

# **STATE RADON LEGISLATION -- ISSUES AND OPTIONS**

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## **PURPOSE AND ORGANIZATION OF THIS REPORT**

This report contains a series of "issues and options" papers. Organized by topic, these papers are intended for state legislators, program officials, policy makers and regulators who are interested in designing or enhancing radon laws and programs. The growing public awareness of radon will likely bring greater citizen interest in public policy strategies to reduce risk from radon exposure. States will be called on to develop effective, innovative approaches to addressing this indoor health hazard.

This report identifies some of the issues related to radon laws and programs and describes options for addressing them. In most cases, several options are provided for each issue. The report is intended to stimulate discussion and the exchange of ideas. It is not intended to promote legislation, or to suggest that passage of laws is desirable or necessary. Instead, it is offered as a starting point for situations in which legislation is contemplated, and decision-makers need a tool to focus debate.

Generally speaking, no single option will be universally accepted for any issue. Each state is faced with different constraints, strengths and challenges that must be factored into legislative decision-making. Thus, each state must arrive at its own particular formula consistent with the nature of its radon problems, resources and approach to public health protection.

States have been actively proposing, debating and passing radon laws for some time, and the United States Congress is considering legislation that would amend the existing federal radon law. To obtain copies of enacted state radon laws, the federal radon statute, or proposed bills, contact the Environmental Law Institute at (202) 328-5150. To obtain further information about the material presented in this report, contact the Institute or the National Conference of State Legislatures at (303) 830-2200.

## INTRODUCTION TO RADON

Radon is a gas that is produced from the breakdown of uranium, which is present in soil and rock, as well as in water. You cannot see, smell or taste radon, yet it is estimated to be the second leading cause of lung cancer in human beings, behind cigarette smoking. Radon exposure may be associated with 7,000 to 30,000 lung cancer deaths in this country each year. According to a national radon survey, approximately six percent of all homes may have annual average radon levels that are above EPA's action level.

Members of the national and international scientific community including the World Health Organization, the National Academy of Sciences, and the National Council on Radiation Protection and Measurements agree that radon is a human carcinogen. Major health organizations such as the American Lung Association, the American Medical Association, and the National Safety Council as well as the federal Centers for Disease Control also agree that radon poses a serious threat to health and urge citizens to take action to test for radon and to mitigate elevated radon levels. EPA is currently working to refine its estimates on the risks posed by residential radon exposure; the agency has undertaken a project with the National Academy of Sciences to update the existing scientific data and studies.

Radon exposure poses a threat to health when the gas enters buildings through cracks, other openings in the foundation, or in some other manner, and is trapped inside at high concentrations. EPA estimates that six million homes in the United States contain high radon levels. The potential for high indoor radon is greater in areas with certain geological features. Areas known to have the potential for high radon levels are often referred to as "geographic hot spots." Although these geographic hot spots can be targeted for special attention to promote radon awareness and encourage remediation, high radon levels are found in many areas in all states. The presence of a building in a geographic hot spot does not guarantee an elevated radon level; at the same time, the presence of a building in an area of average radon potential does not indicate an acceptable radon level. The only way to know the radon level in a building is to test that building. EPA and the Surgeon General recommend that all homes below the third floor be tested.

There are two general ways to test for radon. Short-term testing involves use of a measurement device that remains in the building for two to ninety days. Long-term tests last for more than ninety days. Because radon levels may vary depending on the season, long-term tests are more likely to indicate yearly average radon levels. When time is limited, e.g., during a real estate transaction, EPA guidance provides for short-term testing which can be used to make reliable mitigation decisions. Regardless of the testing method used, it is essential that the measurement device be placed in an appropriate location and that it be used properly.

There are two categories of radon testing devices. Passive devices are exposed to the air and then sent to a laboratory for analysis. Active devices continuously measure and record radon levels, and require a source of power to operate. While passive devices can be used by individuals, active devices generally require the services of a trained radon professional. Radon testing costs between \$20 and \$350, according to EPA.

If testing reveals elevated radon levels, there are methods available for reducing radon concentrations. Current mitigation techniques, such as pressurizing the building, can usually bring about radon levels that are below EPA's action level. The cost of hiring a radon professional to carry out radon mitigation in a home ranges from \$500 to \$2,500, according to EPA.

This report has been prepared by the Environmental Law Institute, an international, not-for-profit, policy, research and training institution. The report was reviewed by the National Conference of State Legislatures and the United States Environmental Protection Agency. It was also evaluated by the National Conference of State Legislatures' Radon Working Group to assure that questions pertinent to policy options were fully discussed and vetted. The report does not represent the policy of the Environmental Law Institute, the National Conference of State Legislatures, the Environmental Protection Agency, or state environmental, health or other agencies.

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## PROMOTING RADON AWARENESS AND PUBLIC EDUCATION

A key to developing an effective approach to radon risk reduction is public support for radon programs. Radon awareness and risk communication efforts help to educate the public about the threats posed by radon exposure and methods of addressing this threat. A more knowledgeable public can take action to protect their health.

While significant strides have been taken to increase awareness of radon, there are still considerable gaps in public understanding of the problem. A recent survey by the Conference of Radiation Control Program Directors (CRCPD) found that 67% of those surveyed claimed to be aware of radon.<sup>1</sup> However, only 37% were actually "knowledgeable" about radon, and only 9% had tested for radon. Radon risk communication efforts could further educate people about the nature of the risks posed and about radon testing and mitigation. In designing education programs, it is useful to note that while 73% of White persons interviewed nation-wide were aware of radon, these percentages were much lower for Hispanic (27%), Asian/Pacific Islander (47%), African American (47%) and Native American (64%) persons surveyed.

Factors to Consider:

In determining whether to enact legislation to increase public knowledge about radon, state legislators will consider many factors, including the following:

- whether citizens of the state are aware of radon and taking actions to reduce radon risk.
- whether the scope of the radon problem in the state needs further exploration.
- how best to inform other policy makers about radon and methods available to remediate high radon levels.

**ISSUE:** HOW CAN LEGISLATION PROMOTE RADON RISK COMMUNICATION?

### **Option #1: Enact a resolution addressing the problem of radon.**

To indicate general support of radon risk reduction activities, a legislature could pass a non-binding resolution, where such measures are permitted under state law. A resolution could state that the legislature finds radon to be a serious public health threat and that it supports efforts within the state to educate the public and promote radon risk reduction. In the past, the United States Congress has passed resolutions establishing a Radon Action Week. States may wish to pass parallel resolutions to emphasize or acknowledge radon-related activities.

Although a radon resolution would not mandate any particular action on the part of the legislature or state officials, it could give impetus to the efforts of state and local radon agencies, and could help educate members of the legislature. State legislators might consider enacting a radon resolution as the first step in a legislative approach to radon risk reduction.

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<sup>1</sup> CRCPD, Radon Risk Communication and Results Study (March 1993). State data on awareness, testing and mitigation rates are available from state radon programs.

