



RADON BASICS & POLICIES

Indoor Air Unit | Radon Program

NAHRO Conference 9/16/2024

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Reminder

- Your work may need to comply with asbestos and lead requirements
- See MDH websites
- Questions? Contact MDH Lead & Asbestos Program:
 - 651-201-4620
 - health.asbestos-lead@state.mn.us

Agenda:

Basics and Health

MDH Data Portal

HUD Policy

Testing

Mitigation

Laws and Policies



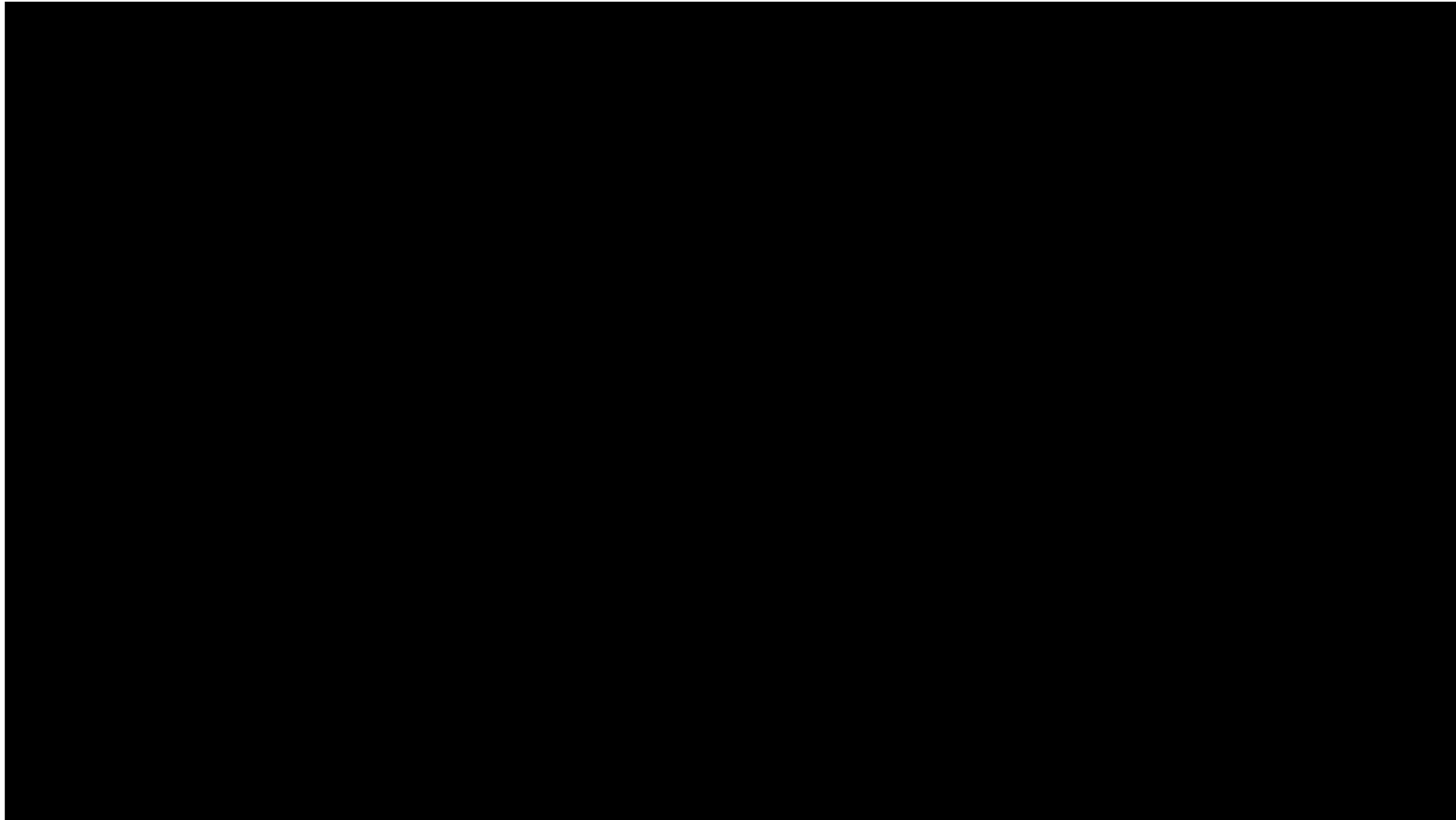
Basics & Health

What is Radon?

- Colorless, odorless, tasteless gas
- Radioactive
- Breakdown of uranium
- Leading cause of lung cancer in non-smokers

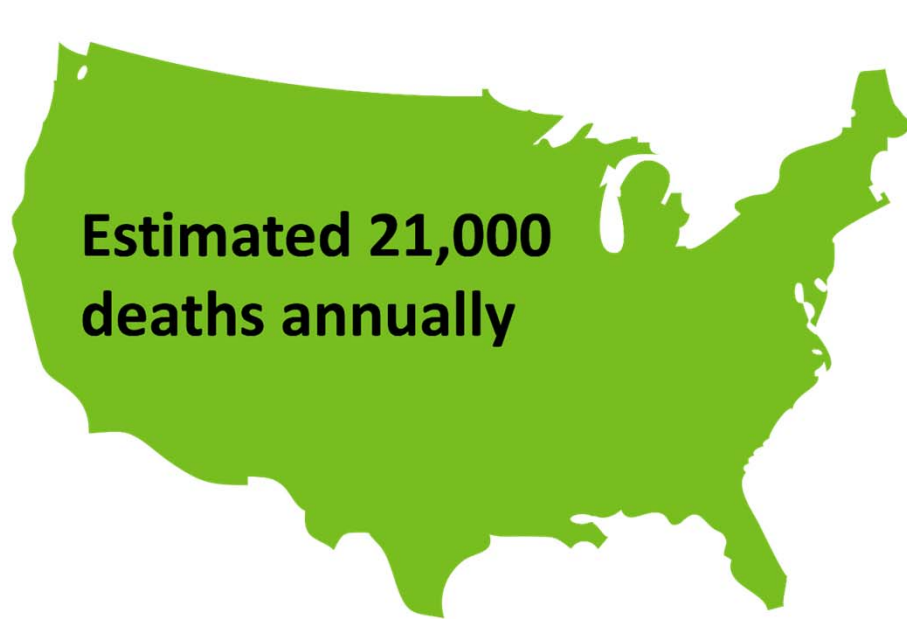


A Personal Radon Story



Health Effects

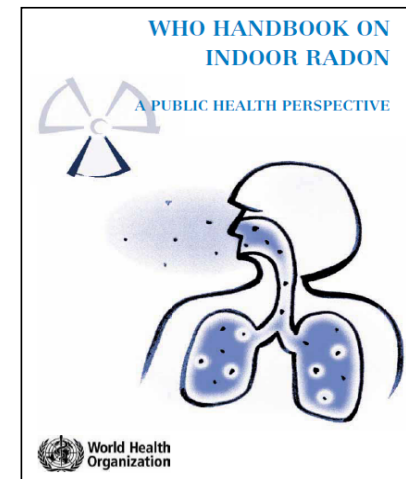
Second leading cause of lung cancer in the U.S.



*EPA Assessment of Risks from Radon in Homes (June 2003, EPA-402-R-30-0003)

What Level is Elevated?

