.

The Labeling Workgroup reviewed several alternative labeling applications for lamp products, and approved two alternative labels. In many other cases, IMERC worked with manufacturers to implement the minimum standard label on their products and packaging. In June, IMERC organized a webinar with the National Electrical Manufacturers Association (NEMA) and its member companies to discuss the labeling processes for different lamp categories and the challenges related to various types of machinery associated with those processes. In response to the information presented in this webinar, the Workgroup developed a system of four possible labeling Tiers for lamps and presented these options to manufacturers in a formal letter. The Labeling Workgroup will continue its review of alternative labeling applications for these products in FY 2017.

The Phase-Out Workgroup met twice and corresponded through email to facilitate the review of several phase-out exemption applications during 2016, resulting in the approval or renewal of eight exemptions. They also coordinated with three manufacturers of mercury-added pressure transducers to develop a set of parameters where mercury use in specific devices is allowed. As of the end of FY 2016, four states have issued exemptions for this use.

The Notification Workgroup focused on finishing its review of the applications submitted for the 2013 triennial reporting year and approved 54 notification forms. IMERC staff completed the analysis of the 2013 mercury-added product data and worked with the Education and Outreach Workgroup to promote this information throughout FY 2016 via IMERC Alerts, listserv distribution, and meetings and webinars.

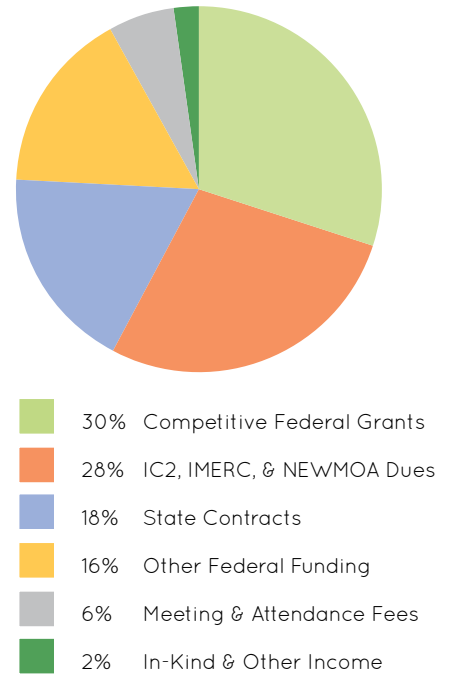
# NEWMOA FUNDING

NEWMOA relies on dues, grants, contracts, and special contributions. Its original source of funding was state dues. The New England states requested that EPA Region 1 make a portion of their RCRA hazardous waste program assistance funds available as dues and general support in the form of a grant to NEWMOA. The NEWMOA Board of Directors determines the specific amount in consultation with EPA Region 1. New York and New Jersey pay their annual dues directly to NEWMOA. IMERC and IC2 members also pay annual dues directly to NEWMOA to fund those activities.

EPA grants support solid waste activities, assistance and P2 projects, hazardous waste training, and participation in federal regulatory development. Grants for these activities were awarded by a combination of EPA Region 1 and Headquarters and occasionally by other agencies and institutions. The USDA provided grant support for solid waste projects in rural communities.

Contributions from member states in the form of contracts make up another important source of funding. Several states contribute directly to fund projects, as well as to support NEWMOA's IMERC, IC2, and Brownfields programs. NEWMOA also received a grant from the John Merck Fund to support IC2 projects.

## 2016 NEWMOA Revenues



### NEWMOA's Financial Activity

October 1, 2015 to September 30, 2016

#### Revenues

State Dues, Contracts, Fees, Contributions, & In-Kind Services/Match	\$ 392,803
Federal Grants	323,693
Miscellaneous	21
<b>Total Revenue</b>	<b>\$ 716,517</b>

#### Expenditures

Staff Salaries & Benefits	547,334
Travel & Meetings	56,019
Other Direct Program Expenses	22,466
General & Administrative*	175,968
Contracts	12,795
<b>Total Expenditures</b>	<b>\$ 814,582</b>