In 1990, the California Senate passed Resolution No. 73, creating Radon Awareness Week. In the text of the resolution, the legislature not only emphasized the importance of public education about radon, but also described radon, stated that it is the second leading cause of lung cancer, and noted that certain areas of the state are likely to have elevated

## **Option #2: Create state radon education projects**

State legislators seeking to increase public awareness and understanding of radon could enact legislation requiring state and local radon agencies to provide radon education materials to the public. General education measures of this sort might be more applicable to states without well-established radon programs.

In addition to establishing a general mandate concerning radon education, legislators could direct state officials to provide certain types of information (e.g., concerning health effects or testing). Legislation could also call for education targeted to certain populations, such as school children, school personnel and administrators, public building owners, or tenants. Radon education legislation could make reference to the considerable body of educational materials that already exists, and call on the state to act as a clearinghouse for coordinating and distributing radon information to the public.

## RADON AND REAL ESTATE TRANSACTIONS

Governmental and non-governmental activities at the federal, state and local levels have created a groundswell of radon awareness among the public. In real estate transactions, especially home purchases and sales, some of that awareness has been, and continues to be, translated into action. In fact, EPA and state radon program officials estimate that a significant amount of radon testing occurs, and will continue to occur, during home purchase and sale transactions. Recognizing this important trend, EPA has recently published the Home Buyer's and Seller's Guide to Radon, which assists sellers, buyers and real estate professionals in addressing radon during real estate transactions. Another EPA publication, the Consumer's Guide to Radon Reduction, explains how to reduce high radon levels if testing uncovers a problem. Also, some states, counties and municipalities have published radon booklets or brochures.

State legislation could help ensure consistency and promote even greater radon testing and mitigation by enacting laws calling for disclosure of radon information, radon testing and/or radon mitigation.

Factors to Consider:

In determining how to promote timely and effective radon testing and mitigation in the home purchase and sale transaction, state legislators will consider many factors, including the following:

- whether to take an informational approach, a regulatory approach, or adopt a combination of both approaches.
- whether to enact statewide disclosure, testing or mitigation requirements, or only establish these requirements in high radon potential areas (geographic "hot spots").
- if testing is required, how legislation should address the issue of test device interference (tampering with devices that leads to inaccurate results).
- how to provide for the reporting of radon test results to the state, for purposes of data collection.
- how to protect the confidentiality of the individuals who have tested and reported, while preserving the accessibility of the data for state, federal and private research and analysis (if such a reporting procedure is adopted).

**ISSUE:** WHAT OPTIONS ARE AVAILABLE TO PROMOTE RADON DISCLOSURE, TESTING AND MITIGATION IN THE PURCHASE AND SALE OF AN EXISTING HOME?

**Option #1: Encourage voluntary disclosure.**

The legislature could include language in its radon laws or its consumer protection laws encouraging home owners who have tested to pass along their test results to potential buyers. The language could appear in the legislative findings or purposes section of the law, or as a remark in its legislative history.

**Option #2: Require general disclosure.**

The legislation could require that the seller provide the buyer with a general disclosure about radon hazards prior to the execution of a contract for purchase and sale of a home. The term "general disclosure"

**Rhode Island** is one of a number of states that have adopted a radon disclosure law. Under this law, every contract for the purchase and sale of residential real estate located in Rhode Island must contain the following general statement:

Radon has been determined to exist in the state of Rhode Island. Testing for the presence of radon in residential real estate prior to purchase is advisable.

means that information is provided about the hazards associated with radon exposure generally, but not about the levels in a particular home. For example, the disclosure could state:

Radon has been identified as a problem in this state. It is a colorless, odorless, tasteless gas that can seep into homes through cracks and openings in a home's foundation. Inhalation of radon gas is associated with increased risk of lung cancer; the risk is especially high if you are exposed to high radon levels and you smoke.

The Surgeon General of the United States, the United States Environmental Protection Agency, and the [name of state agency] recommend that you test your home for radon. If high radon levels are found, your home should be fixed. For more information about radon testing and mitigation, call the state radon hotline at 800-XXX-XXXX.

In order to prevent such a warning from becoming obscured during the real estate transaction, the radon disclosure could be printed as a separate document, and the seller could be required to obtain the buyer's signature to indicate receipt of the information.

The legislature could also require that a booklet or other printed material about radon be distributed during the home purchase and sale transaction, in addition to or in lieu of this language. Such material might include information about radon testing and mitigation techniques, as well as advice to consumers on how to select a radon professional. EPA and some states have already published printed material that could be used for this purpose.

**Option #3: Require specific disclosure and/or testing.**

The legislature could require that specific information about a home's radon level be provided to the buyer by the seller. The term "specific disclosure" means that the radon information relates directly to the home in question (e.g., a radon test result for the home). This could be done in a number of ways, which are described below.

Sub-option a: Require testing and specific disclosure of test results. The state legislature could require home owners to test their homes for radon, and to provide the results of the test to prospective buyers. Buyers will then be able to make an informed choice about the potential health effects of the radon levels to which they could be exposed. This sub-option may be preferred because it gives buyers direct information — a radon level in the home — about the property they are interested in purchasing. Using EPA or state generated risk data, buyers can make an informed decision about the radon risk the home presents.

Where a home has already been mitigated, home owners could be required to provide information on existing mitigation systems to prospective buyers.

Any of these sub-options could be targeted to areas in the state that are geographic hot spots, rather than applied generally throughout the state. Additionally, a state may elect to combine options by implementing a "mandatory testing and disclosure" option in geographic hot spots, and an "information only" approach elsewhere. On the other hand, state-wide requirements may help to better define hot spots within the state.

Sub-option b: Require general disclosure of radon information and offer the prospective buyer an opportunity to test. Pursuant to this sub-option, the state legislature would require sellers to give prospective buyers general information about radon (e.g., EPA's Home Buyer's and Seller's Guide to Radon) and an opportunity to test the home before the purchase is completed. This option will educate buyers about radon problems generally, but it does not convey the specific test results of sub-option a, and thus may be less effective in promoting testing and mitigation.

Sub-option c: Require disclosure of radon test results only if a test has been taken. Legislation could mandate that radon test results be given to prospective buyers, but only if radon levels are already known. This sub-option, however, may discourage, not encourage, testing because sellers are only required to disclose information if they have tested.

**Option #4: Require testing and mitigation.**

Under this option, the state legislature would pass a law requiring home sellers to test for radon and mitigate high levels<sup>2</sup> before the home is sold. The seller could be required to furnish the buyer with proof of mitigation or of acceptable radon test results. This option has the advantage of addressing the radon problem prior to purchase and sale. The initial cost of the testing and mitigation would fall on the seller, who might be able to pass some or all of it along to the buyer by adjusting the price of the home.