- There is **no known safe level** of radon
 - Goal: as low as reasonably achievable
- World Health Organization (WHO):
 - 2.7 pCi/L health based standard
- Environmental Protection Agency (EPA):
 - 2 pCi/L (unofficial recommendation)
 - 4 pCi/L (official action level)



Lifetime Risk of Dying from Lung Cancer

Risk is shown per 1,000 people

Radon Level (pCi/L)	Never Smokers	Current Smokers	General Population
20	36	260	110
10	18	150	56
8	15	120	45
4*	7	62	23
2	4	32	12

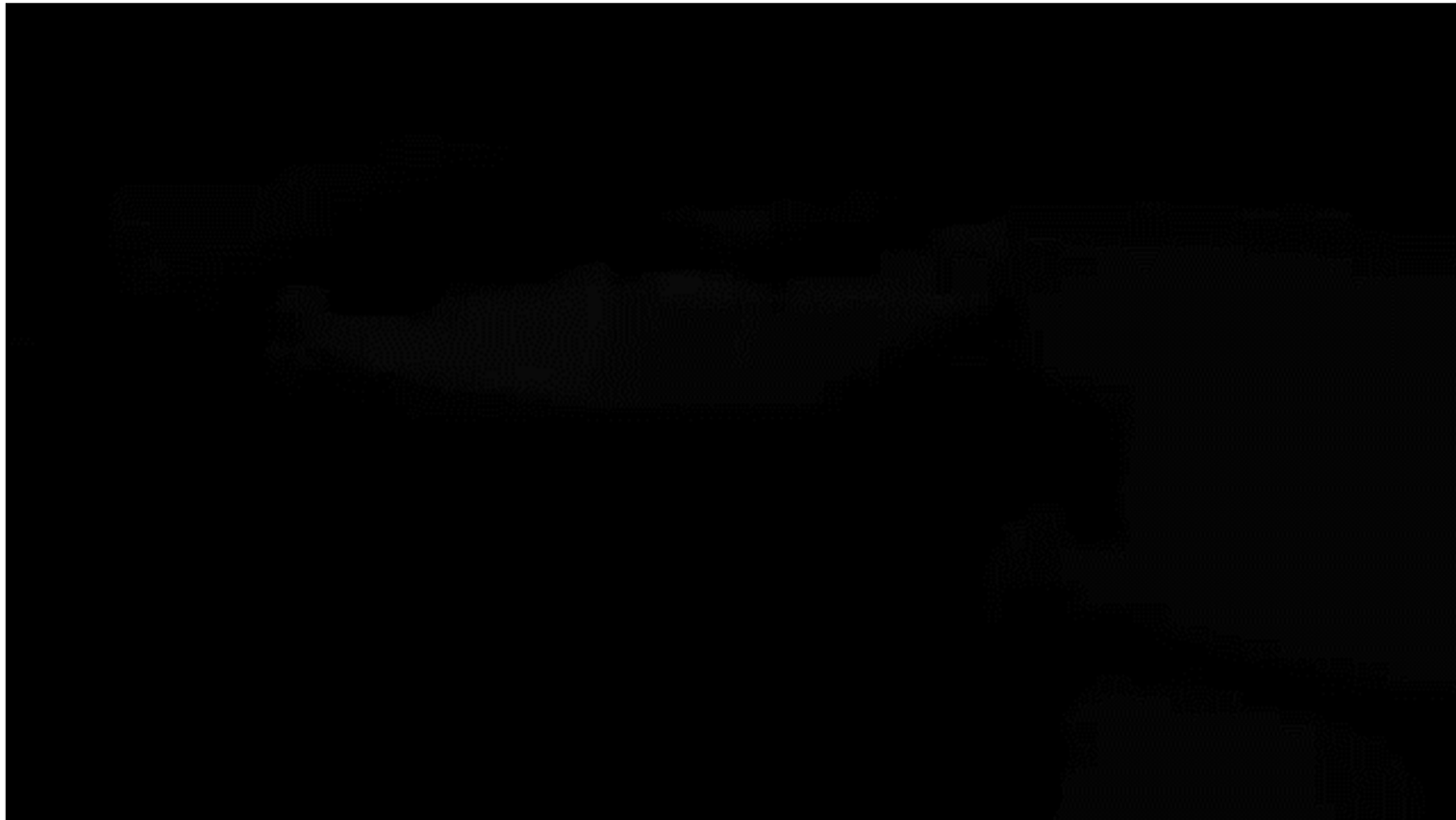
* EPA Action Level

Radon Emits Particles that Can Etch Hard Plastic

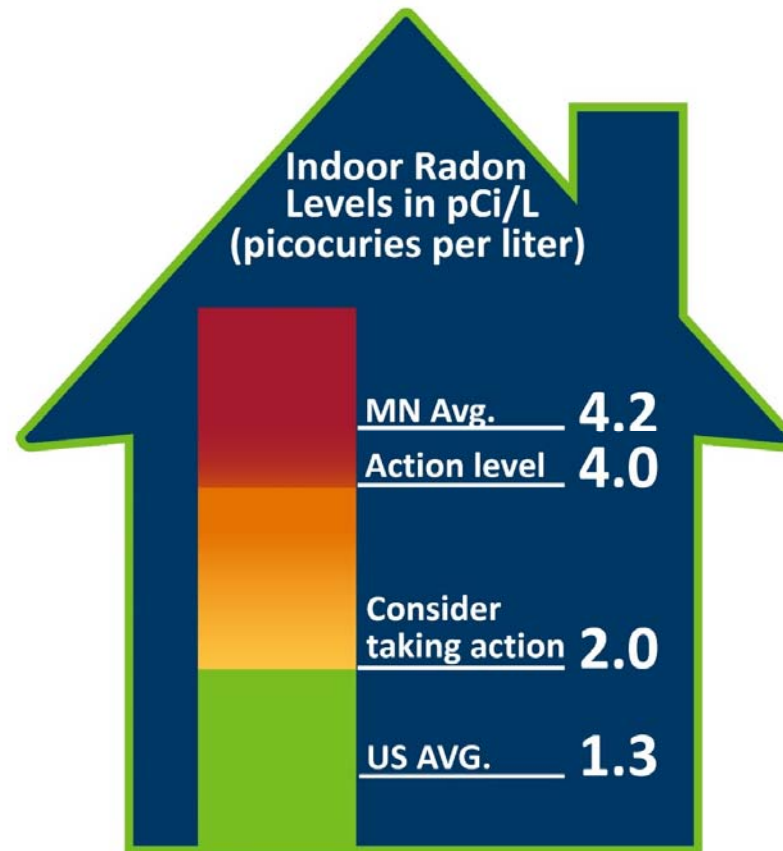


Long Term Kit, 100x magnification

Radon Can be Seen in Cloud Chamber



