

Overview of EPA's State Indoor Radon Grants Program:

A Focus on Activities Conducted during Fiscal Years 2017 – 2018

Radon is the second-leading cause of lung cancer after smoking. Exposure to radon causes an estimated 21,000 lung cancer deaths annually. Effective, affordable measures to reduce indoor radon are available and, when employed, can prevent radon-induced lung cancer and save lives. For more than 30 years, the U.S. Environmental Protection Agency (EPA or the Agency) has provided critical funding to support state, territory, and tribal efforts to reduce radon-related lung cancer through the State Indoor Radon Grants (SIRG) program. This collaborative partnership between the states, territories, tribes and EPA is critical in reducing radon risk and saving lives. States and tribes are financial partners in the SIRG program, matching 25 percent in their first year of participation and at least 40 percent of the federal funds received every consecutive year.

State and tribal radon programs are making significant progress in implementing Congressional direction to the Agency with regard to use of SIRG funds. Despite notable progress, the radon problem in the United States continues to be a serious public health issue. Millions of homes with elevated radon levels remain, and approximately 20,000 Americans die annually from radon-induced lung cancer, including people who have quit smoking or never smoked. In fact, lung cancer ranks among the top 10 causes of cancer death in the United States among adults who have never smoked.¹ This reinforces the need for outreach, awareness and continued risk reduction measures in the United States focused on radon.

National Radon Action Plan

This Plan represents a collaborative effort among 11 organizations dedicated to eliminating avoidable radon-induced lung cancer in the United States, with the near-term goal of reducing radon risk in 5 million homes and saving 3,200 lives annually by 2020. Led by the American Lung Association, the Plan is aimed at sustainably incorporating radon testing, radon mitigation and radon-resistant construction into systems that govern purchasing, financing, constructing, and renovating homes and other buildings. The Plan builds on earlier federal action. View the plan at www.radonleaders.org/resources/nationalradonactionplan.

State and tribal radon programs remain vital to national efforts aimed at reducing radon risk and complement the work of the National Radon Action Plan (NRAP) partners. (See the overview of the NRAP above.) About 7 million homes are estimated to have levels of radon above the EPA action level. Housing construction during the last 25 years has contributed a significant number of homes with elevated radon levels.

Appropriation & Accompanying House Report

Congress appropriated \$8.051 million to EPA for the SIRG program in FY17 (\$7.911 million after rescission). For most grantees FY17 funding primarily supports activities conducted during the last half of FY17 and in FY18. This report primarily covers activities conducted during that timeframe. The FY17 SIRG appropriation was accompanied by House Report 114–632, which contained several recommendations specific to the application of SIRG funds in four broad areas:

1. Awareness, education and outreach to the medical community and inclusion of radon within state cancer control plans.
2. Promote radon awareness through real estate transactions.
3. Inform local school systems about radon exposure risks, provide testing and mitigation of schools, and promote awareness through child care providers.
4. Education and technical support related to industry best practices and standards and the adoption of radon-related guidelines in building codes.

¹ Samet, J. M., E. Avila-Tang, P. Boffetta, L. M. Hannan, S. Olivo-Marston, M. J. Thun, and C. M. Rudin. 2009. "Lung Cancer in Never Smokers: Clinical Epidemiology and Environmental Risk Factors." *Clinical Cancer Research* 15 (18): 5626–5645.

EPA's Implementation of the SIRG Program

The primary aim of EPA's radon program is to protect public health, including the health of families, by reducing the risk from radon exposure. EPA recommends that all homes be tested for radon; testing is the only way to know whether a home or building has high radon levels. The most impactful risk reduction strategies are those that directly result in expanded radon testing of existing homes, mitigation of high radon levels within those homes, and radon-resistant new construction. Some state radon programs have developed databases and systems for tracking residential radon testing, mitigation, and radon-resistant new construction home building data.

The House Report recommendations were considered in the context of the Indoor Radon Abatement Act's statutory priorities. For all grantees, additional consideration was given to work underway in current work plans, capabilities, state regulatory authority and capacity. Metrics outlined in the House Report align with EPA's implementation of the SIRG program and the goals of the NRAP, to eliminate avoidable radon-induced lung cancer in the United States.

Environmental Public Health Tracking

Radon testing data was recently added to the National Environmental Public Health Tracking Program operated by the Centers for Disease Control and Prevention (CDC). Some state radon programs, already collecting radon testing and mitigation data, have advanced CDC's efforts by providing testing results. CDC continues to work with partners to add data from additional states. Key partners include state environmental and health agencies, universities, the American Association of Radon Scientists and Technologists, and the EPA. View current reporting at <https://www.cdc.gov/features/trackingnetwork/index.html>.