**Option #5: Require general or specific disclosure by professionals involved in the home purchase and sale transaction.**

Pursuant to this option, the state could adopt legislation that requires real estate professionals<sup>3</sup> to provide radon information to prospective buyers. The legislation could require the disclosure of general information about radon (e.g., EPA's Home Buyer's and Seller's Guide to Radon) or of specific radon test results from the home that prospective buyers are considering. If radon information requirements are triggered early in the transaction, then it is possible for the buyer and seller to adequately address any radon problem that is discovered.

A state legislature has many avenues for implementing this option. For example, it could pass a law mandating that licensed real estate professionals, as a condition of licensure and in order to conduct business in the state, be educated about radon issues and provide buyers with general information or specific radon test results. Radon legislation could also provide that real estate agents are agents of the seller, and are

**In conjunction with any options that require radon testing and disclosure,** the state could enact legislation mandating that all radon test results be reported to the state agency that administers the radon program. Such results could be used to identify areas where radon levels are high, areas where testing is common, and other demographic factors. If such a reporting procedure is adopted, its implementing regulations (or the legislation) may contain measures to protect the confidentiality of the individuals who have tested and reported, while preserving the accessibility of the data for state, federal and private research and analysis.

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<sup>2</sup> EPA has adopted 4 picoCuries per liter (pCi/L) as the national radon action level — i.e., the level at which the Agency recommends taking action to reduce radon. EPA has also pointed out in its Citizen's Guide to Radon that radon levels in many homes can be reduced to 2 pCi/L. As used in this report, the term "high radon level" means a radon level that is at or above EPA's action level.

<sup>3</sup> The term "real estate professionals" includes, but is not limited to, real estate agents, mortgage bankers, home inspectors and real estate appraisers.

required to comply with all disclosure requirements applicable to sellers. Legislators could enact legislation requiring that licensed home inspectors give home buyers general radon information or provide a radon test kit. Real estate appraisers, as a condition of licensure, could be required to find out about radon levels and report such information in their appraisal reports.

**ISSUE:** IN THE PURCHASE AND SALE OF A NEW RESIDENCE, WHAT OPTIONS ARE AVAILABLE TO PROMOTE RADON TESTING AND DISCLOSURE?

New homes can be built with radon-resistant features that minimize radon entry, and allow easier fixing of radon problems that could occur later. Radon-resistant new construction, and radon disclosure, testing and mitigation following new construction, are discussed in Section III of this report. Please consult Section III for an explanation of the legislative options in this area.

## NEW CONSTRUCTION STANDARDS

A legislature that is concerned with controlling the risk of radon exposure could endorse radon-resistant new construction by encouraging or requiring the adoption of appropriate local building codes, or by adopting statewide building codes for radon-resistant new construction. Radon-resistant features are cost-effective and energy efficient and are commonly used throughout the building industry for other reasons, such as moisture control.

Currently, two approaches exist for controlling radon in new houses: passive stack and active stack. These approaches are described in two documents: the American Society of Testing and Materials' Standard Guide #1645-92, and EPA's proposed Model Standards and Techniques for Control of Radon in New Buildings.

Factors to consider:

In considering radon-resistant new construction, legislators may take into account:

- whether to incorporate requirements for active or passive systems.
- whether to require building codes statewide or only in high radon potential areas.
- whether to adopt codes that require builders to follow prescribed procedures, or that require builders to put in the system and ensure that radon levels are lowered to a given standard.
- whether to require distribution of radon information in connection with the purchase of a new home.
- when a radon test should be taken, given the technical issues related to new home construction, (e.g., settling of homes and drying of foundation materials).
- how to address the issue of certification or licensure if a state requires that a new home be tested for radon.
- how to address renovations, repairs and additions to existing homes.

**ISSUE:** WHAT OPTIONS ARE AVAILABLE TO ADDRESS INITIAL CONSTRUCTION?

**Option #1: Encourage adoption of codes.**

States could adopt legislation or a resolution recognizing radon as a problem and encouraging radon-resistant new construction. Such a measure could encourage builders to follow "model" construction standards, such as those drafted by the EPA or a national consensus organization such as the American Society for Testing and Materials (ASTM). The measure could also encourage the adoption of local building codes incorporating radon-resistant construction.

**Option #2: Establish mandatory codes.**

In states with mandatory state-wide building codes, legislation could amend existing codes to require radon-resistant construction. The legislature could adopt existing model standards<sup>4</sup> or could charge the state radon program with drafting a unique code amendment on radon-resistant construction.

WHAT ARE RADON-RESISTANT CONSTRUCTION STANDARDS? Under the passive stack approach, radon is drawn from beneath the slab through a PVC pipe, and vented into the air above the roof, where it dissipates. A passive system relies on natural air currents to draw the radon into the pipe. If necessary to further reduce radon levels, the passive system can be modified to an active system, through the addition of a fan and warning device. The fan serves to draw radon from beneath the foundation through the stack and out the roof.

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<sup>4</sup> For example, the legislature could amend the statewide code using EPA's Proposed Standard or ASTM's Guide as a model. Or, the legislature could adopt a model code from a national model code organization (e.g., Building Officials and Code Administrators International (BOCA), Council of American Building Officials (CABO), International Conference of Building Officials (ICBO), Southern Building Code Congress International (SBCCI)). Generally, it takes several years for such organizations to incorporate radon-resistant techniques into a model code.

In a state with geographic hot spots, the legislature could consider mandating different requirements for radon-resistant construction depending upon the severity of the radon problem.

**ISSUE:** WHAT OPTIONS ARE AVAILABLE TO ENSURE LOW RADON LEVELS IN NEW HOMES?<sup>5</sup>

**Option #1: Require that radon information is provided.**

Legislators could require that builders, real estate agents, building inspectors and/or other professionals involved in the purchase and sale of new homes provide radon testing devices, testing instructions, and/or information packages to the buyer upon the final inspection and before obtaining the certificate of occupancy. This might include EPA documents such as the Citizen's Guide or the Home Buyers and Sellers Guide, and information regarding the operation, maintenance and design of any radon-resistant features in the home (if appropriate).

**Option #2: Encourage testing of new homes.**

The legislature could encourage builders, real estate agents, building inspectors and/or other professionals involved in the purchase and sale of new homes to test, or have tested, new buildings and provide the test results to the home buyers before the final inspection of their residence. The legislature could also encourage professionals to give test results to building inspectors at closing.

**Option #3: Require testing of new homes.**

If legislation mandates that new homes be tested, builders or other professionals could be required to arrange for radon testing during the final inspection. Alternatively, such a law might require that the building inspector arrange for testing and that the state pay for the test and its analysis. If such legislation is contemplated, it could include provisions for a service agreement for the home buyer so that she has recourse to mitigate a radon problem if one is discovered. Alternatively, legislation could require mitigation if high radon levels are uncovered.

The state of **Washington** has incorporated radon-resistant features into its building code. The Washington State Ventilation and Indoor Air Quality Code requires installation of passive stack systems in all residential buildings located in counties designated as high radon potential areas.