#### Net Assets

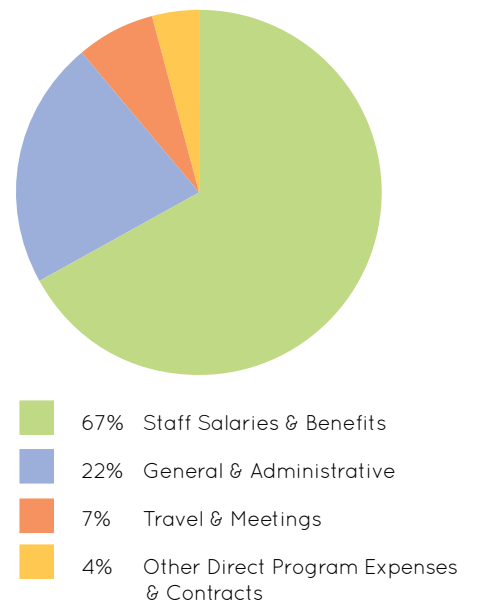
Net Assets at Beginning of Year	300,930
Net Assets at End of Year	202,865
<b>Net Change in Assets**</b>	<b>- \$ 98,065</b>

\* Includes re-location costs of \$27,124

\*\*Includes spend-down of \$20,508 in restricted funds received in prior fiscal years



## 2016 NEWMOA Expenses





## THANK YOU

### **NEWMOA greatly appreciates the financial support provided by the following agencies and organizations in FY 2016:**

California Department of Toxic Substances Control (CA DTSC)  
Connecticut Department of Energy and Environmental Protection (CT DEEP)  
Delaware Department of Health and Social Services (DE DHSS)  
Environmental Protection Agency Region 1 (EPA Region 1)  
Environmental Protection Agency Headquarters (EPA HQ)  
John Merck Fund (JMF)  
King County Local Hazardous Waste Management Program  
Louisiana Department of Environmental Quality (LA DEQ)  
Maine Department of Environmental Protection (ME DEP)  
Massachusetts Department of Environmental Protection (Mass DEP)  
Metro (Portland, Oregon)  
Michigan Department of Environmental Quality (MI DEQ)  
Minnesota Department of Health (MDH)  
Minnesota Pollution Control Agency (MPCA)  
New Hampshire Department of Environmental Services (NH DES)  
New Jersey Department of Environmental Protection (NJ DEP)  
New York State Department of Environmental Conservation (NYS DEC)  
North Carolina Department of Environment and Natural Resources (NC DENR)  
Oregon Department of Environmental Quality (OR DEQ)  
Oregon Health Authority (OHA)  
Pollution Prevention Institute (P2I) at the Rochester Institute of Technology  
Rhode Island Department of Environmental Management (RI DEM)  
San Francisco Department of the Environment (SF Environment)  
University of Nevada (UNO)  
U.S. Department of Agriculture (USDA)  
Vermont Department of Environmental Conservation (VT DEC)  
Washington Department of Ecology (WA Ecology)

### **IC2 Supporting Members:**

Citizens' Environmental Coalition  
Clean and Healthy New York  
Clean Production Action  
Clean Water Fund  
EcoValuate  
Environmental Health Strategy Center  
Lowell Center for Sustainable Production at UMass Lowell  
Maureen Gorsen (Alston & Bird)  
Oregon Environmental Council  
University of California Los Angeles Sustainable Technology & Policy Program  
University of Connecticut Health Center, Chemical Innovations Institute  
Walmart

**We also appreciate the numerous sponsors and participants in our workshops and other events who helped support those activities.**



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## **NEWMOA's Mission**

NEWMOA's mission is to develop, lead, and sustain an effective partnership of states that helps achieve a clean, healthy, and sustainable environment by exploring, developing, promoting, and implementing environmentally sound solutions for

- Reducing materials use and preventing pollution and waste
- Properly reusing and recycling discarded materials that have value
- Safely managing solid and hazardous wastes
- Remediating contaminated sites

The Association fulfills this mission by providing a variety of support services that

- Facilitate communication and cooperation among member states, between the states and the EPA, and between the states and other stakeholders
- Provide research on and evaluation of emerging issues, best practices, and data to help state programs maximize efficiency and effectiveness
- Facilitate development of regional approaches to solving critical environmental problems

NEWMOA is an equal opportunity employer and provider.



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