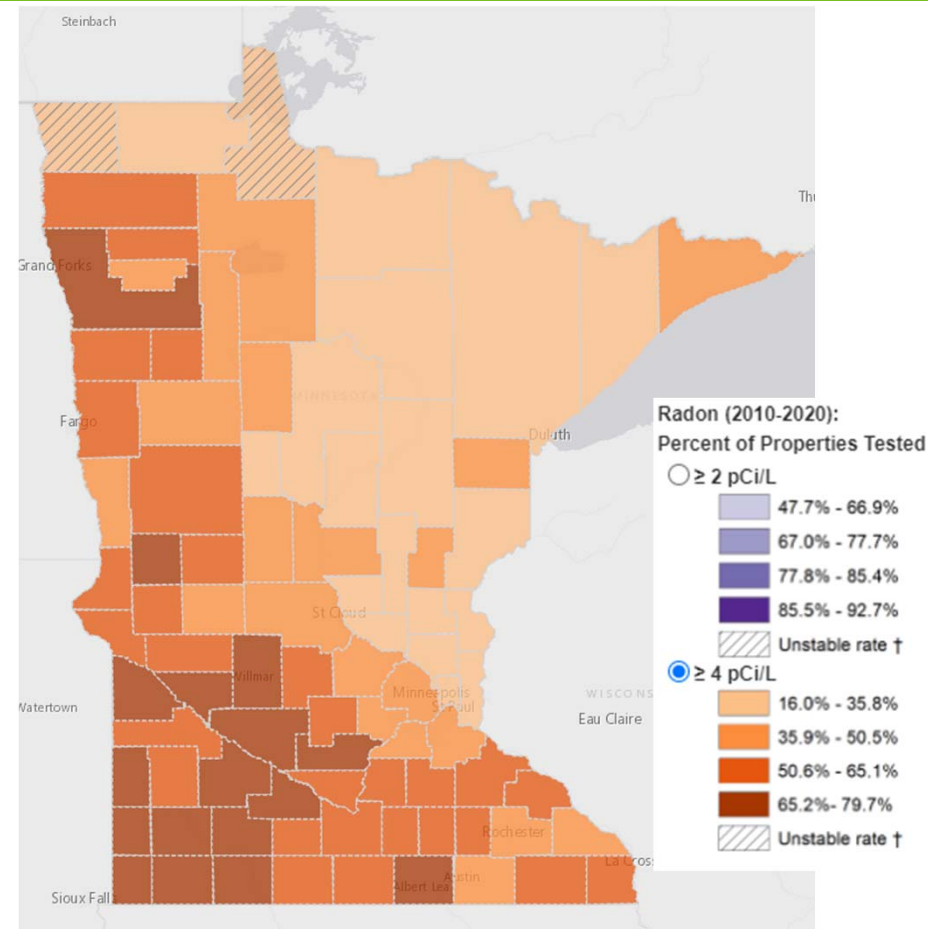
Average radon levels



Outdoor ~0.4 pCi/L

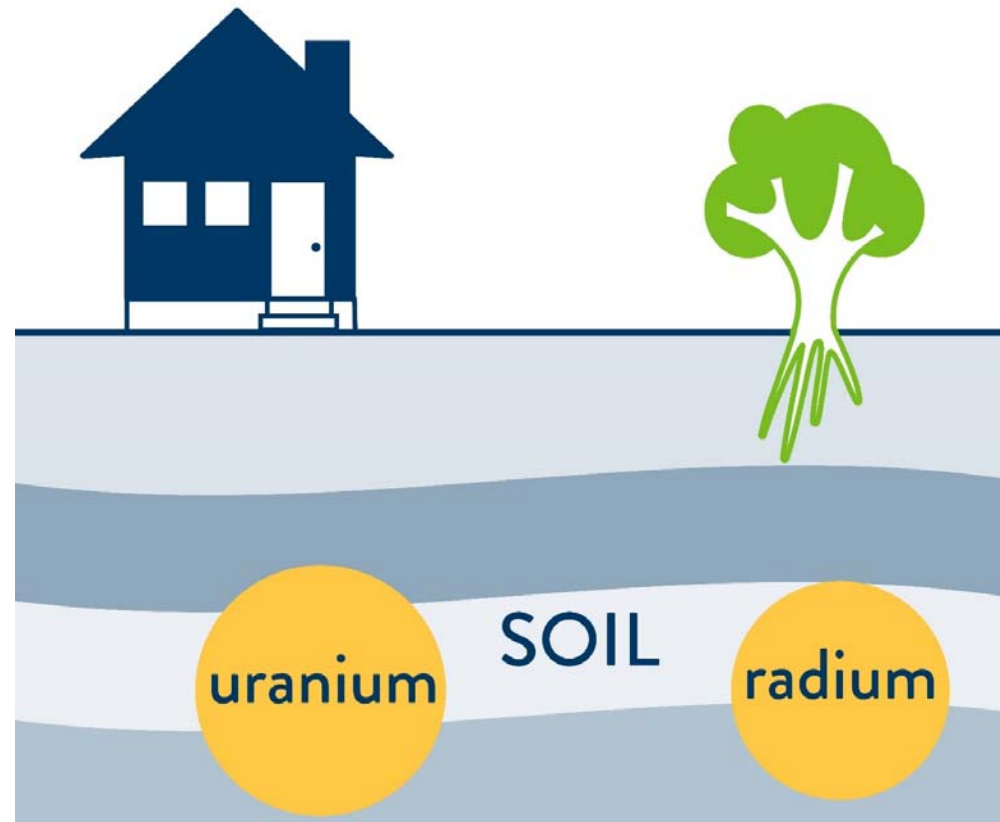
Radon levels high across state

- 228,000+ properties
- Mean=4.2 pCi/L
 - Summer (3.5) vs Winter (4.6)
- 40% of homes elevated

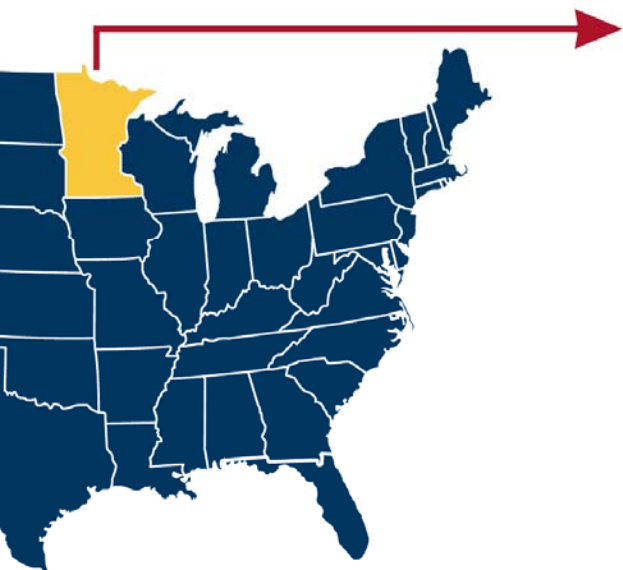


Where is radon found?

- Soil
 - Major source in Minnesota
- Water
- Air



Radon action level



Minnesota's radon levels are more than **3x** higher than the rest of the United States.

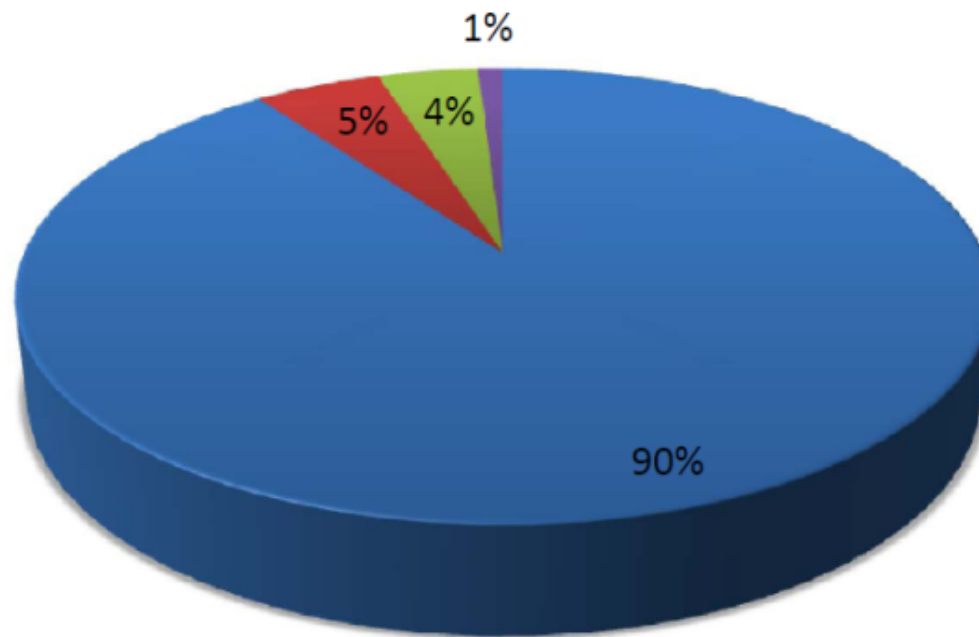
Action level is at 4 pCi/L



2 out of 5 Minnesota homes have high radon levels.

Driving Forces for Indoor Radon Levels

■ Air Pressure ■ Emanation ■ Diffusion ■ Water Aeration



How does radon enter a home?

