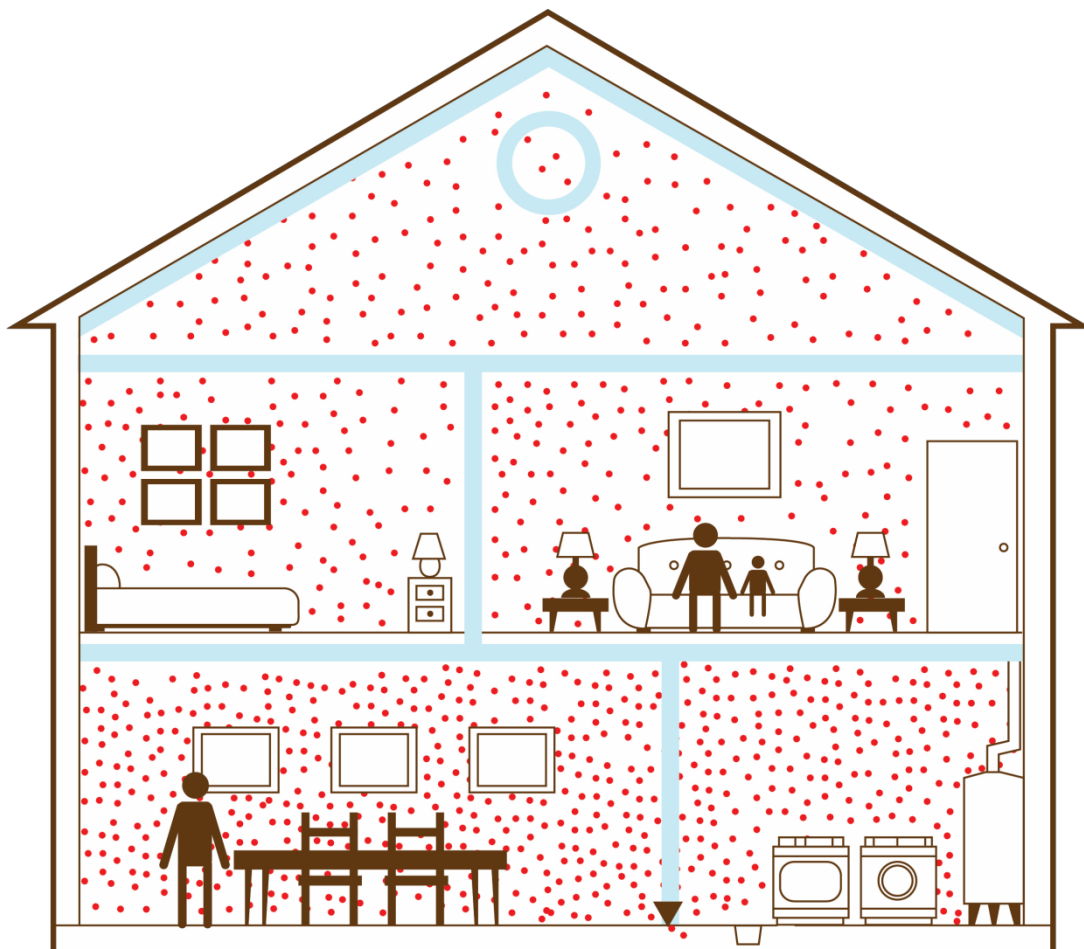


Public Health Radon Reduction Roadmap

*Recommended Practices and Policies to
Reduce Exposure to Radon in our Communities*



Tier 1: Outreach & Education

For communities with little or no awareness of radon risks.