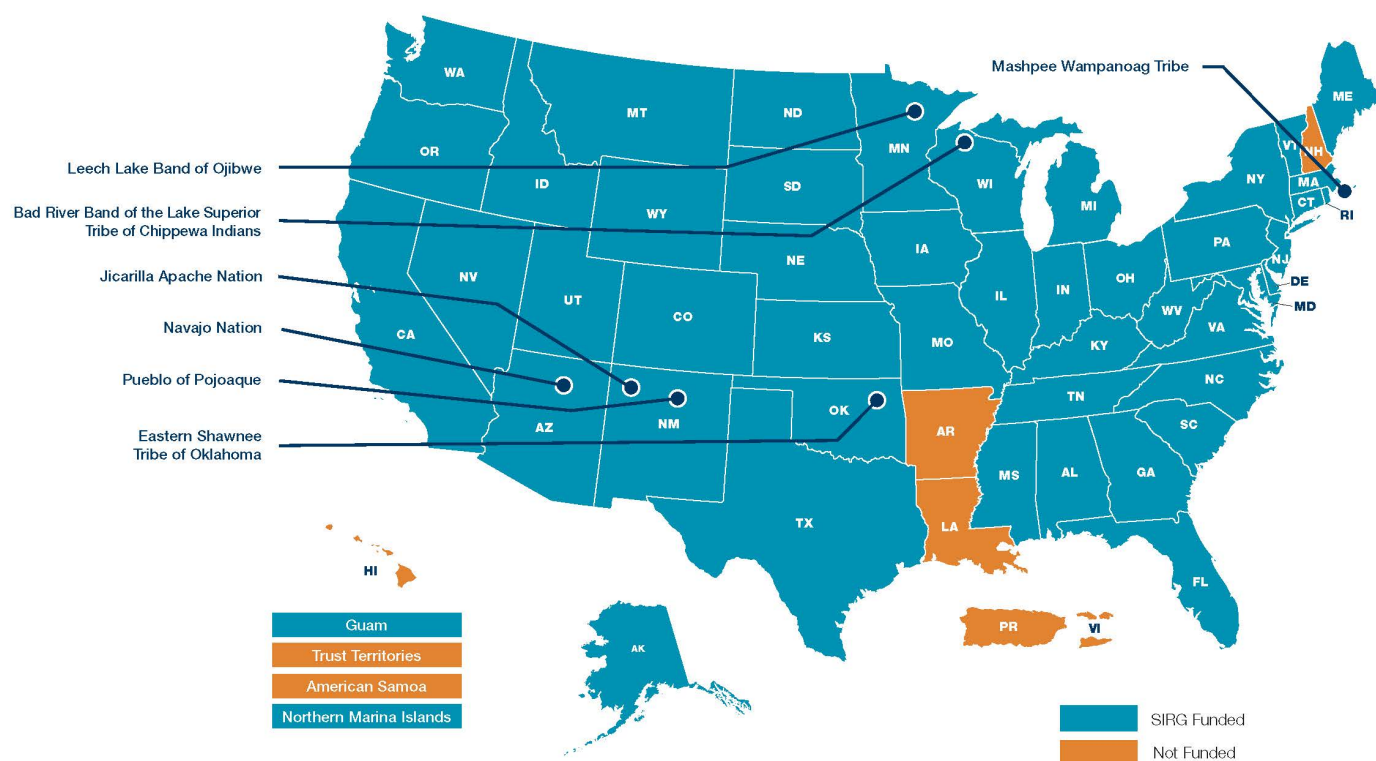
Key Reporting Metrics

In addition to standard programmatic reporting metrics, states and tribes reported this year on work planned or already in progress in six activity areas aligned with EPA's radon-related strategic goals and in response to House Report 114–632:

1. Promoting awareness about radon exposure to the **medical community**.
2. Including radon in **state cancer control plans (CCPs)**.
3. Promote radon awareness through **real estate transactions**.
4. Testing for and remediating radon in **schools** in high-risk radon areas.
5. Providing **continuing education (CE) and technical support**.
6. Including radon-reduction strategies in **state and local building codes (industry codes)**.