Common Pathways Radon Enters the Home

Open tops of block walls



Mortar joints



Sump basket



Floor - wall joints



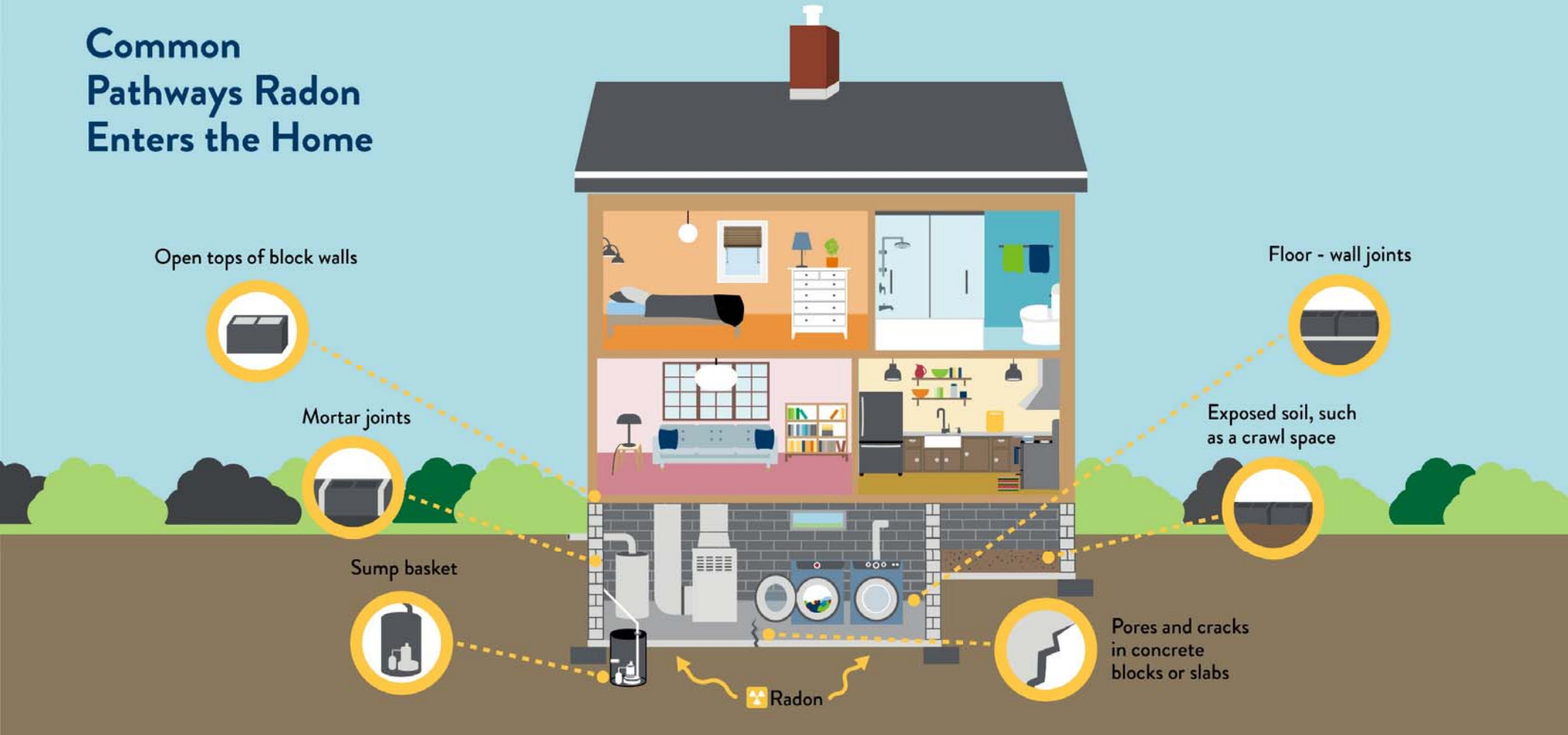
Exposed soil, such as a crawl space



Pores and cracks in concrete blocks or slabs



Radon



How does radon enter a home?

Air Pressure



Stack Effect:

As warm air leaves the top of the house, air comes in the bottom of the house



Down Wind Draft Effect:

Wind flowing over the top of a house creates the same effect as the stack effect



Vacuum Effect:

Air mechanically exhausted from the house is replaced from other pathways

Stack Effect



Any house can have high radon

- Slab-on-Grade and Basements

- Entry through floor joints, cracks, plumbing penetrations.



- Crawl-Space

- Entry from large soil area and drawn into living space.



- Mobile Homes

- If well skirted, they act like crawl spaces.





MDH Data Portal

Minnesota Data

The screenshot shows a web browser window with the URL health.state.mn.us/communities/environment/air/radon/index.html. The breadcrumb trail is: Home > Healthy Communities, Environment a... > Environments and Your Health > Air Quality > Radon In Homes.

RADON

- [Radon in Homes](#)
- [Radon Testing](#)
- [Radon in Real Estate](#)
- [Find a Radon Measurement Professional](#)
- [Find a Radon Mitigation Professional](#)
- [Radon Mitigation Systems](#)
- [Financial Assistance](#)
- [Radon Resistant New Construction](#)
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- [Laws, Rules and Standards](#)
- [Radon Poster Contest](#)

RELATED TOPICS

- [Radon Data Portal](#)
- [Radon in Schools](#)

Radon in Homes

The Minnesota Department of Health (MDH) provides information on radon and how to protect your family's health. MDH recommends that every Minnesota home be tested for radon.

Download a printable version of the brochure:
[Radon: Keeping you safe from radon \(PDF\)](#)

What is radon?

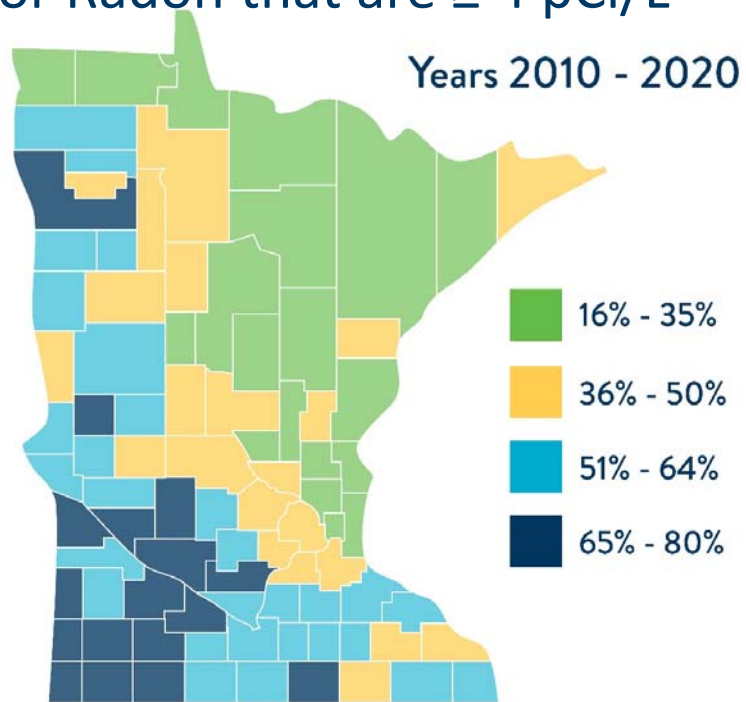
Radon is a colorless and odorless gas that comes from the soil. The gas can accumulate in the home. Radon gas decays into fine particles that are radioactive. When inhaled, these fine particles can damage the lungs. Exposure to radon over a long period of time can lead to lung cancer.

It is estimated that 21,000 people die each year in the United States from lung cancer due to radon exposure. A radon test is the only way to know how much radon is in your home. Radon can be reduced with a mitigation system.

- <https://data.web.health.state.mn.us/web/mndata/radon>

The screenshot shows a web browser at the URL data.web.health.state.mn.us/web/mndata/radon. The page header includes the Minnesota Department of Health logo and the text "Minnesota Public Health Data Access". Navigation options include "Choose topic", "County Info", "Get help", and a search bar. A sidebar on the left contains buttons for "View charts", "Maps", and "About the data". The main content area is titled "Radon" and includes a sub-header "Radon can be found throughout Minnesota". The text explains that radon is a colorless, odorless radioactive gas that can enter buildings and result in high indoor radon levels. It notes that radon gives off radioactive particles that can damage the lining of the lungs. A graphic shows five houses, with two highlighted in green, representing that two out of five Minnesota homes have high radon levels. The text further states that radon is a serious public health issue in Minnesota, where 2 in 5 homes tested have radon levels that are a major health risk. It mentions that Minnesota has high radon levels due to its unique geology and cold climate, and that during the winter, home heating systems tend to draw in radon gas from the soil, increasing radon levels inside the home. Many Minnesotans also use basements as living spaces, which can increase radon exposure. The page also features a section titled "Radon is the second leading cause of lung cancer", stating that the U.S. Surgeon General has warned that radon is the second leading cause of lung cancer in the United States today. Only smoking causes more lung cancer deaths. If your home has high radon levels and you smoke, your risk of lung cancer is even higher. Radon accounts for about 21,000 lung cancer deaths every year. You can order a discounted radon test kit today and find a radon mitigator.

