



# PROTECTING CHILDREN'S HEALTH

OCTOBER 2019

# LETTER FROM THE ADMINISTRATOR

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Protecting children's health is one of the most important responsibilities of the U.S. Environmental Protection Agency. As EPA Administrator, I am committed to keeping children safe where they live, learn, and play. Thanks to the support of our dedicated career staff, the agency has achieved many milestones in protecting children's health over the past year.



Some highlights include:

- Unveiling the Trump Administration's *Federal Action Plan to Reduce Childhood Lead Exposures and Associated Health Impacts*.
- Lowering the dust-lead hazard standards from 40 µg/ft<sup>2</sup> and 250 µg/ft<sup>2</sup> to 10 µg/ft<sup>2</sup> and 100 µg/ft<sup>2</sup> on floors and window sills, respectively. These standards apply to most pre-1978 housing and child-occupied facilities, such as child care and kindergarten facilities.
- Announcing approximately \$10 million in rebates to upgrade school buses with older engines, which reduces diesel emissions and improves air quality. DERA funding has supported nearly 25,000 cleaner buses across the country for America's schoolchildren.
- EPA's new voluntary Lead Testing in Schools and Child Care grant program, that will award \$43.7 million in grants to fund testing for lead in drinking water at schools and child care programs.
- EPA's new Assistance for Small and Disadvantaged Communities grant program, that will award \$42.8 million in grants to support underserved communities by bringing public drinking water systems into compliance with the Safe Drinking Water Act. Funding can also be used for conducting household water quality testing, including testing for unregulated contaminants.

This document highlights these accomplishments and the many other ongoing programs and the on-the-ground work that the agency conducts to not only protect children today, but future generations of children to come.

I want to thank the talented and dedicated career staff at the agency who work hard every day to ensure America's children have a safer, healthier, and brighter future. I look forward to all that EPA will accomplish in the year ahead. I am committed to ensuring that the protection of children's health remains an agency priority.

Sincerely,

A handwritten signature in black ink that reads "Andrew Wheeler". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Andrew Wheeler  
Administrator

# PROTECTING CHILDREN'S HEALTH

OCTOBER 2019

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# PROTECTING CHILDREN'S HEALTH

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## EXECUTIVE SUMMARY

The U.S. Environmental Protection Agency (EPA) was created in 1970 with the mission to protect human health and the environment. In 1995, EPA began to focus explicitly on the unique vulnerabilities and needs of children with respect to the air they breathe, the water they drink, and exposures to chemicals in places where they live, learn, and play.

Environmental officials increasingly recognize that the differences between children and adults are critical to acknowledge when establishing environmental health protections. Children in all stages of life, from infancy through adolescence, as well as pregnant women, face environmental health hazards in both the natural and built environments. Because children's neurological, immunological, respiratory, digestive, and other systems are still developing, they are more vulnerable than adults to environmental risk factors. In many cases, their responses are substantially different – qualitatively and quantitatively – from those exhibited by adults.

EPA is committed to assuring newborns have the best possible start in life by seeking to decrease exposures during vulnerable life stages and improve children's environmental health outcomes.

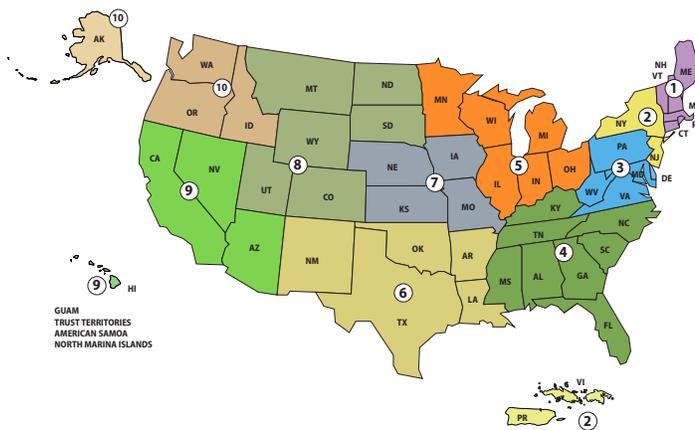
EPA seeks to ensure that the air that children breathe is clean, including inside homes and schools, as children breathe more air, and more rapidly, than adults. EPA seeks safety in the water children drink at home, school, and child care centers and that it meets protective federal standards. EPA reduces risks to children associated with chemical exposures, remediates hazardous and toxic waste sites, increases its knowledge base on children's environmental health hazards through increased research opportunities, and has a lasting impact nationwide through the on-the-ground work conducted by its 10 regional offices. To accomplish these, and many other activities, EPA works in partnership with key stakeholders including, other federal agencies, states, tribes, local communities, non-governmental organizations, health care providers, business owners, schools, parents, and grandparents. Through policy and regulatory development, education, technical assistance, and grant opportunities, EPA supports its partners in this important work that is crucial in protecting children now and in the future.

## OFFICE OF CHILDREN'S HEALTH PROTECTION

EPA's Office of Children's Health Protection (OCHP) plays an essential leadership role in carrying out the agency's mission to protect children where they live, learn, and play (<https://www.epa.gov/aboutepa/about-office-childrens-health-protection-ochp>). OCHP engages on key children's environmental health issues through educating internal and external stakeholders about known environmental risks and identified actions to prevent and reduce such risks. In response to Executive Order 13045: *Protection of Children from Environmental Health Risks and Safety Risks*, OCHP (<https://www.govinfo.gov/content/pkg/FR-1997-04-23/pdf/97-10695.pdf>) works closely with EPA's program and regional offices to develop cutting-edge approaches to children's risk assessment that are used to support the agency's decision-making process, including setting standards and creating voluntary programs to protect public health and the environment.

EPA's regional children health experts across the agency's ten regional offices, in partnership with OCHP, facilitate opportunities to collaborate with states, tribes, and local governments to provide solutions and implement local policies to ensure that all children, especially those in vulnerable communities, can thrive by living, learning, and playing in healthy environments.

## Regional Map of the U.S. EPA



Learn about children's health protection where you live by selecting your state or EPA Region (<https://www.epa.gov/children/learn-about-childrens-health-protection-where-you-live>).

## PRESIDENT'S TASK FORCE ON ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS TO CHILDREN

The President's Task Force on Environmental Health Risks and Safety Risks to Children (Task Force) is the focal point for federal collaboration to promote and protect children's environmental health. Established in 1997 by Executive Order 13045, the Task Force is comprised of representatives from 17 federal departments and offices. Currently, the Task Force is co-chaired by EPA's Administrator Andrew Wheeler and the U.S. Department of Health and Human Services (HHS) Secretary Alex Azar.

The Task Force continues to address issues such as childhood asthma, unintentional injuries, reducing exposures to lead, developmental disorders, childhood cancer, and other issues pertinent to children's health. For more information on the Task Force, visit: <https://ptfceph.niehs.nih.gov/index.htm>.

## THE CHILDREN'S HEALTH PROTECTION ADVISORY COMMITTEE

Acting in the public interest and supporting EPA in performing its duties and responsibilities under Executive Order 13045 (62 FR 19885; April 23, 1997), the Children's Health Protection Advisory Committee (CHPAC) is one of EPA's approximately 20 Federal Advisory Committees. Since 1997, CHPAC provides policy advice and recommendations to the EPA Administrator on a wide-range of environmental issues such as, air and water pollution regulations, chemical safety programs, risk assessment policies, research, and risk communication, all of which directly affect the health and well-being of children.

CHPAC members serve voluntarily, representing a broad range of interests relating to children's health, including but not limited to, specific organizations, associations, or classes of individuals, federal, state, local and tribal governments, the regulated community, public interest groups, health care organizations and academic institutions. In selecting members, EPA considers the differing perspectives and breadth of

collective experience needed to address EPA's charge and come from industry, tribal, state, county and local governments, school systems, academia, health care, and non-governmental organizations. A Request for Nominations for members was published in the Federal Register (Docket Number FRL-9996-51-OA) on September 11, 2019 (<https://www.federalregister.gov/documents/2019/09/11/2019-19658/childrens-health-protection-advisory-committee>). An announcement to re-establish CHPAC was published in the Federal Register (Docket Number FRL-10000-17-OA) on September 19, 2019 (<https://www.federalregister.gov/documents/2019/09/19/2019-20344/childrens-health-protection-advisory-committee-chpac-charter-renewal>). For more information, visit: <https://www.epa.gov/children/chpac>.

## PEDIATRIC ENVIRONMENTAL HEALTH SPECIALTY UNITS

Based at university medical centers across the United States, Canada, and Mexico, and supported through the ongoing partnership between EPA and the Agency for Toxic Substances and Disease Registry (ATSDR), PEHSUs – Pediatric Environmental Health Specialty Units (<https://www.pehsu.net/>) are an interconnected network of environmental health specialists who provide medical information and advice on the prevention, diagnosis, management, and treatments of environmental conditions that influence reproductive and children's health.

PEHSUs work with health care professionals, parents, community groups, schools, Federal, State, and local agencies to address children's environmental health issues in homes, schools, and communities. Important services provided by the PEHSU network include:

**Community Education and Outreach:** Increased awareness results in the increased ability of health service providers, especially pediatricians and obstetricians, to address environmental health issues of concern in their community. In addition, PEHSUs offer guidance on preventing and reducing harmful environmental exposures and provide practical advice on helping children cope with natural disasters.

**Training Health Professionals:** Many of the environmental risks that lead to poor health outcomes can be mitigated with proper health care provider education and preparation. Health care providers are well-positioned to deliver the education and care needed to protect children from environmental threats and to share relevant information with colleagues. PEHSUs offer on-line educational programs and case studies on environmental health issues, conduct seminars and conferences and publish peer-reviewed articles that raise environmental health literacy all of which supports the translation of health care research into medical practice.

**Consultation and Referral:** Most health care providers are not adequately trained to recognize environmentally-related risks or health problems in pregnant women, children, and adolescents. PEHSU health care providers give medical guidance on pediatric and reproductive environmental health concerns including medical management, evaluating suspected toxic exposures, identifying and interpreting diagnostic tests, and referral to specialty care. From 2014-2018, PEHSUs provided an average of over 1,700 consultations per year to health care professionals, public health officials, parents, and caregivers regarding environmental exposures and associated health effects.