Overall Findings

The SIRG program received 51 responses describing state and tribal efforts that address the key areas identified in House Report 114–632, representing a response rate of 94 percent. EPA examined the planned and in-progress activities and coded them into three categories. If a state or tribe had achieved actions with high potential for risk reduction, the response was coded as "primary." Actions that seek to keep the public aware and informed about the risks of radon but may not directly lead to risk reduction were coded as "secondary." If no plans had been made within a certain area, the response was coded as "not applicable." Building on work initiated or accomplished in previous years, EPA found that nearly every grantee was addressing at least one component, and in many cases several components, through activities that represent "primary actions" and opportunities for risk reduction. **The summary of the states' and tribes' responses tells a powerful story of risk reduction using SIRG funds in alignment with Congressional direction.**

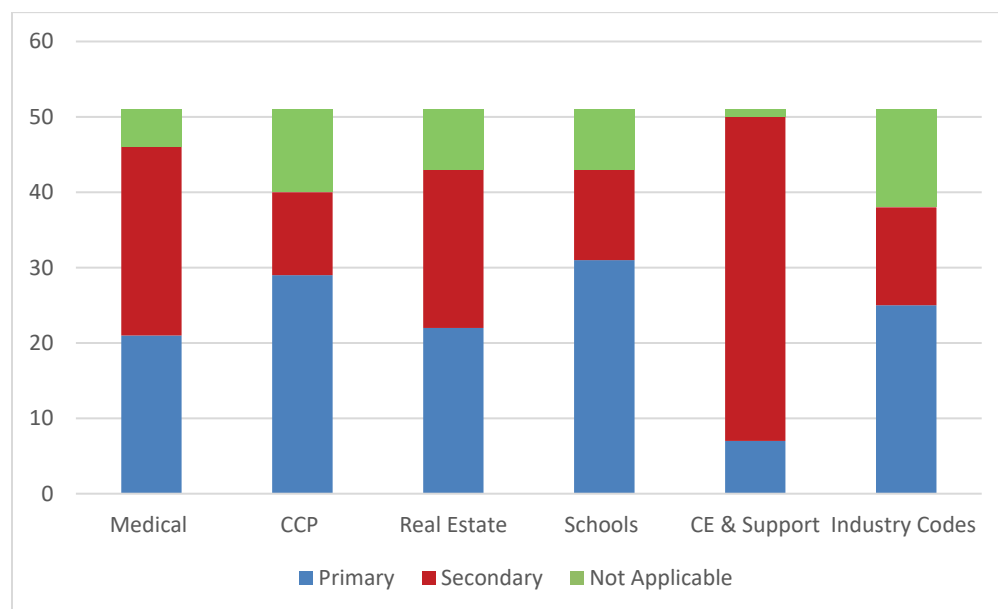


Map showing states, territories and tribes that received FY17 SIRG funding.

Key Take-Aways

- 46 of the 47 states (including the District of Columbia) that received FY17 SIRG funding responded. Of the seven tribes that received FY17 SIRG funding, five tribes responded.
- The majority of grantees including tribes (61%, 31 out of 51) perform primary actions aimed at reducing radon exposure in schools and building new schools with radon-reducing features.
- Demonstrating a strong increase over the previous year, 90% of the grantees (46 out of 51) develop and disseminate educational materials and/or engage in outreach events for medical professionals.
- Nearly all grantees (98%, 50 out of 51) are undertaking activities to provide continuing education and technical support. For some grantees this includes developing continuing education courses for professionals or providing training to building code officials and real estate professionals on radon-resistant new construction. Similar to the previous reporting cycle, providing continuing education and technical support represents an important area of investment for nearly all SIRG-funded programs.
- As a result of grantee efforts, 85% (40 out of 47) of state cancer control plans address radon. Nearly 62% (29 out of 47) of state cancer control plans include strategies aimed specifically at reducing radon risk, representing a significant increase from the previous reporting cycle.
- Maryland applied for and received SIRG funding to establish a state radon program for the very first time in FY17, providing a source of valuable risk reduction resources to residents of the state.
- Tribes receiving SIRG funding continue to excel in the area of testing for and remediating radon in their tribal communities. All five reporting tribes conducted testing or distributed test kits to evaluate radon levels in community buildings, including schools, and homes.

The below graph highlights the number of states and tribes undertaking actions to reduce radon exposure risk in each of the activity areas identified in House Report 114-632.



State and Tribal Actions Within Activity Areas (n = 51)

Spotlight: Successful Approaches for Reducing Radon Risk

This section showcases examples of activities funded at least in part by EPA's SIRG program that states and tribes are undertaking in alignment with Congressional direction.