Option	Venue or Method	Example
<p>Provide low-cost radon tests kits or coupons coupled with educational materials. These cost-effective tests provide valuable information, especially when paired with follow-up assistance to understand and take action on results. Educational materials can target selected stakeholders, such as women, doctors, real estate agents, building code officials, contractors, etc.</p>	<ul style="list-style-type: none"> Health fairs Community events Local public health agencies Building departments Public buildings (e.g. libraries) 	<p>Wyoming Department of Health Radon Education and Outreach: https://health.wyo.gov/phsd/radon</p>
<p>Provide free radon test kits or coupons with free in-home air quality assessments.</p>	<ul style="list-style-type: none"> Local public health agencies Housing programs Rental housing permit programs CSU Extension Energy reduction/savings programs 	<p>Fort Collins, Colorado: https://www.fcgov.com/healthyhomes/homeassess.php</p>
<p>Provide free radon testing and inspection services for residences upon request.</p>	<ul style="list-style-type: none"> Local public health agencies Housing programs Rental housing permit programs 	<p>New Hampshire Department of Health and Human Services Section 125:9X.: http://www.gencourt.state.nh.us/rsa/html/X/125/125-9.htm</p>
<p>Provide residential radon gas consultations.</p>	<ul style="list-style-type: none"> Local public health agencies Housing programs CSU Extension Energy reduction/savings programs 	<p>Las Animas-Huerfano Counties District Health Department: http://www.la-h-health.org/index.php/services/environmental-health.html</p>
<p>Provide digital signage or videos with radon messages in medical clinics and offices.</p>	<ul style="list-style-type: none"> Local public health clinics (e.g. WIC, immunizations) Hospital waiting rooms Doctors' offices Pharmacies 	<p>Montana local public health departments: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4358189</p>

<p>Educate stakeholders about radon. Post video(s) or provide a link on website to <i>Radon Aware</i> videos for homebuyers, real estate professionals, builders, and decision makers.</p>	<p>Local public health agencies Housing programs Social media (e.g. Facebook, Twitter, etc.) Real estate websites (e.g. Zillow, Trulia, etc.)</p>	<p>Colorado PHR³ <i>Radon Aware</i> videos: https://www.youtube.com/playlist?list=PLxRmoSeWYJ1WTpjXlwvdNw7vSRd7YM7eu</p>
<p>Encourage consumers to test for radon. Post video or provide a link on website to video encouraging testing homes for radon.</p>	<p>Local public health agencies Social media Real estate websites (e.g. Zillow, Trulia, etc.)</p>	<p>Missoula, Montana Public Health: YouTube video Radon Ninja: https://www.youtube.com/watch?v=HiPvnuN1KYg</p>
<p>Provide a free radon guide for tenants.</p>	<p>Health fairs Community events Local public health agencies Housing departments Public buildings (e.g. libraries)</p>	<p>Illinois Radon Guide for Tenants: https://www2.illinois.gov/iema/NRS/Radon/Documents/RadonGuideForTenants.pdf</p> <p>CO Dept. of Public Health & Environment (CDPHE): https://www.colorado.gov/pacific/cdphe/testing-your-home-radon</p>
<p>Provide a radon testing checklist to homeowners for non-mandatory residential testing.</p>	<p>Health fairs Community events Local public health agencies Building departments Housing departments Public buildings (e.g. libraries)</p>	<p>Connecticut Radon Testing Checklist for Residential Properties: http://www.ct.gov/dph/radon</p>

Tier 2: Social Mobilization

For communities with established radon education and outreach programs that want to move towards incorporating radon policies and/or codes into city/county codes.

Options	Venue or Method	Example
Distribute an easy-to-use homeowner self-inspection checklist for assessing the home radon mitigation (reduction) system.	Health fairs Community events Local public health agencies Building departments Housing departments Public buildings (e.g. libraries)	<i>Pennsylvania Consumer Radon Mitigation System Checklist:</i> http://www.dep.pa.gov/Business/RadiationProtection/RadonDivision/Monitoring/Documents/2940-FS-DEP4430.pdf?Mobile=1&Source=%2FBusiness%2FRadiationProtection%2FRadonDivision%2FMonitoring%2F%5Flayouts%2Fmobile%2Fview%2Easpx%3FList%3Dcb5aebcd%252Db987%252D434
List “Radon Mitigation (reduction) System” as a permitted retrofit option for basement finishing to fulfill energy efficiency requirements.	Building code Energy code Other codes	Boulder County, Colorado, <i>Build Smart Checklist:</i> https://assets.bouldercounty.org/wp-content/uploads/2017/03/buildsmart-checklist-2015.pdf
Require a radon test as part of a basement finishing permit, regardless of the retrofit option selected.	Building code Energy code Other codes	Boulder County, Colorado, <i>Build Smart Checklist:</i> https://assets.bouldercounty.org/wp-content/uploads/2017/03/buildsmart-checklist-2015.pdf
Require installation of radon mitigation (reduction) systems that include design and installation be performed by a certified radon mitigation contractor.	Building code Energy code Other codes	New Jersey: http://www.njradon.org/download/sub27.pdf
Partner with local energy reduction/savings program to distribute test kits and review radon testing information with clients during energy audits of their homes.	Local public health agencies Housing programs CSU Extension Energy reduction/savings programs	Boulder County, Colorado, EnergySmart Program: https://www.energysmartyes.com/