**Public Health Messaging:** PEHSUs' public health messaging increases awareness of complex environmental exposures on a broad scale, provides simple ways to reduce or eliminate harmful exposures, increases environmental health literacy in the general population, and increases the likelihood of health professionals getting environmental health questions from their patient population. In the past 5 years, the PEHSU program has had over 2 million points of contact with health professionals and the public through a variety of media.

Public health officials facing wildfires in recent years sought advice from EPA on how better to respond to parental concerns about smoke exposure to children in affected areas. Collaborating with other federal agencies and EPA's Office of Air and Radiation, the Region 9 PEHSU developed child-specific information for *Wildfire*



*Smoke: A Guide for Public Health Officials* (<https://www3.epa.gov/airnow/wildfire-smoke/wildfire-smoke-guide-revised-2019.pdf>) and created *Protecting Children from Wildfire Smoke and Ash* ([https://www.pehsu.net/Library/facts/PEHSU\\_Protecting\\_Children\\_from\\_Wildfire\\_Smoke\\_and\\_Ash\\_FACT\\_SHEET.pdf](https://www.pehsu.net/Library/facts/PEHSU_Protecting_Children_from_Wildfire_Smoke_and_Ash_FACT_SHEET.pdf)).

## Region 3 (Philadelphia Regional Office): Home Visiting Professionals Trained to Help Create Healthier Home Environments

Over the years, the Mid-Atlantic Center for Children's Health and the Environment (MACCHE) has been a key partner with Region 3 to meet specific community needs among health and public health professionals. The need for children's health training targeted specifically for health educators, community health workers, nurses and other professionals that provide families home visiting services was recently identified through several community focus groups. According to the *Advancing Healthy Housing Report* by the Federal Healthy Homes Workgroup, over 30 million U.S. residences have significant structural problems or elevated levels of contaminants, such as lead or radon, that place people at potential risk for illnesses and injuries. Environmental exposures in the home are key determinants of health, particularly in children and the elderly. To further Region 3's efforts to protect children in the home environment, we partnered with MACCHE to provide focused trainings for home visiting practitioners. This targeted audience educates families in the home setting on behaviors that promote health and wellness of the individuals.

The trainings discuss and explore why children are more vulnerable, environmental concerns in the home setting, potential health effects, and outline steps to reduce exposures while emphasizing the benefits of building partnerships with families to remove barriers to reduce indoor environmental hazards in homes. Topics discussed are lead, radon, pests, pesticides, chemicals, consumer products, dust mites, mold and others. Two in-person trainings have been provided: 30 participants in Philadelphia, PA and 20 participants in Baltimore, MD. Webinars in English and Spanish are forthcoming to reach other communities throughout the Mid-Atlantic region. Home health professionals building on the knowledge gained, will create healthier home environments for thousands of families served annually by their respective organizations.



Lois Wessel of MACCHE conducting children's health and healthy homes training for home visiting staff in Philadelphia, PA.

## Region 4 (Atlanta Regional Office): Together Georgia Asthma Coalition and Southeast Address Childhood Asthma

The partnership between EPA's Region 4 Office with its PEHSU – Southeast Pediatric Environmental Health Specialty Unit – is critical in supporting EPA's commitment to advance children's health and to protect the environment where they live. Having identified Fort Valley as one of eight communities in Georgia with a high incidence of childhood asthma, the Georgia Asthma Coalition and the Southeast PEHSU partnered and convened a network of stakeholders – including Fort Valley community members and Mayor Barbara Williams – to address the 2013 asthma statistics and environmental factors contributing to childhood asthma.

North Central Health District, Peach County Community Health Assessment: Asthma-related Emergency Room Statistics (2013):

- From 2006-2010, Asthma accounted for 789 (1.3%) of emergency department visits and had a hospital discharge rate of 154.9 per 100,000.



Region 4 PEHSU, EPA's Region 4 Atlanta Regional Office, and Fort Valley Stakeholders, Fort Valley, GA

**Fort Valley, GA, a rural town about 100 miles southeast of Atlanta, has a population of approximately 8,643 people.**

- 30% of households had a at least 1 child under 18 living there
- 81% of the population is black
- 55% of children in Fort Valley living below the poverty line

- From 2006-2010, children ages 1-12 were most affected by asthma symptoms that led to an emergency department visit.
- Asthma-related emergency department visit rates were much higher for blacks (974.9 per 100,000 population) and other races (489) compared to whites (253.9).

Cultivating a relationship with the primary health care delivery system in Fort Valley, the stakeholders are developing strategies to reduce the prevalence of asthma and ER visits for the children of Fort Valley.

## Region 6: The Children’s Health Symposia: Ongoing Success Story

Over the past few years, EPA’s Region 6 (Dallas Regional Office) Children Environmental Health Program has partnered with the Region 6 PEHSU – Southwest Center for Pediatric Health – to focus efforts on training school nurses, health care providers, and public health practitioners through multiple Children’s Environmental Health Symposia. Locations include: Little Rock, AK; Texas along the

U.S./Mexico border; Brownsville, TX; Dallas, TX; El Paso, TX where one of the two held focused on school nurses; Oklahoma, which focused on Tribes; and New Orleans, LA. Region 6 has co-hosted seven symposia training more than 700 people for whom most receive continuing education credits.



Student nurses listen to a presentation at the symposium in El Paso.



EPA Acting Assistant Administrator, Office of Air and Radiation, Anne Idsal provides opening remarks at the Symposium in Dallas.

Building on the knowledge obtained during training, it is anticipated that each attendee will reach at least 100 additional people within their community, impacting well over 70,000 community members. Such partnerships are key to the success of the training events and could not be accomplished without the support from the Southwest Center for Pediatric Environmental Health, local universities, and state departments of health.





## PROTECTING CHILDREN'S HEALTH AT SCHOOL

Children spend 90% of their time indoors, and much of that time is spent in school. Healthy school environments play an important role in the health and academic success of children. Exposure to environmental hazards in schools can negatively impact the health of children and school staff, affecting attendance, concentration, and performance, as well as lead to expensive, time-consuming cleanup and remediation activities. Protecting children's health and fostering academic achievement in school settings and daycare centers is an important priority for the EPA.

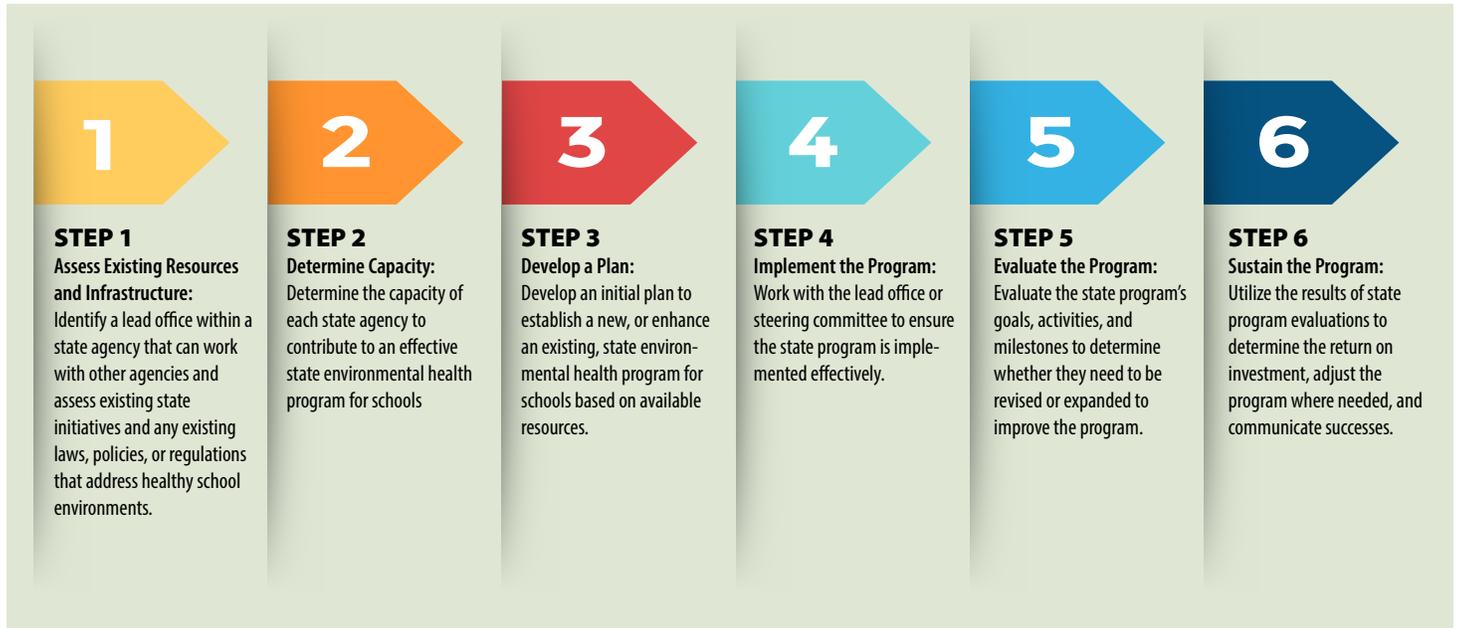
### School Siting Guidelines

Congress' *Energy Independence and Security Act of 2007* ([www.govtrack.us/congress/bill.xpd?bill=h110-6](http://www.govtrack.us/congress/bill.xpd?bill=h110-6)) required the EPA to develop, in consultation with the Department of Health and Human Services (HHS), model guidelines for the siting of school facilities that take into account: the special vulnerabilities of children to hazardous substances at potential contamination at a school site; modes of transportation available to students and staff; efficient use of energy; and potential use of a school at an emergency shelter.

In carrying out this statutory mandate, EPA developed *School Siting Guidelines* (<https://www.epa.gov/schools/view-download-or-print-school-siting-guidelines>) that encourage, inform, and improve consideration of environmental factors in local school siting decision-making processes without infringing on local decision-making authority. EPA's overarching goal for the guidelines is to serve children, staff, and the broader community. By following the recommendations in the guidelines, local education agencies, tribes, and states can provide a safe and healthy environment for children, teachers, and staff.