Percent of MN Properties Tested for Radon that are ≥ 4 pCi/L



- 10 years of data (2010 – 2020)
- Data comes from labs (2010 – 2020) and radon professionals (2019 – 2020)

Radon Professional vs. Lab Data

Data sets from 2019 and 2020

Professional Data

- **61,238 radon tests**
- Testing was highest in the **summer** season with **31% of total tests**
- Geographically tests had a similar pattern to Lab Data
- Mostly real estate testing completed in the summer and the **results are lower** overall than the homeowner testing

Lab Data

- **35,828 radon tests**
- Testing was highest **in winter** with **38% of total tests**
- Geographically tests had a similar pattern to Pro Data
- Mostly winter testing corresponding with NRAM and the **results are higher**

About the Data

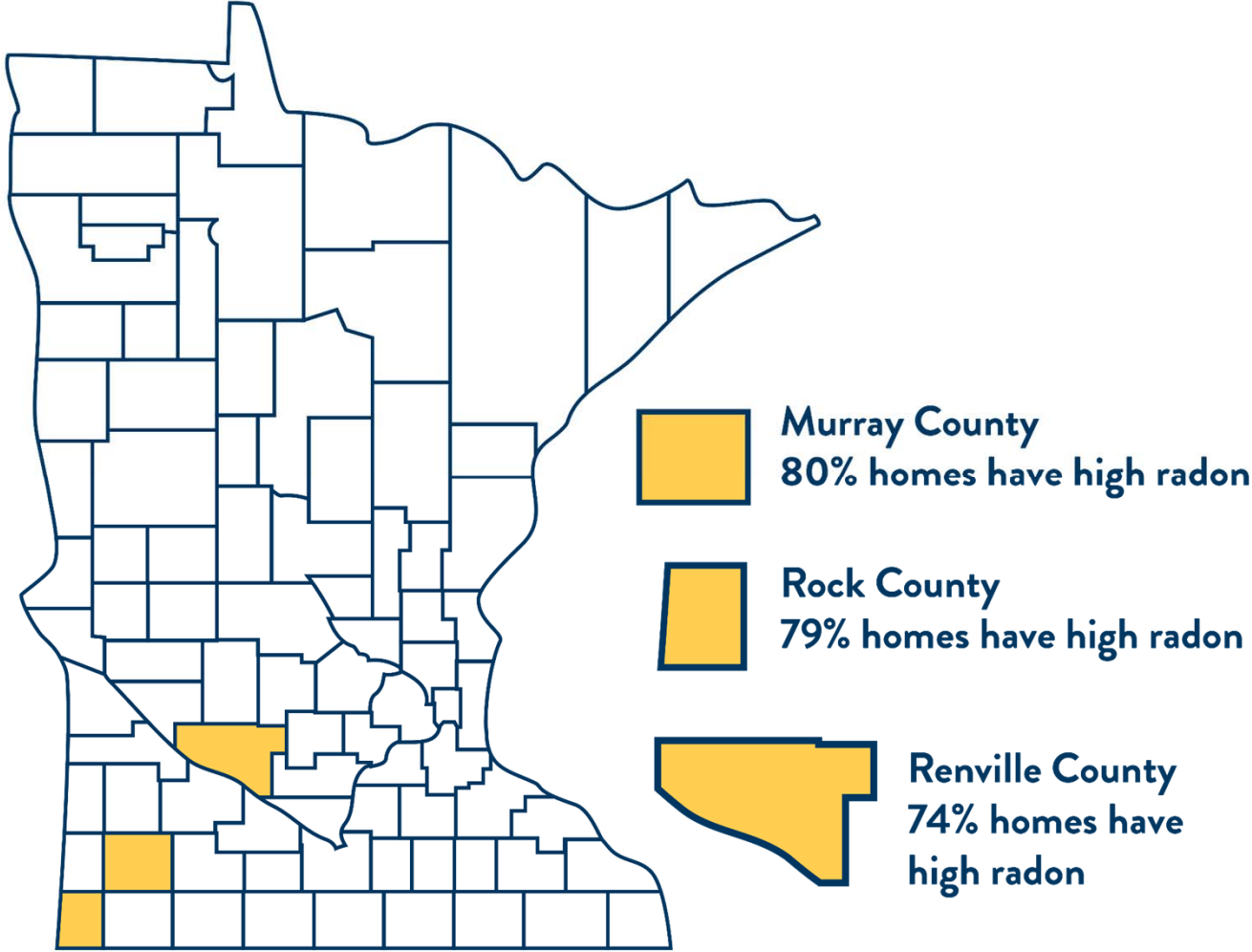
- Data include commercial and residential radon tests
- Assumes tests were done properly
- Mitigation status?
- Multiple results at one location
 - Multifamily, school, or large building
 - Multiple tests at one location
- QA/QC results (blanks, spikes, duplicates)

Cleaning the Data – Multiple tests at one location

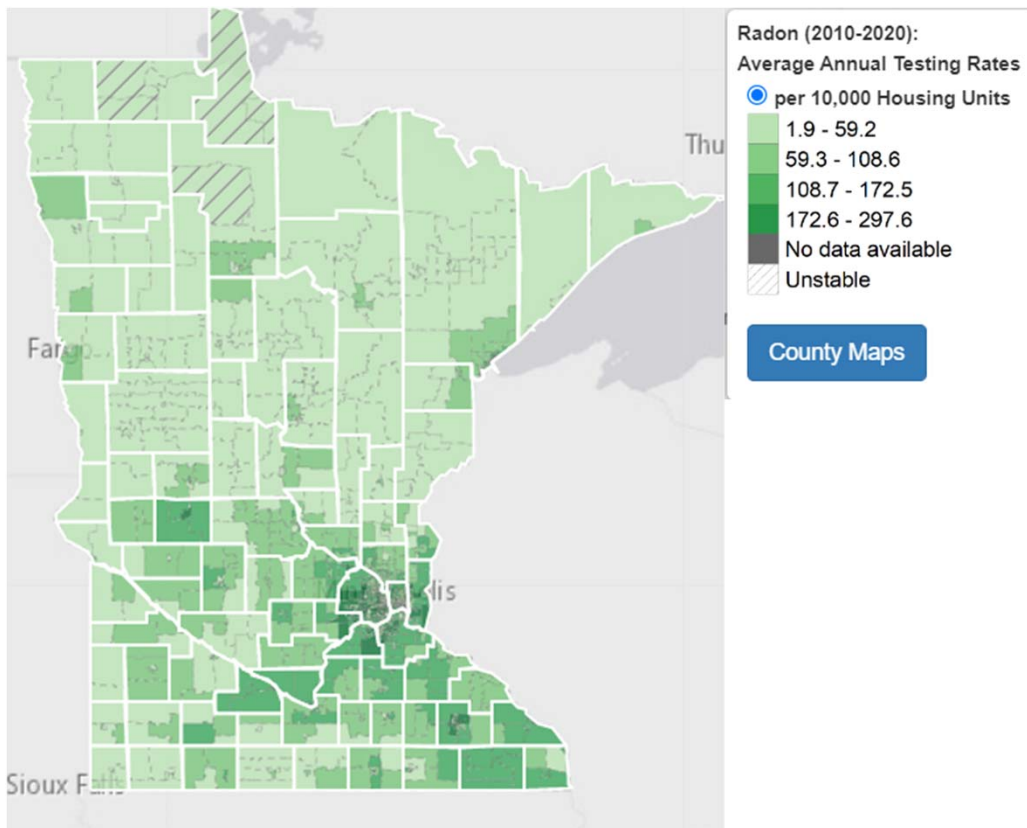
- If the purpose of the indicator was to get a count of the number of properties that tested for radon, then only one test was counted for each latitude/longitude.
- If the purpose of the indicator was to calculate a statistic (mean, median, 95th percentile) then the tests were averaged at the latitude/longitude level before the statistic was calculated at the county level.
- If the purpose of the indicator was to get the count and percent of properties tested ≥ 2 and ≥ 4 then the maximum value per latitude/longitude was selected.

**Percent of Properties
above 4 pCi/L**

**Top 3
Counties**



Testing Rates Vary Across State



- Average Annual Properties Tested (lab analyzed): per 10,000 housing units
- Overall about 1.5 % tested per year
 - Goal: 20%

How the data is used

- Planning, outreach, research, and evaluation
- Inform which Minnesota counties should be targeted for increased radon awareness and testing efforts
- Evaluate radon testing rates and program outcomes
- Educate the public about the health effects from radon exposure

What the Data Can't Tell Us

- What the radon level is in your home/school/office

7 County Metro Area Radon Disparities

Minnesota Metro Radon Disparities

[Return to MN Public Health Data Access](#)