<p>Test affordable housing for radon.</p>	<p>Local public health agencies Housing programs City/county codes</p>	<p>U.S. Housing and Urban Development (HUD): https://www.hud.gov/sites/documents/13-03HSGN.PDF</p>
<p>Provide a customizable flyer for builders to communicate radon-resistant new construction features in their homes.</p>	<p>Local public health agencies Building departments Building professional associations (e.g. Colorado International Code Council [CICC] and the Colorado Association of Home Builders [HBAColorado])</p>	<p>Las Animas-Huerfano Counties, Colorado, <i>Radon-Resistant New Construction Checklist</i>: http://www.la-h-health.org/index.php/services/environmental-health.html</p>
<p>Require sharing of radon mitigation (reduction) data by contractors and laboratories with public health agencies.</p>	<p>Local public health agencies Colorado Dept. of Public Health & Environment (CDPHE)</p>	<p>Kansas Department of Health and Environment: http://kansasradonprogram.org/files/kansasradonprogram//lawfactsheet.pdf</p>
<p>Require real estate professionals to include radon on a <i>Buyer Due Diligence Checklist</i> provided to help homebuyers review a home before purchase to ensure it is safe to live in. The radon section contains specific language about radon as a health hazard and provides a link to the appropriate radon program website.</p>	<p>City/county codes CO Division of Real Estate</p>	<p>Utah Association of Realtors, <i>Buyer Due Diligence Checklist</i>: https://eforms.com/images/2018/07/Utah-Buyer-Due-Diligence-Checklist.pdf</p>
<p>Require sellers of residential properties to provide information to prospective purchasers disclosing any radon test results or mitigation (reduction) systems.</p>	<p>City/county codes CO Division of Real Estate</p>	<p>Connecticut <i>Residential Property Condition Disclosure Form</i>: http://www.portal.ct.gov/DCP/Common-Elements/Consumer-Facts-and-Contacts/Real-Estate</p>
<p>Require real estate disclosure documents to strongly recommend that home buyers test for radon before purchase. The same hazard disclosure requirement applies to lessors and encourages testing by tenants.</p>	<p>City/county codes CO Division of Real Estate</p>	<p>Illinois <i>Radon Awareness Act</i>: http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=2913&ChapterID=37 Illinois <i>Residential Real Property Disclosure Act</i>: http://www.ilga.gov/legislation/ilcs/ilcs5.asp?ActID=2152&ChapterID=62</p>

<p>Require that each contract for the sale of residential property contain prescribed language warning of radon hazards, requiring seller disclosure of known concentrations, and urging testing.</p>	<p>City/county codes CO Division of Real Estate</p>	<p>Kansas <i>Required Statutory Disclosures Addendum</i>: https://www.krec.ks.gov/docs/default-source/forms/required-statutory-disclosures-addendum.pdf?sfvrsn=6</p>
<p>Feature the video "Installing Radon Systems in New Homes" for builders and consumers on websites, both in English and in Spanish.</p>	<p>Building departments Local public health agencies</p>	<p>CO Dept. of Public Health & Environment (CDPHE): https://www.colorado.gov/pacific/cdphe/radon-and-real-estate</p>
<p>Require that passive, untested radon systems in new homes be labeled as such.</p>	<p>Building code Energy code Land use code Other codes</p>	<p>Fort Collins, Colorado: https://www.fcgov.com/building/pdf/appendixf.pdf</p>
<p>As an incentive, discount new home permits if radon-resistant new construction (RRNC) techniques are incorporated into the home during construction. This is known as the "Radon Rebate" program.</p>	<p>Building departments Local public health agencies</p>	<p>East Moline, Illinois: https://www.epa.gov/sites/product/files/2014-11/documents/success_stories.pdf</p>
<p>Create an incentive program that gives the designation of "Gold Standard Radon-Resistant Builder" to builders who routinely install active radon mitigation (reduction) systems. An active system has a radon fan installed as part of the system.</p>	<p>Building departments Local public health agencies</p>	<p>Minnesota: http://www.health.state.mn.us/goldstandard</p>
<p>Create an incentive program that gives the designation of "Radon Aware" to real estate professionals who receive radon training and who pledge to be "Radon Aware" by agreeing to provide up-to-date radon educational materials and always recommending certified radon contractors to their clients.</p>	<p>Local public health agencies</p>	<p>Boulder County, Colorado: https://www.bouldercounty.org/environment/healthy-home/become-a-radon-aware-real-estate-professional/</p>

Tier 3: Institutional Change & Policy

For communities ready to incorporate policies and practices that directly reduce radon exposure into city/county codes, programs, and practices.