## State School Environmental Health Guidelines

To complement EPA's *School Siting Guidelines*, the EPA also developed guidelines for states to address school environmental health, *State School Environmental Health Guidelines* (<https://www.epa.gov/schools/about-state-school-environmental-health-guidelines>). These voluntary guidelines assist states in establishing the infrastructure needed to support schools with implementing school environmental health programs. The guidelines provide six steps that states can take to build or enhance a sustainable state environmental health program for schools, child care, and early learning centers:



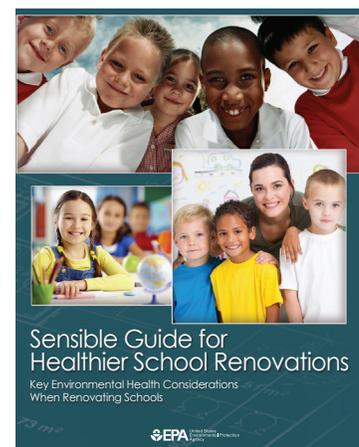
## Model Environmental Program for K-12 Schools

The Model Environmental Health Program for K-12 Schools ([https://www.epa.gov/schools/appendix-model-program-state-school-environmental-health-guidelines#LinkTarget\\_8594](https://www.epa.gov/schools/appendix-model-program-state-school-environmental-health-guidelines#LinkTarget_8594)) recommends five broad components using a three-tiered structure to demonstrate how every school, even those with little or no additional resources, can take actions to improve school environmental health and ensure that children and staff have healthier places to learn, work, and play. The five components include:

- Practice effective cleaning and maintenance
- Prevent mold and moisture
- Reduce chemical and environmental health contaminate hazards
- Ensure good ventilation
- Prevent pest and reduce pesticide exposure

## Region 9 (San Francisco Regional Office): Promoting Healthier School Renovations

Region 9 continued its multi-year effort to help school and facility managers proactively consider environmental hazards when planning and conducting renovation work in school buildings. This year, Region 9 conducted healthy school renovation workshops in Honolulu, HI, Sacramento, CA, and Reno, NV. Last year, Region 9 conducted workshops in Los Angeles, CA, Tucson, AZ, Phoenix, AZ, and Flagstaff, AZ. In total, Region 9 has provided training to more than 140 school officials and executive-level decision makers representing more than 50



school districts. Together, these school district officials serve over 1.2 million students throughout California, Arizona, Nevada, and Hawai'i.

## Addressing Asbestos Exposures in Schools

EPA's \$4.8 million Toxics Substance Control Act of 1976 (TSCA) Compliance Categorical grant builds environmental partnerships with states and tribes to strengthen their ability to address environmental and public health threats from toxic substances like asbestos, lead-based paint, and polychlorinated biphenyls (PCBs).

EPA worked with the Inspector General's (IG) Office on an audit of the prioritization of the TSCA Asbestos Hazard Emergency Response Act Compliance Monitoring Program, also known as the Asbestos-Containing Materials in Schools Rule. The IG's audit identified areas where EPA will utilize continual improvement to reevaluate its outreach and compliance assistance materials. EPA is committed to using all the tools in its toolbox to steadfastly maintain an asbestos compliance monitoring program with our partners. More information is available at: <https://www.epa.gov/asbestos/asbestos-and-school-buildings>.

## Addressing Polychlorinated Biphenyls in Schools

Polychlorinated biphenyls (PCBs) are a class of synthetic organic chemicals that were widely used in building construction, including schools built between about 1950 and the late 1970s. The manufacture and use of PCBs were banned by TSCA and phased out by 1979, except for certain limited uses. Health concerns related to PCB exposure include, but are not limited to, cancer, reproductive effects, and neurological effects and they continue to be closely regulated.

EPA developed guidance and outreach materials to assess and reduce exposure to PCBs in schools to support schools and regions in ongoing regulatory implementation and compliance.

Each of EPA's 10 regions has a designated PCB Coordinator to oversee the proper management of PCB issues within each region. They coordinate with interested stakeholders to ensure that their region's needs are addressed, and that EPA's PCB regulations are followed.

More information is available at:

<https://www.epa.gov/pcbs/epa-regional-polychlorinated-biphenyl-pcb-programs>

<https://www.epa.gov/pcbs/fact-sheet-practical-actions-reducing-exposure-polychlorinated-biphenyls-pcbs-schools-and-other>

<https://www.epa.gov/schools-healthy-buildings/renovations-and-polychlorinated-biphenyls-pcbs-healthy-school-environment>

## Addressing Chemical Exposures in Schools

Chemicals are used in schools for a range of activities including building maintenance and classroom learning. High schools usually have larger inventories and more hazardous chemicals than middle and elementary schools, but hazardous chemicals can be found in all schools, especially in science classes and labs (e.g., mercury), shop classes, and store rooms.

Thoughtful chemical purchasing, use, and management are critical for reducing chemical exposures and costly accidents, which ultimately affect student learning and attendance. EPA offers comprehensive technical resources for safe chemical management in K-12 schools (<https://www.epa.gov/schools-chemicals/toolkit-safe-chemical-management-k-12-schools>).

EPA's Environmental Response Team (ERT) is available 24/7 upon request to provide technical assistance and support to investigations and response actions in the event of chemical emergencies such as mercury spills and school science lab incidents. More information is available at: <https://www.epa.gov/ert>.

## Addressing Air Quality in Schools

EPA, through its national and regional Indoor Air Quality (IAQ) Programs, provides training and technical assistance through a coordinated set of guidance, tools and assets to equip states, tribes, and school districts to reduce the risks from radon, asthma triggers, mold, improper ventilation, pests, PCBs, lead, indoor particulate matter, and other indoor environmental health issues and in emergency response and recovery situations, such as floods, hurricanes, and wildfires.

Specific guidance includes:

- IAQ Tools for Schools Action Kit
- IAQ Design Tools for Schools
- Energy Savings Plus Health Guidance for Schools
- IAQ Tools for Schools Preventative Maintenance Tools and Resources
- IAQ Tools for Schools Connector Network

The IAQ Tools for Schools Action Kit is a comprehensive set of tools and information necessary to develop, assess, improve and implement an effective IAQ management plan at little or no cost using straightforward activities and in-house staff. The Action Kit includes information on best practices, industry guidelines, sample policies and a sample IAQ management plan. For more information visit: <https://www.epa.gov/iaq-schools/indoor-air-quality-tools-schools-action-kit>.

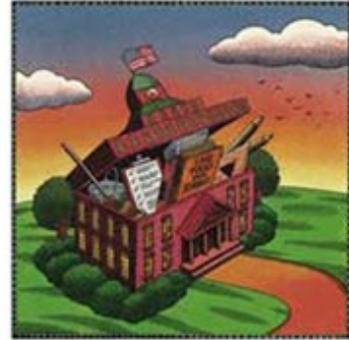
Schools can prevent issues from becoming costly problems through preventive maintenance. Saving money while keeping buildings IAQ safe and reliable is one of the top priorities in most schools across the nation. The IAQ Tools for Schools Preventative Maintenance Guidance can help school districts take a holistic approach to preventive maintenance and IAQ management. Including preventive maintenance as part of school IAQ management presents opportunities to be proactive about children's health, achieving better facility performance, extending equipment longevity and avoiding costly repairs.

EPA offers the School IAQ Assessment Mobile App to help schools maintain a healthy indoor environment by identifying, correcting and preventing IAQ problems. The IAQ School Assessment Mobile App provides schools easy access to EPA's comprehensive school IAQ management guidance and detailed walkthrough assessment checklists that address critical building-related environmental health issues. More information is available at: <https://www.epa.gov/iaq-schools/school-iaq-assessment-mobile-app>.

EPA provides extensive technical assistance through web-based trainings to school districts to equip them with the tools they need to create and maintain effective IAQ management programs. The IAQ Master Class Professional Training series provides foundational knowledge on technical topics including mold and moisture control, ventilation, cleaning and maintenance, asthma triggers and preventive maintenance practices. More information is available at: <https://www.epa.gov/iaq-schools/ondemand-training-webinars>.

Additionally, the IAQ Knowledge-to-Action Professional Training Webinar Series demonstrates how the knowledge gained in the course can be translated into actionable steps to continue improving IAQ within a school district.

## Indoor Air Quality



## Tools for Schools

## Region 1 (Boston Regional Office): Using Peer Leadership Model to Ensure Clean, Green, and Healthy Schools in Massachusetts

Supported by funding from an EPA grant, the Massachusetts Coalition for Occupational Safety and Health (MassCOSH) worked with project partners to achieve measurable improvements in addressing asthma and adverse environmental health triggers at schools in Boston and Brockton, MA. The health of Brockton and Boston students and school staff are impacted by multiple environmental health hazards in schools including mold and moisture, poor ventilation and filtration, and aged school buildings (including many over 100 years old). The percentage of students with pediatric asthma in Boston and Brockton is well above the state average. The MassCOSH project supports building clean, green and healthy schools by increasing the knowledge and capacity of students and school stakeholders of public health as a factor in design, construction, operation and maintenance of public schools. The project trains and engages youth and adult champions to strengthen local collaborations and promote environmentally healthy school conditions and reduce asthma triggers and exposure to toxic substances in the school environment.

### School Bus Rebate Program

School buses travel over four billion miles each year, providing the safest transportation to and from school for more than 25 million American children every day. However, diesel exhaust from these buses has a negative impact on human health, especially for children who have a faster breathing rate than adults and whose lungs are not yet fully developed. EPA designed this rebate program to encourage school bus fleet turnover so more children can ride buses with the cleanest emissions standards or buses that have been retrofitted to reduce emissions.

The 2018 School Bus Rebate Program provided approximately \$9.0 million to public and private fleet owners for the replacement or retrofit of older school buses.



## Region 2 (New York City Office): School Bus Rebate Program

In early 2019, EPA's Region 2 awarded rebates through EPA's Diesel Emissions Reduction Act (DERA) School Bus Rebate Program, totaling \$725,000 to replace thirty-nine older diesel school buses in New York, New Jersey, and Puerto Rico to achieve significant reductions in children's exposure to harmful emissions. Six applicants (school districts or private bus companies) received rebates between \$15,000 and \$20,000 per bus to replace older pre-2007 buses with new, cleaner models. Funded through the School Bus Rebate Program, school bus replacements will reduce emissions and exposure to particulate matter and nitrogen oxides for children at schools, bus stops, and on the buses themselves, reducing pollutants that are linked to health problems such as asthma and lung damage.