Metro Radon Testing

Metro Radon Mitigation

Median Home Value

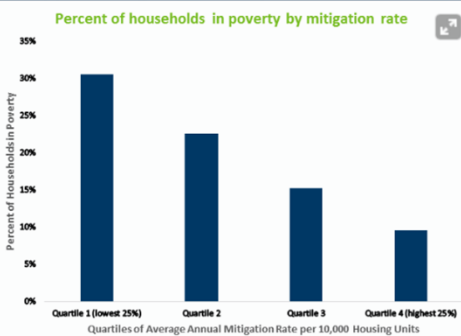
Percent of Rentals

Percent of Households in Poverty

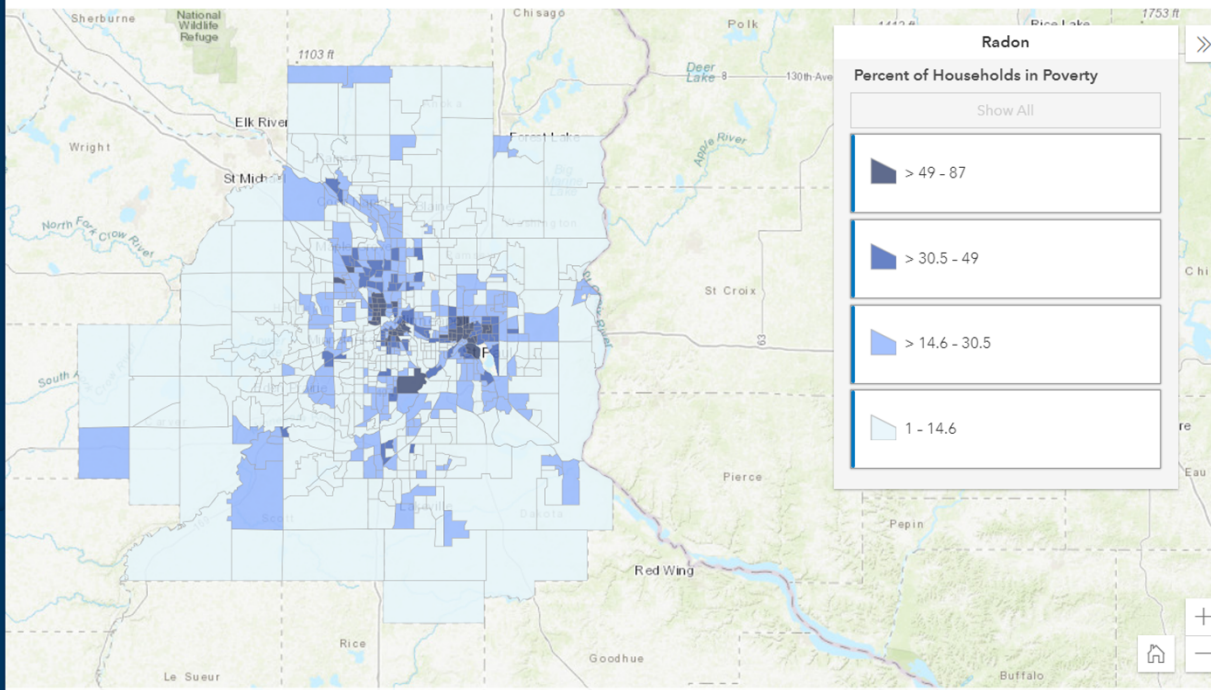
Learn More

Differences by poverty rate

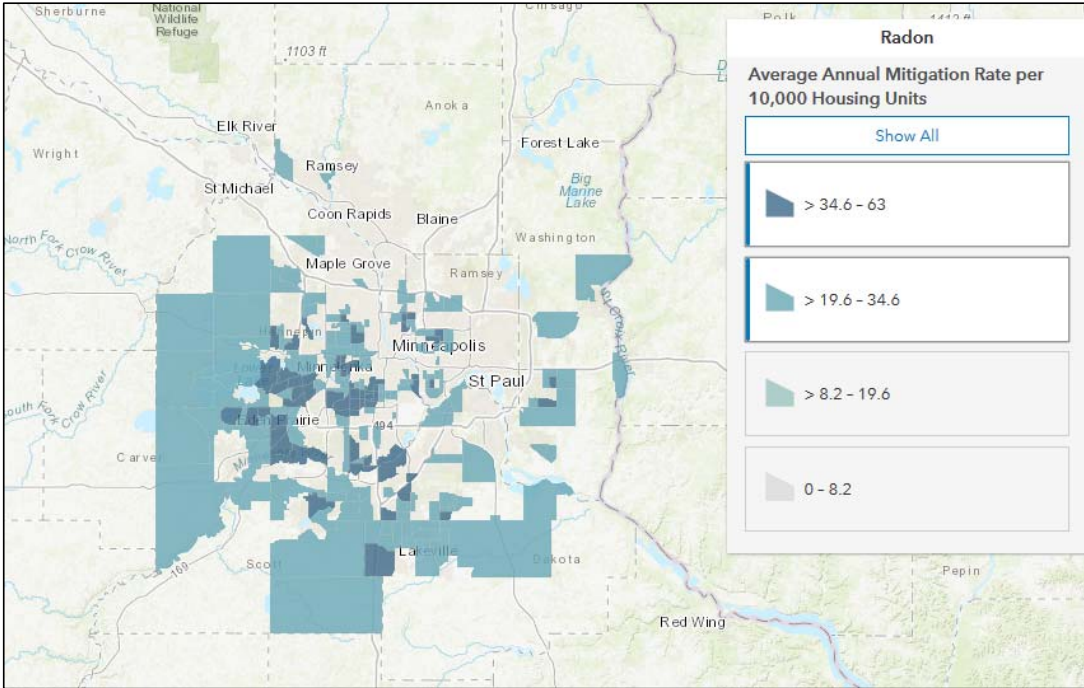
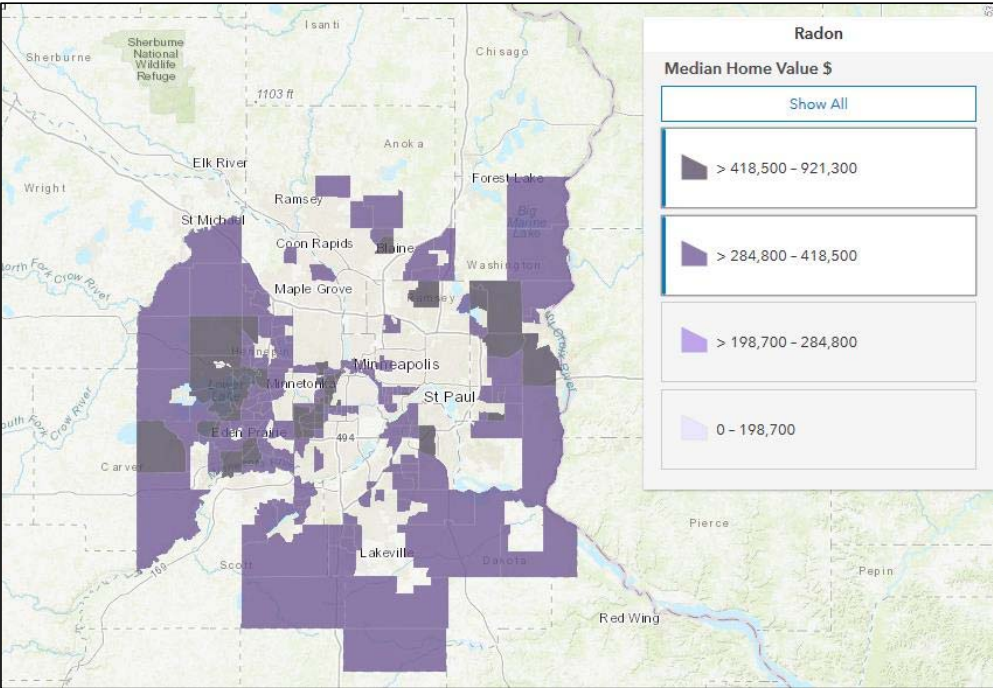
- There are three times more households in poverty in the areas with the lowest mitigation as compared to the high mitigation areas.
- In the metro area, the areas with the lowest mitigation rate, there was an average of 31% of households living in poverty and in areas with the highest mitigation rate, there was an average of 10% living in poverty.