Options	Venue or Method	Example
<p>Require owners of rental units to inform renters, in writing, before a lease is signed if the rental space has been tested for radon and that a radon hazard may exist. If the rental unit hasn't been tested, require that the renter can conduct a do-it-yourself radon test or ask the owner to test by hiring a licensed radon contractor. If a renter conducts a radon test in the rental unit and results show high radon levels, require the renter to inform the building owner, in writing.</p>	<p>Rental housing permit programs Housing programs City/county codes</p>	<p>Illinois <i>Radon Awareness Act</i>: http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=2913&ChapterID=37</p>
<p>Require real estate professionals to provide homebuyers with radon information during real estate transactions.</p>	<p>City/county codes CO Division of Real Estate</p>	<p>Fort Collins, Colorado: https://www.fcgov.com/airquality/radon.php/pdf/radon-brochure-color2014.pdf</p>
<p>Require radon testing in all residential rental properties, and unless a mitigation (reduction) system is installed, allow tenants to request a retest every 10 years. If the radon level is 4 pCi or higher and is not mitigated, allow the landlord or tenant to end the lease with at least 30 days' notice.</p>	<p>City/county codes Housing programs Rental housing permit programs</p>	<p>Maine: https://www.maine.gov/dhhs/mecdc/environmental-health/rad/radon/documents/2019tipsheet11.pdf</p>
<p>Require single-family home sellers to test for radon and disclose results prior to sale.</p>	<p>City/county codes CO Division of Real Estate</p>	<p>Montgomery County, Maryland: https://www.montgomerycountymd.gov/green/air/radon.html</p>
<p>Build multi-family affordable housing with radon resistant new construction (RRNC) techniques.</p>	<p>Rental housing permit programs Housing programs City/county codes</p>	<p>Boulder County, Colorado: https://www.bouldercounty.org/families/housing</p> <p>U.S. Housing and Urban Development (HUD): https://www.hud.gov/sites/documents/13-03HSGN.PDF</p>

<p>Adopt IRC Appendix F (RRNC Code) to ensure new single-family home construction is "radon resistant". The following Colorado cities and counties have adopted Appendix F:</p> <p>Cities: Aspen, Boulder, Breckenridge, Carbondale, Cedaredge, Crested Butte, Dillon, Durango, Erie, Ft. Collins, Frisco, Golden, Gunnison, Hahn’s Peak Village, Hayden, Lake City, Lakewood, LaVeta, Longmont, Louisville, Milner, Mount Crested Butte, Oak Creek, Orchard City, Pagosa Springs, Phippsburg, Ridgway, Sheridan, Silverthorne, Snowmass Village, Steamboat Springs, Sterling, Superior, Toponas, Trinidad, Vail, Walsenburg, Wheat Ridge, and Yampa</p> <p>Counties: Archuleta, Boulder, Clear Creek, Eagle, Elbert, Gunnison, Huerfano, Jefferson, La Plata, Las Animas, Logan, Montrose, Pitkin, Routt, San Miguel, and Summit</p>	<p>Building code Energy code Land use code Other codes</p>	<p>Fort Collins, Colorado: https://www.fcgov.com/building/pdf/appendixf.pdf</p> <p>Jefferson County, Colorado: https://www.jeffco.us/documentcenter/view/2518</p>
<p>Require that contractors be certified who install radon fans or upgrade passive radon systems to active ones with fans.</p>	<p>Building code Energy code Land use code Other codes</p>	<p>Illinois Regulations for Radon Service Providers: ftp://www.ilga.gov/JCAR/AdminCode/032/03200422sections.html</p>
<p>Provide financial assistance for radon mitigation (reduction) system projects.</p>	<p>Community Development Financial Institution Fund (CDFI) Other financial assistance and incentives</p>	<p>CDFI: https://www.cdfifund.gov/Pages/default.aspx</p> <p>CDPHE: https://www.colorado.gov/pacific/cdphe/low-income-radon-mitigation-assistance</p>
<p>Provide financial and technical assistance for radon testing and mitigation (reduction) to income-eligible, owner-occupied homeowners.</p>	<p>Community Development Financial Institution (CDFI) Other financial assistance and incentives</p>	<p>Aurora, Colorado: https://www.auroragov.org/residents/community_development/housing_assistance</p> <p>CDPHE: https://www.colorado.gov/pacific/cdphe/low-income-radon-mitigation-assistance</p>