### BY THE NUMBERS:

For 2018 school bus rebate recipients, EPA awarded approximately \$8.25 million to replace or retrofit 420 older diesel school buses. Cleaner buses will transport 109 school bus fleets in 40 states, each of which will receive rebates through EPA's DERA funding. The new and retrofitted buses will reduce pollutants that are linked to health problems such as asthma and lung damage.

## Reducing Asthma in Schools and at Home

More than six million children in the U.S.—an average of one out of every 12 school-aged children— have asthma. Asthma is also a leading cause of school absenteeism.

Since asthma affects not only the health, but also the attendance and learning potential of so many children, asthma management should be a priority for every school. Controlling asthma as part of a comprehensive Indoor Air Quality (IAQ) management program can lead to reduced absenteeism and increased performance of students and staff.

Asthma triggers that affect children in schools include:

- Animal allergens
- Cockroach and other pest allergens
- Mold and moisture
- Dust mites
- Outdoor air pollutants, like ozone and particle pollution or school bus diesel exhaust

EPA's coordinated approach on asthma promotes scientific understanding of environmental asthma triggers and ways to manage asthma in community settings through research, education and outreach. With federal, state, and local partners, we are building the nation's capacity to control asthma and manage exposure to indoor and outdoor pollutants linked to asthma.

EPA is working to advance public awareness and action and enable community programs to deliver sustainable in-home environmental interventions that improve asthma control and quality of life and save thousands of dollars in avoided health care costs per child per year. With EPA's federal partners at the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Department of Housing and Urban Development (HUD), we are working to advance policies to support reimbursement of these in-home interventions by health plans and Medicaid. More information is available at: <https://www.epa.gov/asthma>.

## Air Quality Flag Program

More than 120 million people in the U.S. live in communities with unhealthy levels of air pollution. Among those most affected are children and teens, older adults, people with heart or lung problems, and people who are active outdoors. The Flag Program uses brightly colored flags based on EPA's Air Quality Index—the AQI. Schools display the flags to inform students and staff about daily air quality conditions and use the Flag Program as part of their science curriculum. More information is available at: <https://airnow.gov/>.



Air Quality Flag Program

## BY THE NUMBERS:

More than 1100 community-based programs participate in EPA's Asthma Community Network to share best practices and successful approaches to address asthma.  
[www.AsthmaCommunityNetwork.org](http://www.AsthmaCommunityNetwork.org)

### **Region 3 (Philadelphia Regional Office): American Lung Association Grant Funding**

EPA's Region 3's Air and Radiation Division provided The Mid-Atlantic Regional Office (Delaware) of the American Lung Association (ALA) with grant funding to provide ALA's Open Airways for Schools (OAS) in two schools in Delaware. The Open Airways is an evidence-based program that provides a school curriculum consisting of six 40-minute group lessons for asthmatic children during the school day. The curriculum incorporates an interactive teaching approach using group discussion, stories, games and role play to promote students' active involvement in the learning process. Topics covered include: basic information about asthma; recognizing and managing asthma symptoms; and avoiding environmental asthma triggers in-schools and in-home settings. OAS classes are led by certified trained instructors who may be school nurses or other school personnel, parents, community volunteers, or lay-educators/promoters de Salud (a promotor is a community leader that does all possible so that his or her community will meet their goals).

Two schools in Newark, Delaware – Newark Charter School and Allen Frear School – have OAS student clinics. The total number of participants in OAS training on asthma self-management care skills is approximately 30, in addition to training for 20 new OAS Facilitators for new programs within Delaware.

### **Region 4 (Atlanta Regional Office): Asthma Program**

EPA's Region 4 Asthma Program continued its partnerships with the State Asthma Coalitions in Alabama, Florida, Georgia, and North Carolina, as well as serving in a leadership capacity on the advisory board for the Georgia Asthma Coalition. Other local partners, like the American Lung Association, help Region 4 achieve stated regional goals. This connection with the states allows the program to work on projects such as, providing outreach to Boy Scouts during Asthma Awareness Month, Recognizing Asthma Friendly Schools in Georgia, and working with the Region 4 PEHSU on asthma and healthy homes initiatives. These efforts are expected to continue through individual school adoption of action steps, including: changing the flags to educate students about air quality for the day during warmer months; Asthma Coalitions' education and outreach to schools about asthma triggers; community stakeholder groups will continue to work with elected officials to improve the quality of life for families living in poverty.

### **Region 2 (New York City Regional Office): Addressing Pediatric Asthma Through Sustainable Financing for In-home Asthma Interventions**

Seed funding from EPA's Region 2 to Mount Sinai (PEHSU) was instrumental in the early development phase of the Environmental Health E-Screener, a tablet based rapid screener which prioritizes environmental concerns in the home for which there are community-based interventions available. This supplemental funding positioned Mount Sinai to make the E-screener a major area of work for the NYS Children's Environmental Health Centers (NYSCEHC). The PEHSU, in partnership with the NYC Department of Health & Mental Hygiene Healthy Homes Program, and two community organizations, Air NYC and Little Sisters of Assumption Family Health Services, developed tools that could then be used by partner centers across NY state to actively screen families with children with uncontrolled asthma that are living in high risk housing who were connected to community-based resources while the family's physician was identified. Beginning in November 2018, NYSCEHC screened 4821 families with and referred 1092 to environmental health resources, including in-home asthma interventions.

## Region 2 (New York City Regional Office): Healthy Buildings

Many long-term environmental health threats exist because of Hurricanes Maria and Irma, the most significant being lead poisoning and the growth of mold in the home, which often triggers asthma. These environmental health threats are further exacerbated by children and families experiencing toxic stress in the aftermath of these natural disasters. In EPA Region 2, the Puerto Rico and the Virgin Islands' Healthy Buildings (Homes/Public Housing/Schools/Public Buildings) Long-term Recovery Initiative (New York Regional Office) has begun to address this by providing outreach and training, technical assistance to the local agencies, community organizations, foundations, and the federal family to integrate housing, a key social determinant of health, with the indoor and outdoor environment.



St. Croix residential flooding.

## Reducing Radon Risks in Schools and at Home

Radon is a major public health risk. It's the second leading cause of lung cancer and the leading environmental cause of cancer mortality in the U.S. State and tribal radon programs are critical to EPA's national goal of minimizing and preventing radon-related lung cancer.

States and tribes receive grant funds from EPA that help finance their radon risk reduction programs. Those receiving State Indoor Radon Grant funds must align their projects and activities with EPA's goals which include building new schools with radon-reducing features, where appropriate, and testing and fixing existing schools when necessary. In Fiscal Year 2019, the State Indoor Radon Grant total allocation was \$7,789,000. More information is available at: <https://www.epa.gov/radon>.

EPA provides comprehensive guidance documents and technical webinars and conference sessions on practical radon management. To find information about radon in schools, including the publication, "Managing Radon in Schools" a document that offers a practical framework and concrete steps for managing radon from start to finish, visit <https://www.epa.gov/radon/radon-schools>.

## Region 10 (Seattle Regional Office): School Radon Training Program in Oregon

The state of Oregon recently passed legislation requiring all school districts to test for radon by January 2021. EPA's Region 10 (Seattle Regional Office) collaborated with the Oregon Health Authority (OHA), Cascade Radon, and the Inter-Mountain Educational Service District (IMESD) in Eastern Oregon to create a training partnership for school personnel to conduct radon testing in their schools. The 8-hour radon training program provides participants with a balanced approach to radon measurement and tools. EPA's radon guidance and OHA's "Testing for Elevated Radon in Oregon Schools – A Protocol and Plan" are covered in the training, which also provides an orientation for school districts to accurately test for elevated radon levels in their district's school buildings.

The collaborative partners also created training content to promote the "School Radon Communications Toolkit." This toolkit helps Oregon schools communicate radon risk, provide education, and promote awareness among school occupants while radon activities are being performed. The toolkit includes helpful suggestions and numerous templates that can be customized based on a school's need and available resources.

School radon trainings were conducted in the following locations: Pendleton (Inter-Mountain Educational District); Portland (Multnomah Educational District); Hillsboro (Northwest Educational District); and Salem (Willamette Educational District).

More than 120 school maintenance personnel attended the trainings in 2019. For more info on OHA's Radon Gas Testing in Schools page: <https://www.oregon.gov/oha/PH/HealthyEnvironments/HealthyNeighborhoods/RadonGas/Pages/Testing-in-Schools-.aspx>.

## Integrated Pest Management Programs in Schools

EPA's vision is that all students attend schools with Integrated Pest Management (IPM) programs. Our mission is to build partnerships and collaborations to promote and support IPM, demonstrate its value, and provide information on the tools available to schools interested in establishing new or improving existing IPM programs. We provide on-demand viewing of trainings on topics ranging from bed bugs and ticks to goose and rodent management. More information is available at: <https://www.epa.gov/managing-pests-schools>.

### BY THE NUMBERS:

EPA has awarded an estimated \$6 million dollars in active grants to improve education related to the safe use of pesticides to protect communities and children. EPA has also trained over 3,200 individuals through webinars on pest management topics to protect children from unnecessary exposure to pests and pesticides.

## Region 8 (Denver Regional Office): Efforts to Continue the Adoption of IPM Programs in Wyoming

The use of IPM programs and strategies to manage pests, many that are vectors of bacterial and viral diseases in schools, tribal homes and hospitals, was the focus of outreach to communities in Wyoming in FY 2019. EPA's Region 8 (Denver Regional Office) Pesticides Program funded the University of Wyoming to develop an IPM Pest Identification Guide for use by facility managers in child care facilities, schools, and hospitals. A key decision component for use of the least toxic pesticide in managing pests, is the proper identification of the pest. This will assure the selection of the most efficient pesticides products with minimum toxic effects to humans and the environment when chemical controls are warranted. These outreach efforts are central for reducing human exposure to the toxic effect of chronic pesticide exposures, particularly for children, the elderly, and patients in a hospital setting who are already immune compromised.





## REDUCING AND PREVENTING LEAD EXPOSURES

Since the 1970s, the U.S. has made tremendous progress in lowering children's blood lead levels (BLL). Despite the overall decline of BLLs over time, lead remains a significant public health concern for some children because of persistent lead hazards in the environment. Lead exposure to children can result from multiple sources and can cause irreversible and lifelong health effects. No safe blood lead level in children has been identified.