Washington law also requires that at the time of final inspection of new residential buildings, building inspectors deliver a radon testing device to each new residence and ground floor apartment.

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<sup>5</sup> As noted earlier, EPA has adopted 4 pCi/L as its "action level," and has pointed out in its Citizen's Guide to Radon that levels in many homes can be reduced to 2 pCi/L.



## RADON AND RENTAL HOUSING

Public education initiatives directed at tenants could result in increased radon testing in rental housing. Although many rental housing units are located in buildings that are greater than three stories, most residential radon mitigation techniques are believed to be applicable to large buildings.

Because tenants do not own the property in which they live, they may lack the legal authority that home owners have to undertake radon mitigation. If this barrier were removed, many tenants would face another serious obstacle to radon reduction — the cost of mitigation services. While less expensive and less complicated than other forms of environmental cleanup, radon mitigation may not be affordable to low income tenants. In a recent survey of housing trends, the United States Department of Commerce Census Bureau found that median income was 83% higher for home owners than for renters — \$33,300 for owners compared to \$18,100 for renters. The way in which a radon program addresses the cost of mitigation may be one of the most significant factors in the success of the program's effort to reduce radon in rental housing.<sup>6</sup>

State legislators may choose to require that landlords test the properties they lease for radon and/or that they reduce high radon levels. Even if landlords were made legally responsible for reducing high radon levels, tenants might be vulnerable to rent increases imposed to cover mitigation costs. This may be particularly problematic in areas where affordable housing is scarce. For this reason, state legislatures may wish to develop programs to help finance radon reduction in low income rental housing.

Factors to Consider:

In addressing radon in the unique context of rental housing, legislators may wish to consider the following factors:

- whether requirements for radon disclosure and/or testing will lead to radon mitigation, given the tenant's legal status and given the financial circumstances of many tenants.
- the extent to which financial assistance might be necessary to ensure that low income tenants are not exposed to high radon levels or large rent increases.
- whether legal requirements for mitigation are needed and how such requirements can be combined with financial assistance.
- how radon mitigation requirements can be integrated into existing state law relating to rental housing.
- how outreach and public education targeted to landlords and tenants can be used to enhance radon risk reduction efforts in rental housing.

**Connecticut** has developed a grant program to fund radon mitigation. The program will seek to identify financially-disadvantaged renters or home owners whose homes have high radon levels. For qualified individuals, grants will be provided to fund demonstration mitigation projects. Mitigation services are to be provided by contractors who have participated in EPA's Radon Contractor Proficiency program and who are listed with the state. The program is to be managed by the state housing agency, with funding from the state health department, which administers the radon program.

**ISSUE:** WHAT LEGISLATIVE INITIATIVES CAN PROVIDE FINANCIAL RESOURCES FOR RADON-RELATED SERVICES IN RENTAL HOUSING?

The following options for helping to finance radon risk reduction in rental housing might also be adopted to assist low income homeowners whose homes contain high radon levels.

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<sup>6</sup> This section discusses only privately-owned, non-subsidized housing. Efforts to address radon mitigation in federally-assisted housing would focus on changing federal legislative and regulatory requirements.

**Option #1: Low interest loans or loan guarantees.**

Low interest loans or loan guarantees could be provided to owners of rental housing for the purpose of radon testing and mitigation. Such a program could be set up through the state housing finance agency, and could be administered by that agency alone, or jointly with the agency that administers the radon program.

A loan or loan guarantee program would generally be targeted to owners of low income rental housing. The program might therefore adopt eligibility criteria based on factors such as tenants' income or affordability of rents. For example, the state might determine interest rates based on the tenant incomes in the building; the lower the incomes, the lower the interest rate and greater the subsidy to owners of affordable housing. Additionally, the program could help to preserve the affordability of the housing by restricting rent increases that are based solely on the enhanced value of the rental property resulting from radon-related services.

The loan program should also set out the circumstances under which loans will be made — e.g., only where radon levels are demonstrated to be above the state action level and only where a state-approved or EPA-listed radon professional performs the mitigation services.

**Option #2: Grants.**

Some owners of low income rental housing will be unable to afford loans for radon mitigation, even if interest rates are favorable. A grant program could be created by the legislature to provide financial assistance for radon testing and mitigation in rental housing. Grants typically would be targeted to providers of low income housing, and would be utilized for the costs associated with radon testing and mitigation. A grant program could be administered through the radon agency directly, in cooperation with the state housing finance agency, or in cooperation with another public or private agency designated by the legislature or by the radon program. As with other forms of assistance, a grant program could include restrictions on raising rent levels for a certain period of time following the grant.

**Option #3: Income tax credit.**

One way of encouraging radon testing and mitigation is by providing financial assistance in the form of a tax credit. For example, legislation could allow rental housing owners who test or mitigate their properties an income tax credit for the dollar amount paid for testing and/or mitigation services. Under this approach, the state would be providing an indirect source of funding from tax revenues for a radon program's efforts to promote radon reduction.

Such legislation would specify the circumstances under which the credit is allowed. For example, the program could be limited to low income rental housing, or could be applicable to all rental property. The law might provide a tax credit for radon reduction expenses only where radon levels were documented as exceeding the state action level. The law might also require that in order to obtain the tax credit, a household must submit proof that the testing or mitigation was performed by a radon professional that has been certified and/or licensed by the state or listed by EPA. A tax credit program could allow the credit for only a percentage of the actual radon reduction costs. Similarly, the credit could be limited to a maximum dollar amount per building.

**Option #4: In-kind assistance.**

A state radon program could provide in-kind assistance to owners of rental housing for either testing or mitigation. One of the most common forms of in-kind assistance is the distribution of free radon testing kits. An in-kind assistance program could also be provided for radon mitigation. A state program could, for example, contract directly with radon professionals to perform mitigation in rental housing. Such a program would generally be limited to low income rental units. The state program might coordinate its efforts to provide radon mitigation services with local Weatherization

Assistance Program offices, which provide in-kind weatherization services for low income families. Weatherization programs generally receive both federal and state funding, and are administered through non-profit community organizations.

**Option #5: Provision of services by radon professionals.**

Radon professionals are in a position to make a significant contribution to reducing the problem of radon in low income rental housing. One way of involving this sector is to create a program in which local radon contractors provide a certain amount of free testing and mitigation services to low income households. State legislatures might consider requiring that radon professionals provide a minimum level of testing and mitigation services to low income households at no cost (or at nominal cost). This could be linked to certification or licensing and might be a more direct way to require contribution by radon professionals than licensing fees.

Instead of a mandatory program, state legislatures could authorize or require the creation of a voluntary "pro bono" program for radon professionals. The local health, housing, or other agency with authority for radon issues might be charged with convening a working group consisting of members of non-profit community organizations and radon professionals to design a voluntary program. The legislature could direct the program to establish: a recommended level of contribution (a certain number of mitigation jobs or a certain number of hours per year); methods for enlisting the participation of all area radon professionals; mechanisms for matching households with professional participants; and ways of keeping track of and publicly recognizing the participants' contributions.