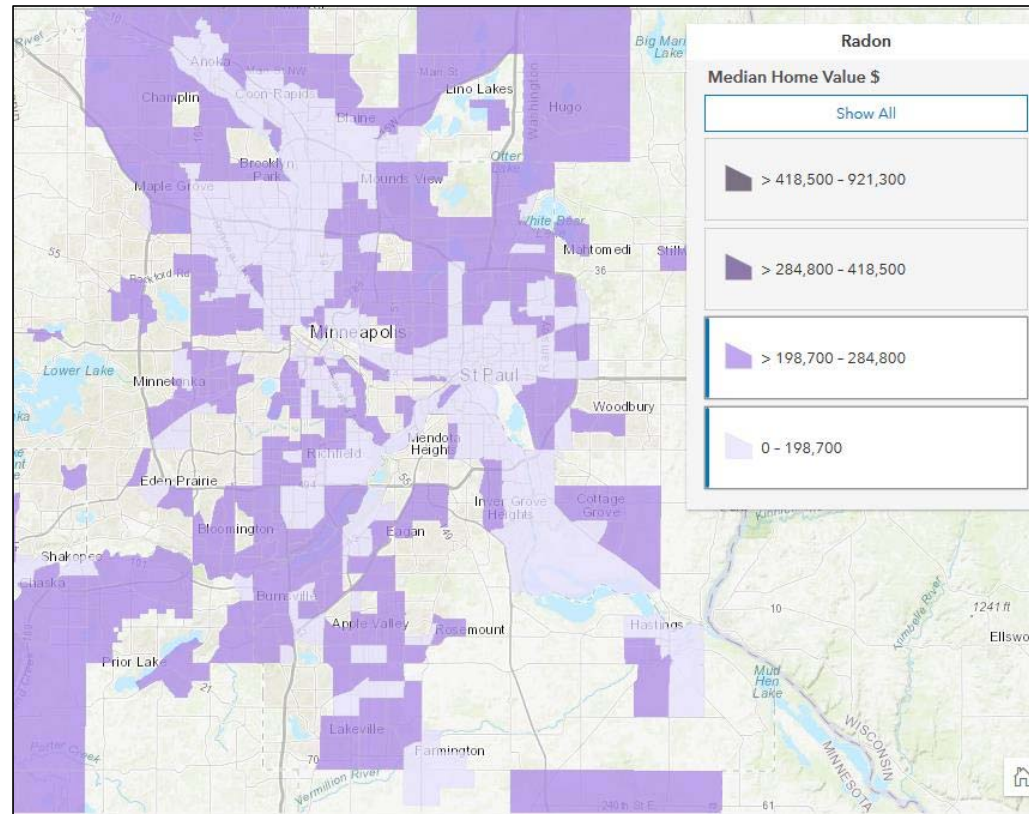
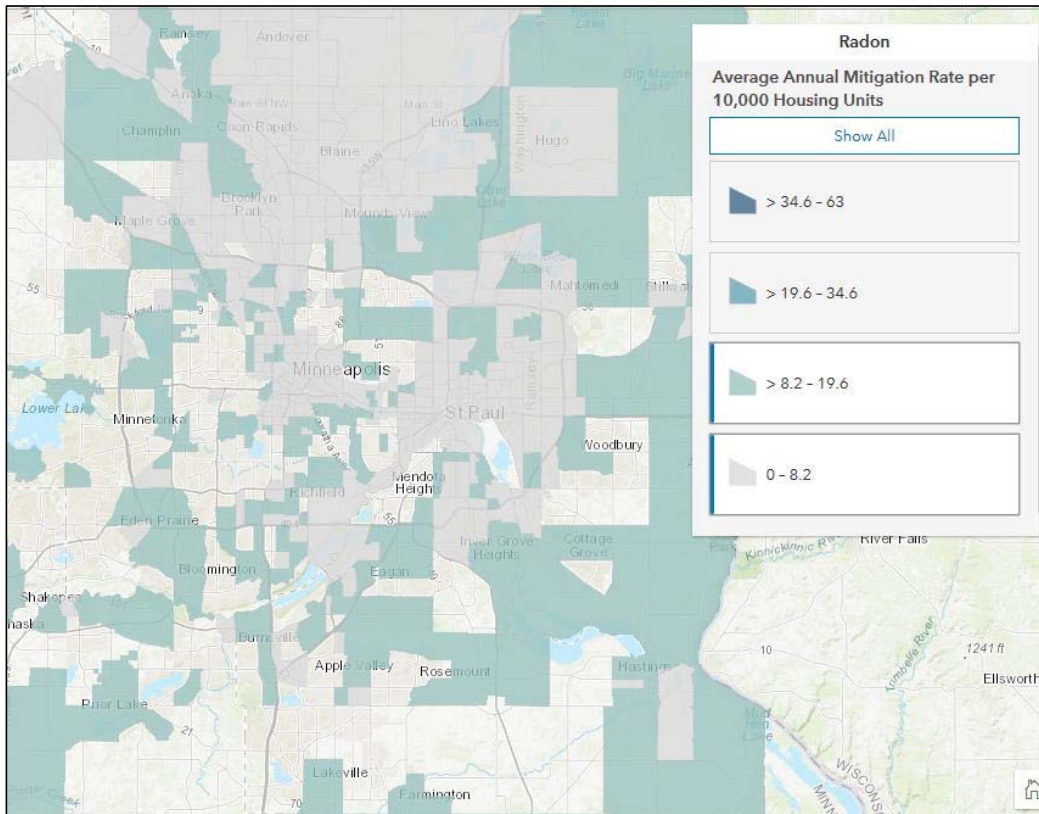
This chart displays quartiles of mitigation rate by the percent of



Median Home Values vs. Mitigation Rates (High)



Median Home Values vs. Mitigation Rates (Low)



Mapping Radon Disparities – Results

- Testing rates are lowest in the urban core tracts of Minneapolis and St. Paul and highest in the western suburbs of Hennepin and Carver Counties
- There is more radon mitigation in the western and southern tracts and less mitigation in the urban core
- Metro mitigation rates are greater in areas with higher median home value
- Metro mitigation rates were lower in areas with higher proportion of rental housing
- Three times more households in poverty in the areas with the lowest mitigation

School Project

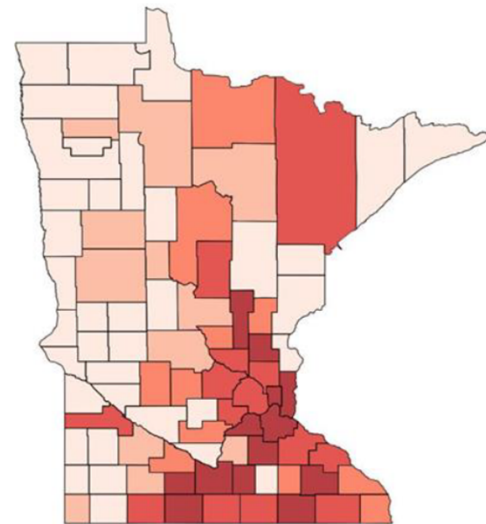
- Public Schools (includes charters): 2018-2022
 - 39% of schools had at least one room tested for radon.
 - 25% of school districts had at least one school tested for radon.
 - 16% of schools tested had elevated radon levels (130 schools).



School Project

Public school radon testing is not evenly distributed across Minnesota

- 37 counties, mostly in western Minnesota, had zero school districts that tested for radon.
- Counties in the metro, south central, and southeast area had a higher percentage of school districts that tested for radon.
- **Nearly half (49%)** of school districts that did test had at least one elevated test.
- Of schools that were tested, **(16%, n=130)** had elevated radon above the Environmental Protection Agency action level in at least one room.



Percent of schools tested in each county

□ No testing □ 1-22.1% □ 22.2-33.2% □ 33.3-52.0% □ 52.1-76.9%

Map data: Radon school test data from 2018-2022

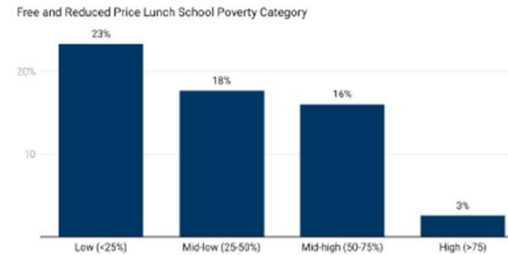
Source: Minnesota Department of Health

School Project

Public school districts with a higher proportion of low-income students were less likely to test for radon

- School districts with the most students eligible for Free and Reduced-Price Lunch (FRPL) tested an average of **20% fewer** schools in the district for radon than school districts with the fewest students eligible for FRPL.
- Charter schools proportionally had more students who qualify for FRPL than independent schools.