There is no safe level of exposure to lead in children. EPA is committed to reducing lead exposures from multiple sources including: paint, water, soil contamination, and ambient air. Examples of key agency initiatives are described below.

### **Federal Action Plan to Reduce Childhood Lead Exposures and Associated Health Impacts**

On December 19, 2018, the Trump Administration unveiled the *Federal Action Plan to Reduce Childhood Lead Exposures and Associated Health Impacts* (Action Plan), a product of the President's Task Force on Environmental Health Risks and Safety Risks to Children (Task Force). The Task Force is central body for federal collaboration to promote and protect children's environmental health. Established in 1997 by Executive Order 13045, the Task Force is comprised of representatives from 17 federal departments and offices. Currently, the Task Force is co-chaired by EPA Administrator Andrew Wheeler and HHS Secretary Alex Azar.

The Action Plan is a blueprint for reducing lead exposure and associated harms by working with a range of stakeholders, including states, tribes and local communities, along with businesses, property owners and parents. This coordinated federal-wide effort evaluates the predominant sources of potential exposures and works to improve the identification and treatment of children that may be exposed to lead. This effort supports clear communication with parents and others regarding the risks and methods to reduce potential lead exposures, and a coordinated multi-agency research-plan as outlined in the Action Plan.

The four goals of the Action Plan are:

- **Goal 1:** Reduce Children's Exposure to Lead Sources
- **Goal 2:** Identify Lead-Exposed Children and Improve their Health Outcomes
- **Goal 3:** Communicate More Effectively with Stakeholders
- **Goal 4:** Support and Conduct Critical Research to Inform Efforts to Reduce Lead Exposures and Related Health Risks

The *Implementation Status Report for EPA Actions Under the December 2018 Federal Action Plan to Reduce Childhood Lead Exposures and Associated Health Impacts* (Status Report) outlines EPA's progress in working strategically and collaboratively with Task Force agencies to implement the Action Plan.

The Status Report describes EPA's work to reduce childhood lead exposures and highlights many areas where EPA is collaborating with federal partners. EPA periodically posts updates and accomplishments on <https://www.epa.gov/leadactionplanimplementation>, most recently in July 2019.

## REDUCING LEAD IN DRINKING WATER

### 3Ts (Training, Testing, and Taking Action)

EPA developed the 3Ts for Reducing Lead in Drinking Water in Schools to assist with the implementation of voluntary lead in drinking water testing including identifying sources of lead such as fountains.

- Training school and child care officials to raise awareness of 3Ts program and summarize the potential causes and health effects of lead in drinking water.
- Testing drinking water in schools and child care to identify potential lead problems.
- Taking action to reduce lead in drinking water and communicate to parents, staff, and the larger school community. More information is available at: <https://www.epa.gov/safewater/3Ts>.



### Region 10 (Seattle Regional Office): Testing for Lead in Drinking Water of Tribal Schools in Washington State

The Washington Department of Health conducted drinking water lead testing in 19 tribal or public schools/childcare facilities on reservations and tribal lands in Washington State as part of the State's voluntary school lead in drinking water testing program. EPA's Region 10 Groundwater and Drinking Water Section and the Washington Department of Health contacted 29 tribes as part of the program's outreach effort.

### Reduction of Lead in Drinking Water Act

EPA is working to finalize regulatory changes to the definition of lead-free plumbing products and make other conforming changes to implement the Reduction of Lead in Drinking Water Act and the Community Fire Safety Act enacted by Congress. EPA anticipates releasing the final rule this year.

### Lead and Copper Rule

EPA is also working on revisions to update the Lead and Copper Rule (LCR). EPA is considering proposed revisions to the LCR in the areas of: tap sampling, lead service line replacement, corrosion control treatment, and public education/consumer awareness. EPA intends to propose LCR revisions in 2019.

## Water Infrastructure Finance and Innovation Act

EPA's Water Infrastructure Finance and Innovation Act (WIFIA) program helps pay for water infrastructure projects – including lead reduction. In 2018, 12 out of the 39 projects selected will reduce lead and other contaminants in the nation's drinking water systems. EPA received \$6.6 billion in collective loan requests for 2019 WIFIA Program funding.



### Region 1 (Boston Regional Office): Children's Health and Clean Water in Rural Maine

The Environmental Health Strategy Center (EHSC) is the only statewide organization in Maine entirely focused on the link between human health and toxic chemicals in the environment. EPA's Region 1 (New England Regional Office) provided grant funding to EHSC to develop a roadmap for expanding ongoing arsenic detection and prevention efforts in well water to include lead detection and raise awareness of other lead exposure pathways. Specifically, the grant project convened a coalition of public health professionals, community-based organizations, water safety business leaders, and health-affected individuals to consider how to address lead contamination of drinking water and other sources in rural Maine. The resulting "roadmap" includes long and short-term objectives and strategies, targeted benchmarks, and required resources. Comparative research will summarize potential solutions from case studies in other states and ascertain the potential for overlap in treatment options to address co-occurrence of lead and arsenic and raise public awareness of lead poisoning prevention strategies. The ongoing project collaboration among stakeholders and partners is servicing the needs of rural Maine children and families. The project is expected to reach more than 3,000 individuals through direct community outreach, community partnerships, and targeted social media and will subsidize lead sampling for low-income families who don't qualify for free waivers because of income.

#### Identifying Water Filters Certified to Reduce Lead

EPA developed a new tool to help consumers identify point-of-use drinking water filters that are certified to reduce lead. For more information, see [https://www.epa.gov/sites/production/files/2018-12/documents/consumer\\_tool\\_for\\_identifying\\_drinking\\_water\\_filters\\_certified\\_to\\_reduce\\_lead.pdf](https://www.epa.gov/sites/production/files/2018-12/documents/consumer_tool_for_identifying_drinking_water_filters_certified_to_reduce_lead.pdf)

### Region 8 (Denver Regional Office): Reducing Lead in Schools Webinar Series

In 2019, the Region 8 Lead, Drinking Water, and Children's Environmental Health Programs collaborated to plan and deliver training webinars on the topic of reducing lead in schools for stakeholders in Region 8. The first webinar titled "Why is Lead a Concern" was presented in March. The second webinar titled "Testing School Drinking Water for Lead" was presented in July. Representatives from the Town of Pinedale, WY drinking water system; Sublette County School District No. 1; and the Thompson School District, CO shared their lessons learned from voluntary lead testing programs completed in both school districts. The third webinar titled "Water Infrastructure Improvements for the Nation (WIIN) Grants and the Revised 3Ts" will be presented on October 8 during Children's Health Month. The webinars are open to the public and attendees have included state and local environmental and health departments, school districts, and technical service providers. This webinar series is part of the Region 8 Lead Action Plan Priority Area 1 to promote protection of vulnerable populations.

### Region 9 (San Francisco Regional Office): Reducing Exposure to Lead in Drinking Water at Tribal Schools

Completed in December 2018, EPA's Region 9 Lead in Tribal School Drinking Water Project engaged tribal governments, schools and water utilities to reduce children's exposure to lead in drinking water. Region 9's Tribal Drinking Water Team collaborated with internal and external partners to provide education, technical assistance and sampling for lead in drinking water at over 100 schools and facilities regularly serving children.

At each school or facility, a plumbing inventory was conducted, and water samples were collected. Plumbing inventories and collection of water samples were conducted by tribal leaders, school leaders, water utility staff, facility staff and the Indian Health Service. The Region 9 Laboratory analyzed all water samples for lead. Follow-up sampling and consultation was provided to six facilities that had samples above the lead Action

Level (AL) of 15 parts per billion. All six facilities took steps to ensure children were not consuming water containing lead above the AL. For example, one school installed point-of-use filters at all drinking water taps, one school shut off a drinking water fountain found above the AL and one school implemented a flushing program and set a long-term goal to replace plumbing building-wide.

Upon completion of the program, tribal leaders were notified that other opportunities for lead sampling would be made available in 2019 through the WIIN Act. Region 9 is working with interested tribes to continue previous efforts to provide sampling, technical assistance and education on lead in drinking water.

## **REDUCING EXPOSURES ASSOCIATED WITH LEAD IN PAINT**

Strengthening the standards for lead in dust is an important component of EPA's strategy to curtail childhood lead exposure. Title IV of TSCA requires EPA to establish hazard standards for lead-contaminated dust. Lead dust can be a major source of lead exposure in children. Lead dust can be generated when lead-based paint deteriorates or is disturbed (e.g., during renovation or repainting work).

In June 2019, EPA announced a final rule with tighter standards for lead in dust on floors and window sills to protect children from the harmful effects of lead exposure. The dust-lead hazard standards were lowered from 40 µg/ft<sup>2</sup> to 10 µg/ft<sup>2</sup> on floors and from 250 µg/ft<sup>2</sup> to 100 µg/ft<sup>2</sup> on window sills. These standards apply to most pre-1978 housing and child-occupied facilities, such as child care facilities and kindergarten facilities. EPA also continues to work toward ensuring that individuals and firms conducting lead-based paint abatement, risk assessment or inspection are properly trained and certified. EPA also continues to work toward ensuring that individuals and firms conducting lead-based paint abatement, risk assessment or inspection are properly trained and certified. More information is available at: <https://www.epa.gov/lead>.

### **Region 1 (Boston Regional Office): Reducing Childhood Lead Poisoning in Vermont**

During 2019, EPA Region 1, in coordination with the Vermont Department of Health, undertook a lead paint initiative to pro-actively improve compliance with laws that protect children from lead paint poisoning in Vermont. In 2018, 420 Vermont children under age six had an elevated BLL. EPA's Region 1 efforts focused in the Vermont communities of Bennington, Rutland and Windham counties because they were identified as areas with a higher risk of lead paint exposure due to older housing stock, high rates of renter occupied housing, and mapped data showing elevated BLLs. EPA reached out directly to the local regulated community, including construction and property management firms, and distributed compliance information to over 500 contractors and property managers in these communities. EPA worked to raise awareness and provide training on the lead paint rules, including online presentations. This place-based initiative in Vermont allowed EPA's Region 1 to work with state and local counterparts to increase awareness and improve compliance with lead paint renovation laws, therefore, reducing the risk of childhood lead exposure.