The legislature might also adopt a tax credit for radon professionals who participate in such a "pro bono" program, or who provide free or reduced-cost services to low-income households.

Outreach can be important to ensuring the success of radon programs designed to promote radon risk reduction activities in rental housing. In this regard, it is useful to consider the results of a recent study, which showed that only 56% of renters surveyed nationwide were aware of radon as compared to 71% of home owners. CRCPD, Radon Risk Communication & Results Study (March 1993).

**Option #6: Outreach.**

Any of these options can be combined with an outreach component to educate rental housing owners and residents about radon, to encourage them to reduce radon levels, and to take advantage of programs that are available to provide assistance. Legislation could include a general provision for such a program and leave the method of implementation to agency discretion. Legislation might also provide for education programs targeted to tenants.

**ISSUE: HOW CAN LEGAL REQUIREMENTS PROMOTE RADON RISK REDUCTION ACTIVITIES IN ALL EXISTING RENTAL HOUSING?**

**Option #1: Require general or specific radon disclosure.**

Legislation could require that every rental agreement include general information on radon. Such disclosure could be similar to the general warning statement described in Section II, "Radon and Real Estate Transactions." Owners of rental housing could also be required to provide tenants with radon information such as EPA's Citizen's Guide to Radon.

Alternatively, legislators could require landlords to provide tenants with specific test results for their rental unit. As discussed above under "Radon and Real Estate Transactions," this requirement could be made contingent on the landlord having knowledge of the radon level, or could be required in all cases. Legislators may choose to implement such a requirement only in areas of high radon potential.

A central issue in establishing disclosure requirements is whether the provision is likely to lead to mitigation, where necessary. For reasons noted in the introduction to this section, the unique relationship between landlords and tenants warrants careful consideration of reliance on disclosure requirements alone.

**Option #2: Require radon mitigation.**

Prohibition against high radon levels in all rental housing may be useful to ensure that landlords provide housing that does not threaten tenants' health. Even if governmental assistance for mitigation is made available, owners of rental housing could not be required to seek out that assistance. A mandatory duty to mitigate would likely be most effective in reducing high radon levels if combined with programs that provided financial assistance to owners, particularly owners of low income housing.

There are various ways to structure legal requirements for radon mitigation in rental housing. These include:

Sub-option a: Housing or health codes. One way to require radon mitigation by rental housing owners is to establish compliance with radon action levels as a requirement of state and local housing codes. Many states and municipalities have housing codes that set out minimum living conditions for rental housing units. These codes are designed to protect the basic health and safety of tenants, and usually provide for enforcement by public officials. Because radon is naturally occurring, it differs from typical housing code violations such as faulty wiring or lack of heat and plumbing. Nonetheless, as a condition that threatens the health of occupants, radon might be an appropriate item for these codes.

By including radon in housing codes, compliance with radon action levels might also be brought within the scope of any existing implied warranty of habitability. An implied warranty of habitability creates a legal implication that a rental unit is fit for habitation, free of latent defects, and will be maintained in a habitable condition by the owner. Most states that recognize a warranty of habitability have interpreted the warranty as including compliance with housing code provisions designed to protect tenant health and safety. Thus, requiring compliance with radon action levels in a housing code may create a duty to mitigate under the warranty of habitability and trigger tenant remedies for failure to do so.<sup>7</sup>

Sub-option b: Statute creating a duty to mitigate high radon levels. State legislatures could also establish

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<sup>7</sup> Rent escrow legal actions are one such remedy, whereby a tenant pays his/her rent to an escrow account until the owner complies with any requirements to repair defective conditions. Rent abatement — the reduction of a tenant's rent by a court — is also a common tenant remedy for violations of an owner's duty to repair.

a statutory duty on the part of rental housing owners to mitigate high radon levels. This could be accomplished by enacting radon-specific legislation, or by amending a general duty-to-repair statute to explicitly include high radon levels. Such legislation could help clarify the landlord's duty of care and thus, the landlord's potential liability for radon problems.

## RADON TESTING AND MITIGATION SERVICES

Reliable and high-quality radon-related services, including testing and mitigation, are an integral part of a successful radon program. Home owners and other persons who wish to test for radon and mitigate high levels expect, and are entitled to, protection from sham and fraud in the provision of radon services. State legislation could protect the consumer and advance the professionalism of radon-related industries by enacting laws requiring licensure and/or certification for radon service providers.

WHAT IS CERTIFICATION AND LICENSING? Certification and/or licensure of testers and mitigators includes the approval of testing and mitigation services, testing devices, analytical services and mitigation techniques. The exact definition of these terms varies from state to state, so the extent to which radon-related services and devices are subject to certification or licensure should be decided on a case-by-case basis.

### Factors to Consider:

Legislators may decide that a more or less extensive certification/licensure program is appropriate to address the particular circumstances in their state. A range of options for creating such programs is presented below. In evaluating these options, legislators may consider whether it is appropriate to provide reciprocal approval to individuals or firms approved in another state. Legislators may also want to consider whether their program should include some or all of the following requirements:

- a quality assurance plan for each radon company;
- background, education and/or experience requirements for radon professionals;
- training and/or an examination;
- office or site audits by the state radon agency; or
- licensure/certification fees.

**ISSUE:** HOW CAN A RADON PROGRAM ENSURE THAT INDIVIDUALS ARE PROPERLY QUALIFIED TO PROVIDE RADON-RELATED PRODUCTS AND CARRY OUT RADON SERVICES?

### **Option #1: Rely on EPA's voluntary radon proficiency programs.**

In lieu of enacting its own legislation with radon proficiency requirements, a state could rely on the voluntary participation of radon professionals in EPA's voluntary radon proficiency programs. The Radon Measurement Proficiency (RMP) Program requires participants to demonstrate their ability to make accurate measurements and follow quality assurance and EPA measurement guidelines, in order to provide reliable measurement services to the public. The Radon Contractor Proficiency (RCP) Program trains radon contractors to evaluate radon problems, and to design and install an effective radon mitigation system.

### **Option #2: Create a voluntary radon proficiency program.**

The state legislature could enact legislation establishing a voluntary program, similar to EPA's current RMP and RCP programs, but tailored to specific state needs. Radon businesses that join these programs could be granted the privilege of using the term "State radon qualified (or approved)" in advertising their services and products, and could become part of a list kept by the state radon program that would be given to persons interested in hiring radon professionals. The program could include features to enhance the quality of services, such as training (in class and on the job), yearly continuing educational programs and conferences, workshops or bulletins.