<p>Require all multifamily building projects receiving government funding meet radon testing and mitigation (reduction) requirements for new construction, Substantial Rehab, Moderate Rehab, and Projects with Underground Garages (no other ground contact space).</p>	<p>Community Development Financial Institution (CDFI) State Housing and Finance Authorities Other financial assistance and incentives</p>	<p>Minnesota: http://www.mnhousing.gov/sites/Satellite?c=Page&cid=1360789106472&d=Touch&pagename=External%2FPage%2FEXTStandardLayout</p>
<p>Install radon mitigation (reduction) systems in existing affordable housing when testing shows radon levels at 4 pCi/L or higher.</p>	<p>Rental housing permit program Housing program City/county codes</p>	<p>Boulder County, Colorado: https://www.bouldercounty.org/families/housing</p> <p>U.S. Housing and Urban Development (HUD): https://www.hud.gov/sites/documents/13-03HSGN.PDF</p>
<p>Require that work performed by a radon mitigation (reduction) system contractor includes the layout, fabrication, and installation of a radon mitigation system. Require work involving heat recovery ventilation or makeup air components to be performed by a heating, ventilation, and air conditioning (HVAC) contractor and not include electrical wiring (which must be performed by an electrical contractor).</p>	<p>Building code Energy code Land use code Other codes</p>	<p>Utah (Construction Trades License Classification-Scope of Practice-S354): https://rules.utah.gov/publicat/code/r156/r156-55a.htm#T5</p>
<p>Require building permits for new construction to be issued only after radon testing and mitigation (reduction) plans are reviewed and in compliance.</p>	<p>Building code Energy code Land use code Other codes</p>	<p><i>California Health and Safety Code:</i> http://codes.findlaw.com/ca/health-and-safety-code/hsc-sect-105430.html</p>
<p>Require all new construction of single-family homes or dwellings containing two or fewer apartments, condominiums, or townhouses to have a passive radon mitigation (reduction) system installed.</p>	<p>Building code Energy code Land use code Other codes</p>	<p><i>New Jersey Radon Hazard Subcode:</i> http://www.state.nj.us/dca/divisions/codes/codreg/pdf_regs/njac_5_23_10.pdf</p>

Tier 4: Inspection and Enforcement

For communities ready to compel stakeholders to provide radon-resistant housing and require radon mitigation in existing homes be installed by certified contractors.

Options	Method	Example
Require all new construction of single-family homes, multi-family homes, and other specified residential buildings be built using Radon Reduction New Construction (RRNC) techniques.	Building code Energy code Land use code Other codes	Fort Collins, Colorado: https://www.fcgov.com/building/pdf/ORDINANCE_NUMBER_072_JUL-05-2017.pdf?1500058561
Enforce Radon Resistant New Construction (RRNC) code regulations, including plan review and inspection by building and electrical subcode officials.	Building code	Longmont, Colorado: https://www.longmontcolorado.gov/departments/departments-a-d/building-inspection/residential
Inspect and test residential property for radon and certify radon is within acceptable limits.	Building code Energy code Land use code Other codes	New Jersey: https://law.justia.com/codes/new-jersey/2013/title-13/section-13-1k-14/

The Public Health Radon Reduction Roadmap (PHR³) project aims to reduce radon exposure and its associated risk of lung cancer by encouraging and supporting Colorado communities in becoming *Radon Aware*.

The Public Health Radon Reduction Roadmap (PHR³)

Phone: 303.441.1580

Email: HealthRadon@bouldercounty.org

Website: RadonAwareColorado.org

Colorado Department of Public Health & Environment

Radon Program

4300 Cherry Creek Drive South

Denver, CO 80246-1530

Website: ColoradoRadon.info



COLORADO
Hazardous Materials
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Department of Public Health & Environment

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