### **Region 2 (New York City Regional Office): Partnership with Governments, Industry, and Non-Governmental Organizations**

EPA chairs the Global Alliance to Eliminate Lead Paint, a voluntary partnership of governments, industry, and non-governmental organizations (NGOs) to eliminate lead paint around the world. EPA is working closely with the United Nations Environment Programme and the World Health Organization, as well as the International Paint and Printing Ink Council, the International POPs Elimination Network, the American Bar Association, and other stakeholders to help countries develop laws to address lead paint. EPA continues to partner on an international project which aims to establish lead paint laws in 40 countries. Israel and Bangladesh have passed laws this year due to the Alliance work.

The seventh annual International Lead Poisoning Prevention Week of Action takes place from October 20-26, 2019. The Week of Action provides an opportunity for organizations and institutions around the world to focus attention on lead ([http://www.who.int/ipcs/lead\\_campaign/en/](http://www.who.int/ipcs/lead_campaign/en/)).

### **Region 3 (Philadelphia Regional Office): EPA's Lead Renovation, Repair, and Painting Rule (RRP) in Philadelphia**

EPA's Mid-Atlantic Region Lead Program stepped up its already vibrant lead program with a special year-long initiative in Philadelphia to increase public awareness and compliance with EPA's Lead RRP Rule. This extensive effort involved a wide range of partners in public outreach, training, workshops, media, informational meetings to encourage companies who are affected by the rule to comply. The outreach, training, and collaboration extended to state and city agencies.

This initiative, combined with the work of many others seeking to increase compliance with lead regulations, had significant results. In 2018, there was a 9% Philadelphia-wide increase of certified firms and a 33% increase in individuals certified or recertifying as RRP renovators.

Aspects of the initiative:

- EPA coordinated with 10 Philadelphia trade associations including contracting trade and homeowner's associations to provide RRP informal training sessions. Three hundred contractors, renovators and property management firms, and paint/hardware stores participated.
- Pennsylvania's Department of Labor and Industry - who is authorized to implement the lead-based paint abatement program in Pennsylvania - trained to the City's Lead and Healthy Homes Program and the City's abatement contractors regarding the differences between the abatement and RRP rules.
- Six RRP seminars were given to a total of 200 representatives from City of Philadelphia Departments of Licenses and Inspections, Health, and the city's Philadelphia School District.
- The team's public education included: 20 public meetings where team members reached 300+ residents; an RRP poster campaign on City public trains and buses; ads in a local parents' magazine; sharing information with more than 100 daycare centers and children's health and healthy homes-focused organizations; educating customers on safe lead work practices at 20 hardware stores. Also, many organizations, community group members, and partners continued to spread information and resources extending the reach.

### **Region 4 (Atlanta Regional Office): Efforts in the City of Memphis to Decrease Lead Exposure in Children**

The City of Memphis was selected to participate in the National 6 Cities Permitting Initiative that focused on building permit offices encouraged to amend permit applications to require lead-paint certification. EPA's Region 4 engaged in an 18-month pilot project with local stakeholders providing outreach and education to families and regulatory workshops and training to contractors and renovators.

- 925 students in grades pre-k through 12th, and 1200 LeMoyne-Owen and Meharry Medical College students participated in #EPADay events developed by regional staff to increase lead awareness.
- 100 contractors received Initial and Refresher RRP certification training.
- 50 contractors, renovators, and community stakeholders received the "What is RRP?" regulatory awareness workshop.

The Region collaborated with the Shelby County permitting program to strengthen its certification requirement to work on homes built before 1978 by adding a stamp to current and new permits. EPA's Region 4 will continue community-based work activities in Memphis through support of the Shelby County Stakeholders Group efforts to improve the quality of life for its residents. In addition, further assistance to this area is being coordinated under the Community Drive Solution initiative.

### **Region 5 (Chicago Regional Office): Lead Abatement Win-Win in Flint**

Lead abatement training in Flint, MI, supported by EPA's Region 5 Office (Chicago Regional Office) turned out to benefit everyone involved. EPA collaborated with Michigan Department of Health and Human Services along with local stakeholders to present a lead abatement segment as part of a five-week construction

training program. Three sessions in February, May, and July this year taught unemployed Flint residents.

Michigan has an amendment to its Children’s Health Insurance Program funded by the Centers for Medicare and Medicaid Services that allows the state to perform lead abatement using Medicaid funds in some key areas of the state including Flint. The abatement can be implemented in the homes of children under age 19 or where a pregnant woman lives. This is essentially the “gold standard” of abatement since homes can be fixed before children are poisoned. Due to a shortage of trained abatement workers in Flint, families have experienced long waiting times for abatement services.

This collaborative effort is helping to fill the lead abatement workforce needed in Flint while helping unemployed workers. Other local stakeholders involved in the project included Flint Strive, which conducted recruitment; Mott Community College, which provided construction skills and Occupational Safety and Health Administration (OSHA) safety training; and Community Foundation of Greater Flint, which supported some of Flint Strive’s overhead costs as well as the cost of the lead abatement certification exam. MDHHS also assisted training graduates with job placement.

### **Region 6 (Dallas Regional Office): Circuit Rider Travels to Rural Communities**

For the past six years, the Lead Based Paint Program has supported a Senior Environmental Employee (SEE) to travel to rural areas of Region 6 that may not benefit from partnerships in larger metropolitan areas. This SEE Circuit Rider visits dozens of communities each year to prevent childhood lead poisoning. The Circuit Rider not only shares information on the RRP Rule, but also provides educational materials on other children’s health topics with staff of Planning and Zoning offices, Code Enforcement and Permitting Departments, public libraries, county courthouses, U.S. Post Offices, and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)/Head Start Locations. This year the circuit rider visited more than 135 communities in Texas and New Mexico and contacted 209 separate entities within those communities. In addition, the circuit rider attended four community events including three health fairs and one homebuyer’s expo.

### **Region 8 (Denver Regional Office): Eco-Healthy Child Cares Training**

EPA’s Region 8 Children’s Environmental Health and Healthy Schools Program, with funding from the Office of Children’s Health Protection hosted an Eco-Healthy Child Cares Training in Bismarck, ND in April 2019. Attendees included licensed child care providers, child care provider directors, and licensing/regulatory professionals. Region 8 partnered with the North Dakota Department of Health’s Lead Coordinator, who ensured the training was organized and advertised.

### **Region 9 (San Francisco Regional Office): Protecting Children from Lead-Based Paint Hazards**

In 2018, EPA’s Region 9 awarded a cooperative agreement to the Alameda County Healthy Homes Department (ACHHD) to support their work with the California Association of Code Enforcement Officers (CACEO) to engage local code enforcement and building inspection offices across California in responding to lead-based paint hazards in older housing.

ACHHD kicked off the pilot project by presenting a two-hour lead workshop and two lead RRP classes at the CACEO Annual Code Enforcement Seminar and Exhibitor Showcase in Seaside, CA. ACHHD held three lead RRP classes in different areas of the state—Anaheim, Oakland and Sacramento—to help ensure as many jurisdictions as possible could benefit from the training. In total, more than 100 code enforcement officers representing more than 60 jurisdictions participated in lead RRP training. Training participants learned about lead-safe work practices, EPA’s RRP Rule, and California lead regulations. ACHHD also promoted incorporation of lead safety into building inspection and code enforcement practices by providing technical assistance to jurisdictions.



ACHHD is wrapping up their project by reviewing training class evaluations and feedback from code enforcement officers. ACHHD and CACEO will discuss their findings and next steps for promoting and incorporating lead safety into code enforcement practices across the state.

## REDUCING EXPOSURES TO LEAD IN SOIL

Lead is a relatively common soil contaminant because of past and current human activity or uses (i.e., mining, lead smelter). Children who live near or play on lead-contaminated soil can be exposed through incidental ingestion of small amounts of soil or soil-derived indoor dust. Contaminated soil can also be tracked into the home. Young children often have higher rates of soil and dust ingestion because of their unique behaviors such as crawling and hand/object-to-mouth contact.

EPA actions to reduce childhood exposure to lead in soil include: addressing elevated levels of lead contamination at contaminated sites; partnering with local health officials to provide lead education in communities impacted by lead contamination; coordinating with HUD to share information on lead sites near HUD assisted housing; and offering technical assistance to brownfield communities to identify best management practices and potential funding opportunities.

More information is available at: <https://www.epa.gov/superfund/lead-superfund-sites>.

### Region 3 (Philadelphia Regional Office): Newly Developed Lead Resources

The Mid-Atlantic Center for Children’s Health and the Environment in collaboration with EPA’s Region 3 and ATSDR developed in-the-moment videos and fact sheets for families to increase awareness of lead and ways to protect children from lead in soil. Region 3 worked with federal, state/local partners and NGOs to share these videos and fact sheets with the communities they serve.

Factsheets: <https://georgetown.app.box.com/s/3yx2pxu7wevicds46i4k8v708ygn0j9l>.

Videos:

- English: <https://www.youtube.com/watch?v=Zwh-vl8ORms>
- Spanish: <https://www.youtube.com/watch?v=WfUkcgb5yUY>

## REDUCING EXPOSURES TO LEAD IN THE AMBIENT AIR

EPA actions to reduce childhood exposure from lead in ambient air include: working with state and tribal air agencies to implement the National Ambient Air Quality Standard (NAAQS) for lead; evaluating the impacts of lead emissions from aircraft using leaded aviation fuel under the Clean Air Act; and in related activities the Federal Aviation Administration is conducting a research and development program to identify unleaded aviation fuels through the Piston Aviation Fuel Initiative.

More information is available at: <https://www.epa.gov/lead-air-pollution> and <https://www.epa.gov/regulations-emissions-vehicles-and-engines/airport-lead-monitoring-and-modeling>.

## Increasing the Identification of and Enforcement of Sources Not in Compliance

EPA continues to take enforcement and cleanup actions to reduce exposure to lead contamination to protect public health and the environment. EPA reduced exposure to lead through 138 TSCA federal enforcement actions in FY 2018 and 125 actions in FY 2017, against renovation contractors, landlords, property managers, realtors, and others violating EPA’s lead paint regulations. These numbers represent a significant increase over prior years. In FY 2015, we took 75 actions under the lead-based paint RRP Rule.