**Option #3: Require radon testers and mitigators to participate in EPA's RMP and/or RCP programs.**

Under this option, the state could pass legislation that requires testers and mitigators to participate in EPA's RMP and/or RCP programs in order to conduct business in the state. These radon businesses could be listed by the state radon program, and the list could be provided to interested members of the public. Firms that conduct radon businesses in the state without participating in these programs would be violating state laws. In developing this law, legislators may consider whether to extend state approval to firms that are located in other states and that have participated in EPA's voluntary programs, or that are licensed/certified by another state.

**Option #4: Create a mandatory state radon proficiency program.**

In addition to or in lieu of requiring participation in EPA's programs, the state legislature could enact a law that requires all providers of radon products and services doing business in the state to obtain a state-granted license and/or certificate. States might require a licensure or certification fee, which could be a one-time assessment, a recurring charge or both. Education requirements for radon professionals could also be made a part of the law. Legislators may consider extending state approval to firms that are located in other states and have obtained comparable approval there.

Such a law would likely prohibit non-certified/licensed businesses from operating in the state, and could include enforcement authorities and penalties to encourage compliance with its terms. Alternatively, this type of measure might be implemented by adding the prohibition to the state's existing consumer protection law.

**Iowa** requires that radon measurement specialists successfully complete EPA's RMP program, and that radon mitigation contractors complete EPA's RCP program. State laws and regulations establish additional criteria for state accreditation, including minimum age, work and experience requirements. Iowa performs on-site audits of measurement laboratories, operators and mitigation contractors. Iowa also imposes fees for both initial application and annual accreditation.

## RADON AND SCHOOLS

Children spend extended periods of time indoors in public school buildings, as do teachers and other school employees. Accordingly, it is important to provide a healthy indoor environment. A recent national survey uncovered serious radon problems in schools across the country; nearly 1 in 5 public schools had at least one room with radon screening levels above 4 pCi/L. Radon in schools has also been the subject of considerable media attention.

Testing for radon and mitigating high levels are important components in assuring healthy school buildings. State legislatures may wish to prioritize which schools will be tested and/or mitigated first, based on available information about radon hazards and potential exposure. Also, within each state a combination of strategies may be necessary to address radon in schools.

EPA has published a guidance document on radon testing in schools, titled Radon Measurements in Schools; Revised Edition. EPA is currently revising its Radon Reduction Techniques in Schools; Interim Technical Guidance. The Agency estimates that a typical school costs about \$1,000 to test and between \$3,000 and \$30,000 to mitigate.

Factors to Consider:

In considering legislative approaches to the problem of radon in schools, legislators may want to ascertain first the information available concerning the extent of the problem in their state. In addition to such information, legislators may take into account a number of factors, including:

- how the state can make information about radon and radon testing available to students, school personnel and administrators.
- whether the state should require disclosure, testing or mitigation, or a combination of all of these approaches.
- the time framework for testing and/or mitigating schools with high radon levels.
- whether the state should establish requirements for schools throughout the state, or only for schools in geographic hot spots.
- how the state will provide for notification of radon test results to affected parties.
- whether the state will establish funding mechanisms to help finance mitigation in schools. (See "Funding for a Radon Program," below.)

**ISSUE:** HOW CAN A RADON PROGRAM ENSURE THAT RADON IN SCHOOLS IS PROPERLY ADDRESSED?

**Option #1: Initiate a state-wide study and survey of schools.**

The state legislature could pass a law requiring a state agency or specially created commission to prepare a state study that includes some or all of the following:

- a cataloging of all schools within the state;
- a characterization of the schools with regard to their radon and health hazard potential (e.g., the amount of time children and school employees use the buildings; whether the schools are located in geographic hot spots; the physical attributes of the schools (i.e., number of stories, layout of rooms, amount of space utilized below-ground or at ground); available techniques for testing (and mitigation, if necessary), and
- a suggested timetable for selecting a specific subset of schools for testing and mitigation, and the costs associated with testing or mitigation.

This study could be undertaken at the same time as studies of other indoor environmental problems, such as lead or carbon monoxide.



**Option #2: Require testing and specific disclosure.**

The legislature could decide to test some or all schools. For example, the legislature could select a representative set of schools to sample, or could test only schools in high radon potential areas. Alternatively, the legislation could require that certain schools be tested initially, and that all other schools in the state meet specified timetables for testing.

**Colorado** is one state that has established requirements for testing in schools. State law requires radon testing of all schools. Test results must be kept on file at the school, and must be

In the interest of full disclosure and to publicize the radon problem, the state could require that all radon test results from schools be disclosed to children, their parents, school personnel and members of the public. The disclosure could be provided in a number of ways, such as:

- a general disclosure notice in a newspaper or other publication;
- a series of public service announcements in various media;
- disclosure to other groups or organizations such as the local Parent-Teacher Association (PTA);
- posting in schools; or
- mailings to families of school children.

**Option #3: Require testing and mitigating in some or all schools.**

In addition to testing some or all schools, the legislature could decide to require mitigation of schools with high levels. Legislation could establish a time table for mitigation, or could direct the relevant state agency to develop such a schedule.

## RADON PROGRAM ENFORCEMENT

Many approaches to achieving low radon levels will incorporate requirements established by statute and regulation. A credible enforcement component will help ensure compliance with these requirements.

In part, the effectiveness of an enforcement program depends on the enforceability of the legal requirements themselves — i.e., the extent to which the substantive requirements are clear, consistent and technically feasible. It also depends on the resources available to the regulatory agency.<sup>8</sup>

This paper addresses a fundamental component of every effective enforcement scheme - the enforcement authority provided by legislation. Statutory provisions that establish this authority seek to deter violations by creating, on the part of regulated entities, a reasonable expectation that timely compliance will be less detrimental to them than noncompliance.

### Factors to Consider:

State legislators may consider a range of administrative and judicial tools to enforce legislative or regulatory requirements relating to radon. In designing appropriate enforcement provisions, specific factors to take into account include:

- whether the state agency that contains the radon program should have authority to take administrative action to enforce the radon law directly, without filing a legal claim in court.
- whether the amount and nature of any monetary penalties will create an appropriate financial disincentive to discourage noncompliance.
- whether a violation is serious enough to warrant imposing criminal sanctions.
- whether the enforcement scheme can be strengthened by providing citizens with a right to bring legal action to enforce radon laws.

### **ISSUE:** WHAT ADMINISTRATIVE ENFORCEMENT TOOLS CAN BE USED BY A STATE RADON PROGRAM TO ENSURE COMPLIANCE WITH STATUTORY AND REGULATORY REQUIREMENTS?

**Iowa** law authorizes the state agency to enforce its radon certification law by conducting "spot checks" of the radon levels of premises in which state-accredited professionals have provided services. The agency is further authorized to take action with respect to the person's continued certification or to require that the certified professional take specified actions.

#### **Option #1: Administrative orders.**

Administrative orders are written orders issued by the state agency to a regulated entity, directing the regulated party to take a particular action or to refrain from taking a particular action. Administrative orders provide the opportunity for the agency to enforce program requirements without having to bring suit in court. For example, the authority to issue administrative orders allows an agency to direct that a radon professional cease providing radon services until she obtains any required licensing or certification. An administrative order could also be used to direct a party to undertake any testing or mitigation required by statute or regulation.