Education and outreach to the medical community:

- The **Kentucky** Cabinet for Health and Family Services and the University of Kentucky partnered together to publish a continuing education course for health professionals outlining the risks of radon. Since it was introduced in 2016, over 150 health professionals in the state have completed the course.
- **Wisconsin** Department of Health services actively distributes the Radon Guide for Health Care Providers via radiation inspectors who visit over 1,000 medical clinics across the state to review medical equipment each year. While conducting routine inspections, a copy of the guide is distributed with a cover sheet for health care professionals, explaining the risks of radon and resources available to residents through the Wisconsin Department of Health services.
- The **Connecticut** Radon program developed a radon module for the Educating Practices in the Community (EPIC) Program, designed to deliver topical information on child health and developmental issues to pediatricians, family physicians, and other health care professionals. The state radon program has also focused on distributing the Radon Guide for Health Care Providers to all licensed pulmonologists in the state and at American Lung Association of New England events.
- The **Navajo Nation** collaborates with the Navajo Birth Cohort Study which seeks to determine whether exposure to uranium affects birth outcomes and childhood development on the Navajo Nation. The Navajo Radon Program assists by providing radon test kits that are deployed in conjunction with the study's other measurement activities to assess environmental exposures.

- The **Pennsylvania** Radon Program continues to promote radon awareness through their Newborn Program. More than 100 hospitals have partnered with the state radon program to share radon information and free test coupons to parents of newborns. In FY18, the state received over 500 returned test kits from parents of newborns.

Inclusion of radon in state cancer control plans:

- The **Colorado** Cancer Control Plan includes objectives related to educating the public, homeowners, building owners, sellers, realtors, and policymakers about radon and its risk for lung cancer. Specific goals focus on educating builders, code officials, city councils and county commissioners on radon, implementation of radon-resistant features in new construction, and the importance of radon testing and information disclosure during real estate transactions.
- The **Indiana** State Department of Health worked with the Indiana Cancer Consortium to include radon prevention in the Indiana Cancer Control Plan 2018-2020. Focus areas of the Cancer Control Plan are primary prevention, early detection, treatment and survivorship. The Department has engaged in primary prevention and outreach efforts to encourage testing and mitigating for radon.

Testing and remediation of schools in high-risk radon areas:

- The **Vermont** Department of Health has offered free radon tests for any school in Vermont since 2001 and conducts radon tests in schools across the state that are interested. The Vermont Radon Program has tested 80 schools to date.
- Building on cumulative efforts, **Illinois** school districts tested 80 school buildings and 5,538 classrooms as part of a comprehensive measurement strategy that evaluates entire school buildings.
- **Tennessee** is advancing radon awareness through a “Radon Teacher Workshop” designed to help educators learn about the risks of radon and how it is measured. Several cities within the state have initiated school testing programs. The metro Nashville area has developed an on-going testing and mitigation schedule in all schools, and the City of Knoxville has tested a total of 56 elementary schools.
- In partnership with the state Department of Education, the **Maine** Radon Program is developing requirements for installation of radon systems in new school construction in high radon areas, with the goal of eventually incorporating requirements statewide.
- The **Leech Lake Tribal Nation** oversaw and assisted with testing the Bug-o-nay-ge-shig Tribal school by providing short-term radon-measuring devices.
- The **New York** Radon Program provides testing information and technical assistance to schools and educational facilities throughout the state. Radon test kits are provided as a discounted cost to school districts when requested. In 2017, ten facilities in four districts were tested for radon through the state’s program.

Addressing radon in real estate transactions:

- The **Virginia** Radon Program developed a Radon for Realtors course that was approved for continuing education credits by the Virginia Realtors organization. Throughout FY18, Virginia held 18 training sessions educating 443 realtors on the importance of testing radon as part of all real estate transactions.
- **Delaware** state law requires disclosure of radon test results, distribution of radon information from real estate agents to clients, and disclosure forms that must be signed by all parties during real estate transactions. Real estate agents are required to provide homebuyers with radon risk information and are encouraged to test for radon.