## Region 10 (Seattle Regional Office): Signs in North Idaho Help Children Play Clean

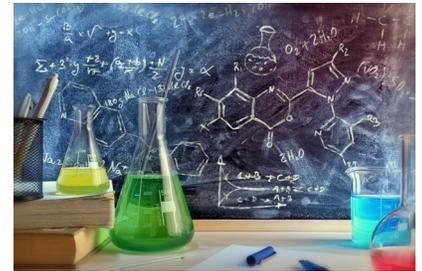
New signs continue to pop up in recreation areas around the Silver Valley in northern Idaho. The informational signs remind people to take steps to reduce exposure to lead and other harmful metals while enjoying the outdoors. Some signs also include information on local history. This area is part of the Bunker Hill Superfund Site and was home to historical mining operations. Contaminants left behind can pose a risk, especially to children's health. Already, EPA and its partners have posted more than 30 signs, with more on the way.



## Region 5 (Chicago Regional Office): Teachers Go Back to School Thanks to EPA

EPA's Region 5 provided five hours of distance education over two days to science teachers in the Eastern Upper Peninsula of Michigan about classroom chemical safety.

Educators from five school districts as well as chemistry faculty from Lake Superior State University learned ways to improve the management of chemicals used in the science curriculum. Topics included safe chemical handling (including purchase, storage, and disposal); laboratory safety; and developing a chemical hygiene plan. Participants also learned about green chemistry, and "micro-scale" chemistry education, which means utilizing modified experiments to teach chemical principles appropriate to their science curricula. The teachers also learned about EPA's Safer Choice Program, which helps consumers and businesses find products that work and are safer for human health and the environment.



The Eastern Upper Peninsula Intermediate School District STEM Coordinator collaborated with EPA on this opportunity. The coordinator and EPA staff also facilitated subsequent discussions regarding next steps the school districts will take to reduce stockpiles of outdated and excess chemicals. These actions will reduce hazardous chemical exposures to more than 2,300 students in these Michigan districts. Region 5 is also providing technical assistance to the individual school districts for the development of their district-level chemical management plans.

## Region 7 (Kansas City Regional Office): St. Joseph, Missouri Lead Task Force

St. Joseph, Missouri – or St. Joe as it's called by the locals – has a lead problem. 20 percent of children tested in the 64501 ZIP code from 2010 to 2015 had elevated BLLs. The national average is 4 percent. Lead-based paint is the most widespread and dangerous high-dose source of lead exposure for young children.

To combat this critical public health problem, in late 2018, EPA Region 7 formed a Lead Task Force to raise awareness about lead-based paint hazards in the home. This effort comprised three different outreach efforts: Child Care Providers, Renovators, and Community.

The Daycare Team met with daycare providers and developed a Continuing Education Unit-approved course with the city health department to educate providers about the hazard lead poses and how they can protect the kids in their care. They also attended health fairs, community events, the children's fair and the annual Tiny Tot Town – an annual event attended by 700 people.

EPA's Region 7 (Kansas City Regional Office) Renovators Team focused on educating renovation firms and non-professionals who might be taking on their own do-it-yourself renovation projects. Lead paint disturbed during renovations can pose even greater risks to building inhabitants. To equip renovation firms to minimize the threat lead poses, Region 7 provided free RRP Rule training. This training increased the number of RRP-certified firms in St. Joe by fifty percent.

The Renovation Team also partnered with the Missouri Department of Health and Senior Services (MDHSS) to have an event at a local home improvement store to educate the public about safe renovation techniques.

Rick Campbell from MDHSS provided a lead-safe demonstration, and EPA staff educated the DIY community to renovate lead-safe. The Renovation Team also met with neighborhood associations and the historic society.

The Community Team led several activities to educate the general public. They met with community leaders in schools, religious organizations, and nonprofits. They marched in the St. Joe Fall Festival Parade to hand out lead educational materials. They also provided education at the Mayor's Christmas Party. They partnered with a local elementary school to host a lead awareness poster contest. The students learned about lead and used that information to produce their own lead poisoning prevention posters.

As part of the general outreach, Dr. Cynthia Brownfield, a St. Joe pediatrician, filmed a TV ad about the dangers of lead. This PSA aired on three different TV stations and in local movie theaters. Dr. Brownfield also recorded a radio spot which aired on two local radio stations.

The Task Force's effort culminated in a Lead Education Summit, where federal, state and local agencies, local nonprofits and health providers came together to discuss the next steps for preventing lead poisoning in St. Joe.

### **Region 6 (Dallas Regional Office): Preventing Exposure to Lead, Pesticides, and Asthma Triggers in the Home Environment**

Region 6 has utilized the very popular Healthy Homes curriculum for training community health workers, city code inspectors, and public health practitioners since 2011. The training builds on a long tradition in Region 6 to protect children where they live, learn, and play. Partnering with municipalities, universities and hospitals, Healthy Homes train-the-trainer events have been conducted in Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. To date more than 1200 people have received training.

This past year, the Lead Based Paint Program funded the PEHSU to conduct Healthy Homes training events targeted to the professional renovator community. One training has been completed in New Orleans, and planning is underway to conduct additional trainings in Arkansas and Texas.

### **Region 7 (Kansas City Regional Office): Third Annual Pediatric Lead Poisoning Prevention Summit**

In September 2019, EPA's Region 7 Office in collaboration with HUD's Region 7 Office and the University of Kansas Health System, held a Pediatric Lead Poisoning Prevention Summit. The Summit provided an 8-hour training (approved by the State of Missouri for CEU credits) attended by more than 100 pediatricians; community health workers; academics; and local, state, and federal staff. Speakers provided information regarding:

- federal resources and programs to address lead poisoning prevention and how to apply,
- emerging decision-making geospatial approaches using health, demographics and local land use data to identify priority areas down to the census block level,
- effective community engagement and partnership approaches,
- program highlights from successful urban and rural lead programs, and
- creative approaches to increasing lead awareness, testing, and other lead poisoning prevention activities to participants from Iowa, Kansas, Missouri, and Nebraska.

Speakers included Lead Hazard Control experts from EPA and HUD; Children's Mercy Hospital (PEHSU); University of Missouri and Nebraska Methodist College; Sedgewick County, KS; Wyandotte County, KS; Madison County, MO; and Kansas City, MO health departments; and community leaders from Kansas City, MO and Kansas City, KS.

The goal of this third annual Summit was to increase knowledge and awareness regarding current regulations, resources, trends and best practices in pediatric lead poisoning prevention. Participation this year more than doubled that of previous years.



# CHILDREN'S ENVIRONMENTAL HEALTH RESEARCH

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## **EPA Research: A Total Environment Approach to Protecting Children's Health**

EPA researchers are working to stay ahead of emerging children's environmental health challenges. In collaboration with partners, they are leading interdisciplinary, novel research that holistically considers the complex interactions that link the environment to children's health and well-being.

This "total environment" approach recognizes that children can encounter chemical and non-chemical stressors to their health and well-being across three broad environmental areas: built, natural, and social.

Using this new model of exploration, agency researchers are focusing on the most pressing children's health issues. Recent examples include the following:

### **Childhood Obesity**

The CDC estimates that 17% of all children and adolescents are obese, a three-fold increase in just one generation. Children with obesity are at risk for high blood pressure, high cholesterol, diabetes, and breathing problems. What role does the environment play in such a dramatic rise? EPA researchers are conducting studies to explore how a total environment approach might help answer that question and contribute to solutions.

### **Cognitive Development**

Agency researchers are using the total environment framework to examine environmental exposures and their potential links to children's cognitive ability. EPA and partners conducted a systematic review of databases representing ten years of scientific literature to identify epidemiological studies on chemical and non-chemical stressors associated with cognitive ability in children. Further analysis identified some 110 possible stressors, reinforcing the need for developing such holistic approaches for exploring and improving children's environmental health.

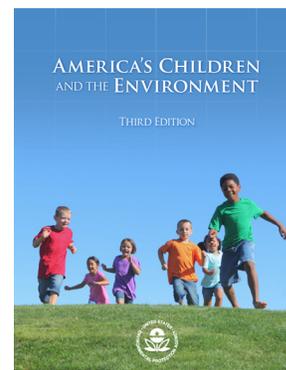
In addition to its own research, for more than twenty years the agency has supported the nation's leading children's health researchers through a robust competitive research grants program. Research focused on health outcomes (childhood asthma, birth outcomes, neurodevelopment, cancer, obesity, and reproductive development), and environmental exposures (air pollution, arsenic, chemicals of concern such as bisphenol A (BPA) and polybrominated diphenyl ethers (PBDEs), lead, pesticides, and secondhand tobacco smoke) has led to major breakthroughs in providing caregivers and communities the information and tools they need to better protect children wherever they live, learn, and play.

For more information on children's environmental health research visit: <https://www.epa.gov/children/childrens-environmental-health-research>.

## AMERICA'S CHILDREN AND THE ENVIRONMENT

America's Children and the Environment is EPA's collection of children's environmental health indicators. America's Children and the Environment was initiated in 2000, and the current collection of 37 indicators was established in 2013. The 37 America's Children and the Environment indicators are grouped into three categories: Environments and Contaminants, Biomonitoring, and Health.

EPA is updating America's Children and the Environment by calculating new values for all previous indicators as more current data becomes available and is presenting the new data on the America's Children and the Environment website at <https://www.epa.gov/americaschildrenenvironment>. This is the most extensive update to the indicators since 2013.



## AMERICA'S CHILDREN: KEY INDICATORS OF WELL-BEING 2019

EPA is a member of the Federal Interagency Forum on Child and Family Statistics and contributed to the Forum's report, *America's Children: Key Indicators of Well-Being 2019*. The report presents 41 key indicators on important aspects of children's lives and well-being, including several of EPA's America's Children and Environment indicators (e.g., percentage of children with elevated blood lead levels; percentage of children living in counties with air pollutant concentrations above the levels of the current NAAQS). The 2019 America's Children report is available at: [www.childstats.gov](http://www.childstats.gov).