#### **Option #2: Administrative penalties.**

Administrative penalties are penalties that can be imposed by a state agency without going to court against a party who is in violation of

regulatory or statutory requirements.

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<sup>8</sup> Funding is addressed below under "Funding for a Radon Program."

Although administrative penalty orders are a subset of administrative orders generally, the authority to issue an administrative penalty order is frequently stated separately in the regulatory scheme.

Statutes generally set out minimum and maximum penalty amounts, and often provide that each day of an ongoing violation is a separate offense to which a penalty attaches. A radon statute could also provide that multiple violations (e.g., violations with respect to multiple buildings or multiple tests) result in cumulative penalties.

**Option #3: License/certification revocation or suspension orders.**

A state radon program might be given the authority to issue an order revoking or suspending the license or certification of a radon professional who has failed to comply with regulatory requirements. Similarly, the agency could be empowered to revoke or suspend any state approval given to a radon measurement device if the agency determines that fraud occurred in connection with the initial approval of the device, or that the device has subsequently proved unsuitable. Legislation utilizing this enforcement tool would need to state clearly and in detail the circumstances under which it may be used.

**Option #4: Agency remedial actions.**

A radon statute might include a provision that allows the state agency to take direct remedial action if the alleged violator fails to take corrective action. For example, if the owner of a building failed to undertake radon mitigation as required by the statute and as ordered by the state, the state program would be authorized to procure the mitigation services directly. The agency would then be authorized to recover its costs from the violator, either through an administrative order or through civil judicial action (see below).

**Option #5: Administrative hearings.**

Administrative hearings provide an opportunity for an alleged violator to formally challenge the administrative order, penalty or other sanction imposed by the state agency. For example, if the state agency issues a penalty order against a radon professional for a violation of a licensing requirement, that individual can obtain a hearing at the agency to challenge the decision. This type of enforcement provision creates the opportunity to resolve any dispute between the two parties without the need to resort to court action.

Such a statute could require the regulatory agency to specify the procedures that govern such hearings, in accordance with the administrative procedures generally followed by agencies of the state and constitutional requirements imposed by the United States Constitution and the state constitution. The legislation itself would spell out the circumstances pursuant to which an alleged violator is required to avail herself of this administrative remedy before seeking judicial review of an agency order.

**ISSUE: WHAT JUDICIAL ENFORCEMENT TOOLS ARE AVAILABLE TO A STATE RADON PROGRAM TO ENSURE COMPLIANCE WITH STATUTORY AND REGULATORY REQUIREMENTS?**

**Option #1: Civil judicial actions.**

Most enforcement schemes authorize the state regulatory agency to file a civil legal action in court to compel compliance with statutory or regulatory requirements. Judicial actions are often brought to enforce administrative orders issued by the agency. Radon legislation could also allow the state to bring legal action to enforce regulatory requirements, even if it has not first issued an administrative order.

The principal remedies that are sought through civil legal action are:

**Rhode Island** law provides for fines for violations of real estate disclosure requirements. Failure to include the prescribed radon disclosure statement in a real estate contract subjects the seller and his agent to a fine of \$100 per violation.

- Civil Penalties — an agency can be empowered to request enforcement of its administrative penalty order where an individual denies wrongdoing or otherwise fails to comply with an agency order, or to seek a judicial penalty order even if no administrative enforcement order was issued first. A provision calling for multiple (e.g., treble) damages for violations that are wilful or knowing, or that are deemed particularly egregious by the legislature could be made part of the civil penalty enforcement scheme. In general, legislation would need to define clearly the circumstances in which penalties apply.
- Injunction — an agency can be empowered to request that the court order a party to cease a particular action, or to take an action that will bring about compliance. In cases where noncompliance creates an emergency situation — e.g., threatens public health or welfare — a "preliminary injunction" or "temporary restraining order" can be issued on short notice. Such authority might be extended, for example, to circumstances where radon testers and mitigators are engaged in ongoing fraudulent practices.

In addition, in the event that an agency has taken direct action to remedy a violation of the law, legislation can empower the agency to seek recovery of its costs from the violator and can identify which costs are subject to recovery. A defendant who fails to comply with an order issued by the court is subject to contempt sanctions, which may include a fine or imprisonment.

**Option #2: Criminal judicial actions.**

Legislation that includes criminal penalties for violations of statutory or regulatory requirements generally authorizes an agency to initiate a criminal case in court against a violator. A statute can specifically include criminal responsibility for corporate officers in appropriate circumstances. Criminal sanctions generally apply only to knowing, wilful and serious (or repeated) violations.

Criminal judicial enforcement creates a strong incentive for compliance, in light of the stigma attached to criminal conviction and criminal sanctions. The principal remedies available are:

- Criminal Penalties — the statute usually specifies the maximum and minimum penalties a court may impose for criminal violations. These amounts are generally higher than fines for civil violations. The court has discretion in arriving at the actual penalty amount.

- Imprisonment — the statute also states the maximum and minimum term of imprisonment for each criminal violation; the court determines the actual sentence to be imposed based on the particular facts of the case.

**ISSUE: HOW COULD A RADON PROGRAM PROVIDE CITIZENS A ROLE IN ENFORCING STATUTORY AND REGULATORY REQUIREMENTS?**

**Option #1: Citizen complaints.**

Citizen complaints can play an important role in bringing violations to the attention of the regulating agency, particularly if violations involve allegations of consumer fraud in connection with the practices of radon professionals. A consumer complaint provision can help build general support in the community for the agency's program. A statute can describe the procedures for making a complaint and the procedures the state must follow in responding to citizen complaints.

**Option #2: Citizen enforcement suits.**

Citizen suit provisions allow citizens to enforce the law directly by filing a civil action in court. Citizens can be empowered to bring suit against either a private party who has violated the law, or against the state agency for its failure to carry out its duties. A citizen suit provision can either set out the specific violations on which the citizen suit is based, or it can allow citizen suits for any violation of the radon statute. The citizen suit provisions in most environmental laws allow the filing of a citizen suit only after notice has been given to both the government agency and any private party involved.

The remedies that can be made available in citizen suits include:

- Civil Penalties — Citizens can be empowered to request that the court order the violator to pay fines as specified in the law and regulations;
- Injunction — Citizens can be empowered to request that a court order the violator to take, or refrain from taking, certain action in order to achieve compliance with the law and regulations. Injunctions can also be provided in order to ensure that a state agency complies with its responsibilities under the law and regulations; and
- Attorneys Fees — Citizens who prevail in their suits can be empowered to seek attorneys fees from the violator. Attorneys fees provisions are important in ensuring that citizens can actually utilize citizen suit provisions. Without the possibility of recovering fees, most citizens could not afford to bring suit; at the same time, by limiting recovery of attorneys fees to prevailing parties, a legislature can reduce the likelihood that frivolous cases will be brought.