- The **Minnesota** Radon Awareness Act, which became effective in 2013, requires home sellers provide disclosure of a property's radon levels and mitigation, a radon warning statement, and a radon in real estate publication to buyers. Over 4,600 mitigation systems were installed in FY17 and this progress is primarily attributed to mitigations completed during real estate transactions.
- **Nebraska** state law requires sellers of residential property to submit a written disclosure statement to buyers during real estate transactions. The Nebraska Radon Program also partnered with the state Real Estate Commissions to develop a continuing education course on radon for relators.
- Montgomery County, in **Maryland**, enacted a law requiring single-family homes to complete a radon test before initiating real estate transactions beginning on October 1, 2016. Montgomery County is the first county in the United States to require radon testing during real estate transactions.

Continuing education and technical support:

- The **Florida** Department of Health partnered with the Florida Home Builders Association to provide a continuing education course on radon resistant new construction for builders in the state. They also partnered to provide a hands-on demonstration of radon resistant new construction at the Southeast Building Conference, which had 3,500 registered attendees.
- The **Minnesota** Department of Health (MDH) conducted a broad ranging education campaign for residents of the state, with a focus on home buyer and seller education. In FY17, MDH conducted 20 child care classes and 18 general public presentations. MDH also partnered with 116 community agencies and organizations (including local health departments, housing agencies, and non-profits) to distribute 15,100 test kits. Finally, MDH completed a press release and media outreach that included information about radon in real estate that led to 34 news stories on radon.
- The **North Carolina** Department of Health and Human Services worked closely with the NC Real Estate Commission to develop training materials for real estate professionals and created a mandatory radon training course for all relators in the state (approximately 100,000). In addition, state law requires sellers to disclose to potential buyers if the home has been tested and found to have high levels of radon during a real estate transaction.

Adoption of radon-reduction strategies in building codes and construction:

- The **Ohio** Department of Health has provided technical assistance to several local building departments working to include radon resistant new construction in local new residential building construction codes. Several city and county building departments in the greater Columbus areas have adopted radon requirements from the International Residential Code, including Union County, Pickerington City, Dublin City, and Powell City. More than 250 new homes were built radon resistant in these areas during FY17.
- The **New Jersey** uniform construction code requires all new schools and homes located in high radon potential areas of New Jersey to have radon resistant new construction features built into them.
- In **Kansas**, the cities of Topeka, Manhattan, Lawrence, Salina, and Junction City have building codes which require new homes to be built using radon-resistant techniques. In FY17, an estimated 19,172 homes were tested for radon, while 3,306 homes were mitigated, and 519 homes were built with radon-resistant features.
- Seven counties in **Oregon** require radon-resistant new construction in all public buildings, including schools and residences built after April 1, 2013.

Additional State and Tribal Success Stories

This section showcases other exceptional radon risk reduction activities that may not have been explicitly described in Congressional direction and/or in some cases draw on a different funding source.

- The **Michigan** Radon Program has a primary focus on outreach and testing. The program has cultivated two important partnerships with the Michigan Association of Broadcasters (MAB) and local health departments across the state. In 2017, the MAB member television and radio stations broadcasted 53,097 Public Service Announcements about the radon program throughout the state. The radon program also distributed 19,877 test kits along with various other outreach materials to local health departments as resources for residents.
- **Colorado** promotes environmental equity through radon testing and mitigation programs, specifically through a statewide low-income mitigation assistance program. State law allows the Colorado Department of Public Health and Environment to use designated funds to provide low-income households assistance for radon mitigations.
- In **Missouri** radon testing is conducted for all public schools. In 2017, 176 schools were tested. In partnership with the Department of Natural Resources and Agriculture, the Missouri Radon Program received additional grant funding, which will be offered to approximately 10 – 20 elementary schools as compensation for up to \$3,000 in mitigation costs.
- In **Utah** the Department of Environmental Quality works towards improving indoor air quality in tribal communities by overseeing radon testing at the Confederated Tribes of the Goshute Reservation.
- The **Nevada** Radon Education Program (NREP) promotes radon awareness to students, teachers and parents with its annual Nevada Radon Poster Contest. NREP supplies local teachers with educational presentations about radon health risks, how to conduct testing, as well as reinforcing the fact that radon problems can be fixed and even avoided.
- The **Idaho** Radon Program partnered with Project Filter (the state's tobacco prevention and control program) to distribute patient outreach materials that physicians can use during doctor office visits to increase radon awareness. Outreach materials included a talking point guide for physicians and a patient handout, which are designed to encourage conversations about radon between physicians and patients, increase radon awareness, testing and mitigation.

Moving Forward

The responses indicate that states and tribes are making significant progress in addressing the key areas identified in the House Report language. States and tribes will report in September 2019 on activities conducted during FY18 and FY19.