# Acronyms

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America's Children and the Environment (ACE)  
Alameda County Healthy Homes Department (ACHHD)  
Federal Action Plan to Reduce Childhood Lead Exposures and Associated Health Impacts (Action Plan)  
Action Level (AL)  
American Lung Association (ALA)  
Agency for Toxic Substances and Disease Registry (ATSDR)  
Blood lead levels (BLL)  
Bisphenol A (BPA)  
California Association of Code Enforcement Officers (CACEO)  
U.S. Centers for Disease Control and Prevention (CDC)  
Children's Health Protection Advisory Committee (CHPAC)  
Diesel Emissions Reduction Act (DERA)  
Environmental Health Strategy Center (EHSC)  
Environmental Protection Agency (EPA)  
Environmental Response Team (ERT)  
Department of Health and Human Services (HHS)  
U.S. Department of Housing and Urban Development (HUD)  
Indoor Air Quality Programs (IAQ)  
Inspector General's Office (IG)  
Inter-Mountain Educational Service District (IMESD)  
Integrated Pest Management (IPM)  
Lead and Copper Rule (LCR)  
Mid-Atlantic Center for Children's Health and the Environment (MACCHE)  
Massachusetts Coalition for Occupational Safety and Health (MassCOSH)  
Michigan Department of Health and Human Services (MDHHS)  
Missouri Department of Health and Senior Services (MDHSS)  
National Ambient Air Quality Standard (NAAQS)  
Non-Governmental Organizations (NGO)  
Children's Environmental Health Centers (NYSCEHC)  
Open Airways for Schools (OAS)  
Office of Children's Health Protection (OCHP)  
Oregon Health Authority (OHA)  
Occupational Safety and Health Administration (OSHA)  
Polybrominated diphenyl ethers (PBDE)  
Polychlorinated biphenyls (PCB)  
Pediatric Environmental Health Specialty Units (PEHSU)  
Lead Renovation, Repair, and Painting Rule (RRP)  
Senior Environmental Employee (SEE)  
Science, Technology, Engineering and Math (STEM)  
President's Task Force on Environmental Health Risks and Safety Risks to Children (Task Force)  
Toxics Substance Control Act of 1976 (TSCA)  
Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)  
Water Infrastructure Finance and Innovation Act (WIFIA)

# APPENDIX 1

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## EPA Regional Offices

### REGION 1 (CT, MA, ME, NH, RI, VT)

Environmental Protection Agency  
5 Post Office Square - Suite 100  
Boston, MA 02109-3912  
Phone: (617) 918-1111  
Fax: (617) 918-1809  
Toll free within Region 1: (888) 372-7341

### REGION 2 (NJ, NY, PR, VI)

Environmental Protection Agency  
290 Broadway  
New York, NY 10007-1866  
Phone: (212) 637-3000  
Fax: (212) 637-3526

### REGION 3 (DC, DE, MD, PA, VA, WV)

Environmental Protection Agency  
1650 Arch Street  
Philadelphia, PA 19103-2029  
Phone: (215) 814-5000  
Fax: (215) 814-5103  
Toll free: (800) 438-2474

### REGION 4 (AL, FL, GA, KY, MS, NC, SC, TN)

Environmental Protection Agency  
Atlanta Federal Center  
61 Forsyth Street, SW  
Atlanta, GA 30303-3104  
Phone: (404) 562-9900  
Fax: (404) 562-8174  
Toll free: (800) 241-1754

### REGION 5 (IL, IN, MI, MN, OH, WI)

Environmental Protection Agency  
77 West Jackson Boulevard  
Chicago, IL 60604-3507  
Phone: (312) 353-2000  
Fax: (312) 353-4135  
Toll free within Region 5: (800) 621-8431

### REGION 6 (AR, LA, NM, OK, TX)

Environmental Protection Agency  
1201 Elm Street, Suite 500  
Dallas, TX 75270  
Phone: (214) 665-2200  
Toll free within Region 6: (800) 887-6063

### REGION 7 (IA, KS, MO, NE)

Environmental Protection Agency  
11201 Renner Blvd.  
Lenexa, KS 66219  
Phone: (913) 551-7003  
Toll free: (800) 223-0425

### REGION 8 (CO, MT, ND, SD, UT, WY)

Environmental Protection Agency  
1595 Wynkoop St.  
Denver, CO 80202-1129  
Phone: (303) 312-6312  
Fax: (303) 312-6339  
Toll free: (800) 227-8917  
Email: [r8eisc@epa.gov](mailto:r8eisc@epa.gov)

### REGION 9 (AZ, CA, HI, NV)

Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, CA 94105  
Phone: (415) 947-8000  
(866) EPA-WEST (toll free in Region 9)  
Fax: (415) 947-3553  
Email: [r9.info@epa.gov](mailto:r9.info@epa.gov)

### REGION 10 (AK, ID, OR, WA)

Environmental Protection Agency  
1200 Sixth Avenue, Suite 155  
Seattle, WA 98101  
Phone: (206) 553-1200  
Fax: (206) 553-2955  
Toll free: (800) 424-4372

# APPENDIX 2

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## EPA's Regional Office Affiliated Pediatric Environmental Health Specialty Unit (PEHSU)

### REGION 1

Service area: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont

New England Pediatric Environmental Health Specialty Unit - Boston, MA

Academic Affiliation: Harvard Medical School and Harvard School of Public Health

Hospital Affiliation: Children's Hospital Boston and Cambridge Hospital

Contact Info

Phone: (617) 355-8177

Toll Free: (888) CHILD14 or (888) 244-5314

Website: <http://www.childrenshospital.org/pehc>

### REGION 2

Service area: New Jersey, New York, Puerto Rico and the US Virgin Islands

Region 2 - Pediatric Environmental Health Specialty Unit (PEHSU)

Academic Affiliation: Icahn School of Medicine at Mount Sinai, Department of Environmental Medicine and Public Health

Hospital Affiliation: The Mount Sinai Hospital

Contact Info

Toll Free: 1 (866) 265-6201

E-mail: [PEHSU@mssm.edu](mailto:PEHSU@mssm.edu)

Website: <http://icahn.mssm.edu/research/pehsu>

### REGION 3

Service area: Delaware, Maryland, Pennsylvania, Virginia, Washington DC, West Virginia

Mid-Atlantic Center for Children's Health & the Environment Pediatric Environmental Health Specialty Unit - Washington, DC

Academic Affiliation: Georgetown University

Hospital Affiliation: Georgetown University Medical Center

Contact Info

Phone: (202) 687-2330

Toll Free: (866) 622-2431

Website: <http://kidsandenvironment.georgetown.edu>

### REGION 4

Service area: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

Southeast Pediatric Environmental Health Specialty Unit - Atlanta, GA

Academic Affiliation: Emory University Department of Pediatrics

Hospital Affiliation: Children's Healthcare of Atlanta – Egleston Children's Hospital and Hughes Spalding Children's Hospital

Contact Info

Phone: (404) 727-9428

Toll Free: (877) 33PEHSU or (877) 337-3478

E-mail: [sepehsu@emory.edu](mailto:sepehsu@emory.edu)

Website: <http://www.pediatrics.emory.edu/centers/pehsu/index.html>

## **REGION 5**

Service area: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin  
Great Lakes Center for Children's Environmental Health - Chicago, IL  
Academic Affiliation: University of Illinois at Chicago, School of Public Health  
Hospital Affiliation: Stroger Hospital of Cook County  
Contact Info  
Phone: (312) 864-5526  
Toll Free: (866) 967-7337  
Email: [ChildrensEnviro@uic.edu](mailto:ChildrensEnviro@uic.edu)  
Website: <http://publichealth.uic.edu/great-lakes/childrens-health>

Satellite location - Cincinnati, Ohio  
Academic Affiliation: University of Cincinnati  
Hospital Affiliation: Cincinnati Children's Hospital & Medical Center  
Contact Info  
Phone: (513) 803-3688  
Toll Free: (866) 967-7337  
Website: <http://www.cincinnatichildrens.org/service/e/environmental-health/default/>

## **REGION 6**

Service area: Arkansas, Louisiana, New Mexico, Oklahoma, Texas  
Southwest Center for Pediatric Environmental Health - El Paso  
Academic Affiliation: Texas Tech University Health Sciences Center - Paul L. Foster School of Medicine  
Hospital Affiliation: University Medical Center of El Paso & El Paso Childrens Hospital  
Contact Info  
Phone: (915) 534-3807  
Toll Free: (888) 901-5665  
E-mail: [swcpeh@ttuhsc.edu](mailto:swcpeh@ttuhsc.edu)  
Website: <http://swcpeh.org>

## **REGION 7**

Service area: Iowa, Kansas, Missouri, Nebraska  
Mid-America Pediatric Environmental Health Specialty Unit - Kansas City, Missouri  
Academic Affiliation: University of Missouri-Kansas City School of Medicine  
Hospital Affiliation: Children's Mercy Hospitals and Clinics  
Contact Info  
Phone: (913) 588-6638  
Toll Free: (800) 421-9916  
E-mail: [mapehsu@cmh.edu](mailto:mapehsu@cmh.edu)  
Website: <http://www.childrensmercy.org/mapehsu>

## **REGION 8**

Service area: Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming  
Rocky Mountain Pediatric Environmental Health Specialty Unit - Denver, Colorado  
Academic Affiliation: University of Colorado Health Sciences Center  
Hospital Affiliation: Denver Health and Hospitals Authority and the Rocky Mountain Poison and Drug Center  
Contact Info  
Toll Free: (877) 800-5554  
Website: <http://www.rmrpehsu.org>

## **REGION 9**

Service area: Arizona, California, Hawaii, Nevada

Western States PEHSU - San Francisco, California

Academic Affiliation: University of California at San Francisco

Hospital Affiliation: University of California San Francisco Medical Center

Contact Info

San Francisco:

Phone: (415) 206-4083

Toll Free: 866-UC-PEHSU or (866) 827-3478

E-mail: [pehsu@ucsf.edu](mailto:pehsu@ucsf.edu)

Website: <http://wspehsu.ucsf.edu/>

## **REGION 10**

Service area: Alaska, Idaho, Oregon, Washington

Northwest Pediatric Environmental Health Specialty Unit - Seattle, Washington

Academic Affiliation: University of Washington: Department of Occupational and Environmental Health Sciences, Occupational and Environmental Medicine Program, Department of Pediatrics

Hospital Affiliation: University of Washington Medical Center; Harborview Medical Center; Children's Hospital and Regional Medical Center

Contact Info

Toll Free: 1-877-KID-CHEM or (877) 543-2436

E-mail: [pehsu@u.washington.edu](mailto:pehsu@u.washington.edu)

Website: <http://deohs.washington.edu/pehsu>