**Option #3: Private civil actions for damages.**

A radon statute could provide that citizens have the right to sue violators of the law for any damages that may result from the violation. Multiple damages could be authorized for certain types of violations.

The state's existing consumer protection law might provide an appropriate vehicle for citizen enforcement of certification/licensure requirements. If the state's consumer protection law already contains a private right of action, the legislature could amend the law to include an explicit prohibition against non-licensed or non-certified radon testers and/or mitigators doing business in the state.

In any case, radon legislation that provides a private cause of action for damages would generally spell out whether or not it preserves the citizen's right to sue a violator under other statutes or under state common law.

## FUNDING FOR A RADON PROGRAM

The key to the continued success of any radon program is adequate funding to ensure the program's effective implementation. Therefore, legislation can help not only to formulate the substantive elements of a program, but also to put in place appropriate funding mechanisms. Ultimately, the extent to which such funding mechanisms are implemented depends on the budget constraints that exist in the state, as well as constitutional or other restraints (e.g., provisions requiring that all monies are placed in the state treasury or prohibiting the establishment of special funds).

Funding will be vital to cover personnel and general administrative costs, as well as specific initiatives the program may establish, such as licensing/certification of radon professionals; testing and mitigation in schools or homes; and public information and outreach. Funding is also essential to developing credible, effective enforcement capabilities. Most states are currently funding radon program activities.

### Factors to Consider:

In examining methods to fund a radon program, the state legislature will determine both the appropriate vehicle for funding and the specific source(s) of funding for program activities. Some of the factors to consider in this regard are:

- whether the radon program will be wholly funded by designated sources (e.g., fees) or will receive only part of its funding from designated sources.
- whether enabling legislation is necessary and/or desirable to permit local jurisdictions to establish funding sources for local radon programs.
- whether other state regulatory or public health programs utilize funding mechanisms that can serve as models.

**ISSUE:** WHAT SOURCES OF FUNDING ARE AVAILABLE THROUGH LEGISLATION TO ENSURE THE SUCCESSFUL AND CONTINUED IMPLEMENTATION OF A STATE'S RADON PROGRAM?

### Option #1: Fees.

A radon program could include legislation mandating the payment of fees in certain circumstances, and can require that those fees be used to support the radon program.

One likely source of fees in a radon program would be from the certification or licensing of radon professionals and other radon-related services. This fee could be an annual or a one-time charge, or could be assessed when a license is issued and renewed. The legislation could specify that the fees are to be targeted to the radon program and placed in a special, non-lapsing fund, rather than be placed in the state treasury for general needs, if special funds are allowed under state law.

Another type of fee would be a one-time assessment at the time of a real estate transfer. This could be a flat fee, or could be based on a percentage of the sales price of the real estate.

**Florida** has enacted legislation establishing a surcharge on new construction, as a source of funding for its radon program. The law requires a surcharge of one cent per square foot on new construction, and on certain additions, alterations or renovations to existing

### Option #2: Surcharges.

Surcharges can be imposed in a manner similar to fees, though are generally a one-time charge rather than a regular assessment. They will likely vary in amount depending on the relative value of the items on which they are based. One example of a surcharge would be the requirement that all newly constructed buildings pay a small amount per square foot. The amount of the

charge could vary depending on whether the building is located in a geographic hot spot, or whether the building complies with voluntary radon-resistant construction standards. Such a charge could be payable following building inspection, or as a condition of the issuance of a building permit.

**Option #3: Fines and penalties.**

As discussed in Section VII above, "Radon Program Enforcement," fines and civil penalties can be a central component of any regulatory program's enforcement scheme. As a partial funding source for a radon program, legislation could specifically provide that all fines and penalties collected by the agency as a result of enforcement action be placed in a special, nonlapsing fund for support of the radon program, if special funds are allowed under state law.

**Option #4: Public bonds.**

Depending upon the authority granted to the state in its constitution, the legislature might authorize the state treasurer or other appropriate state official to issue bonds that will be used to support a radon program. The legislation could specify the maximum aggregate principal of the bonds, as well as the maximum amount of each bond issued. Although bonding may not be appropriate to fund administrative and enforcement costs, it might be used to help pay for activities such as radon testing and mitigation in schools.

**Option #5: General appropriations.**

Perhaps the most common funding mechanism for a radon program is the appropriation of general state funds by the legislature. Funds can be appropriated for the general support of the radon program, or for specific projects the agency is contemplating (e.g., a radon study, a public education initiative or financial assistance for mitigation in schools). Such appropriations are for single or multiple year periods, as specified by the legislature.

**ISSUE:** WHAT FUNDING STRUCTURES CAN BE USED TO ENSURE THAT RADON PROGRAM MONIES ARE EFFECTIVELY UTILIZED?

**Option #1: General radon fund.**

Unless otherwise prohibited under state law or by the state constitution, a general radon program fund (or trust fund) can be established by the legislature as the repository of all funds that are to be used for the program. Such a fund would probably be described in the legislation as covering general administration and enforcement of the radon program. The legislation creating the fund might specify particular items that are not eligible for payment through the fund. In the alternative, the account could be set up as a "restricted receipt" account, whereby the money in the fund may only be used for the purposes enumerated by the legislature.

The legislature should specify which sources are to contribute to the fund. For example, legislation could provide that all fees, penalties, surcharges or other monies collected by the state radon agency be deposited in the fund. The legislature could also specify whether the money collected by the program should be added to, or used in lieu of, appropriations by the state legislature, and whether the account may accept federal funds.

The **Ohio** legislature enacted legislation creating a radon program fund in the state treasury. The law provides that all civil penalties and fines, as well as any other moneys received under the radon program, be credited to the fund. Use of the fund is limited to administration and enforcement of the radon law, which includes licensure requirements and specifies the powers and duties of the radon agency.

The account could be set up as non-lapsing, i.e., as continuing from year to year. A separate provision could ensure that all accrued interest is credited to the fund.

**Option #2: Special project funds.**

In addition to (or instead of) a general radon fund, the legislature could set up one or more special funds to cover the ongoing costs of particular components of the state radon program. One example of such a fund would be a low interest loan fund, to help home owners pay for radon testing and mitigation.

Another example of a special project fund would be a home improvement guaranty fund. Such a fund could be set up to reimburse property owners who have damages claims against state-licensed radon professionals. For example, the state may provide that if a home owner obtains a court judgment from a state-certified radon contractor for damages resulting from the work of the contractor, then the home owner may apply to the guaranty fund for any amount of the judgment unpaid by the contractor. The fund would be used to reimburse the owner while the state seeks recovery from the radon professional. The state's ability to recover funds and collect any applicable penalties is important to the success of such a program. As mentioned earlier, such funds could only be set up in states whose law or constitution does not prohibit dedicated funds.