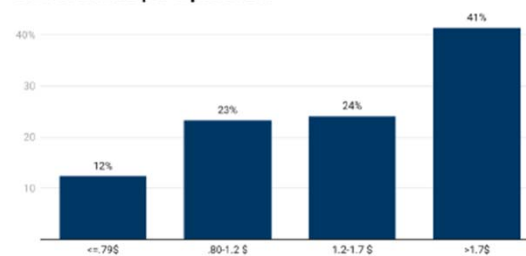
Average percent school districts tested for radon by school district poverty levels



Created with Datawrapper

Public school districts with less facility funding were less likely to test for radon

Average percent of school districts tested for radon by school dollars per square feet



Created with Datawrapper

- School districts in the highest funding category had an average of **29% more** schools per district tested for radon than the lowest funding category.
- The Long-Term Facilities Maintenance Program (LTFM) can be used for radon testing and mitigation. LTFM funding is based on the number of students, school building square footage, and other factors; funding amounts vary between school districts.

HUD Departmental Radon Policy

- On January 11, 2024, HUD published its departmentwide radon policy notice, Departmental Policy for Addressing Radon in the Environmental Review Process
- With the Notice, HUD is addressing the risk of residential radon exposure across the entire Department for the first time
- The policy falls under HUD's contamination regulations at 24 CFR 50.3(i) & 58.5(i)(2), part of the environmental (NEPA) review of proposed HUD-supported projects.
- The Policy requires consideration of radon gas in HUD projects subject to HUD contamination regulations

HUD Radon Policy

- The policy encourages the testing of radon as the most effective means by which site-specific levels of radon can be identified, though the policy does not require testing.
- This policy serves as an initial step toward advancing radon awareness and mitigation of the hazard in HUD-assisted housing nationwide.
- Radon testing is *not* required, but mitigation is required if the method used to consider radon shows levels at 4.0 pCi/L or greater

HUD Radon Policy

- Implementation date of **April 11, 2024** for all non-tribal and recipients, and **January 11, 2026** for all Tribe, Tribally Designated Housing Entity (TDHE), and Department of Hawaiian Homeland (DHHL) recipients
 - On these dates, responsible entities (REs) and HUD staff *must* consider radon as part of any non-tiered environmental review (ER) that is not yet certified, regardless of where they are in the ER process

HUD Radon Policy

- Tiered reviews:
 - For tier 1 and tier 2 reviews completed prior to the effective date: HUD strongly recommends compliance with the policy for any in-progress and new tier 2 reviews, but do not require it
 - For tier 1 reviews in-progress during or started after the effective date: you ***must*** comply with the policy for the tier 1 and all subsequent tier 2 reviews

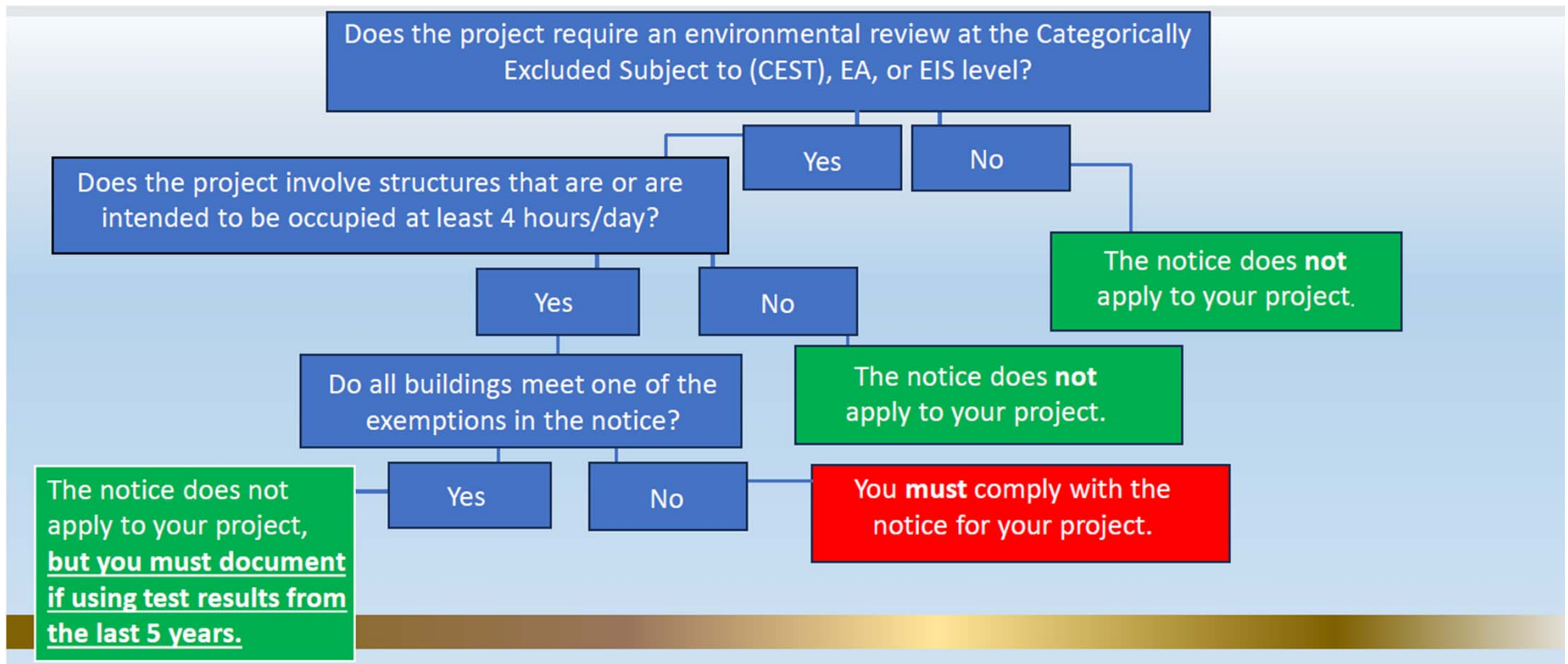
HUD Radon Policy

- This radon policy does not preempt any existing, federal state, or local requirements regarding radon
- It also does not preempt the radon requirements found in HUD's Office of Housing programs following the Multifamily Accelerated Processing (MAP) Guide, Healthcare Mortgage Insurance Program Handbook, Rental Assistance Demonstration Program Notice and supplemental guidance, or other current or future radon guidance that is more prescriptive

Not subject to HUD Radon Policy

- Non-HUD projects: projects with no HUD nexus
- HUD projects not subject to HUD's contamination regulations:
 - Projects not subject to NEPA review (ex. issuance of single-family FHA mortgages)
- Those at the "Categorically Excluded Not Subject To" (CENST) level of review
- Buildings with no enclosed areas having ground contact; buildings that are not residential and will not be occupied for more than 4 hours per day; buildings with existing mitigation systems where radon levels are below 4 pCi/L

HUD Radon Policy



Complying with HUD Radon Policy

- **Preferred, Best Practice:** ANSI/AARST radon testing and mitigation standards
- Although testing is not required under this policy, testing is the only way to determine the radon level within a building.

Complying with HUD Radon Policy

- **Alternative strategies** that can be used (if testing not otherwise required by law/reg):
 - **Do-It-Yourself (DIY) Testing:** Use of individual DIY home radon test kits
 - ~~Continuous Radon Monitoring Devices: for use by trained local government staff in remote areas~~
 - Review of science-based data on radon in the area where the project site is located: state/tribal geologic data, CDC radon test data

Complying with HUD Radon Policy

- If use of any of the methods determines that indoor radon levels are or may be above 4 pCi/L, then the responsible entity must document and implement a mitigation plan.

Complying with HUD Radon Policy

- The mitigation plan must:
 - identify the radon level
 - describe the radon reduction system that will be installed
 - establish an ongoing maintenance plan
 - establish a reasonable timeframe for implementation
 - require post-installation testing by a licensed radon professional, where feasible

Do-it-Yourself Testing

- In Minnesota, only allowed by the individual who owns or leases the building
- Test kits should be approved by NRPP or NRSB
 - <https://nrpp.info/nrpp-approved-labs/>
 - <https://nrsb.org/devices/accredited-laboratories/>
- All manufacturer instructions should be followed precisely
- Short-term test kits are typically 2 – 7 days

Review of Science-Based Data

- This alternative option involves the use of available science-based data to determine whether the project site is located in an area that has average documented radon levels at or above 4.0 pCi/L
- This will often be done by examining documented mean average pre-mitigation radon test results from reputable sources, such as state radon test databases, and the Center for Disease Control's (CDC) National Environmental Public Health Tracking Radon Test Data (CDC Data)
- Other sources include State/Tribe-generated radon information, such as surveys of radon levels from collecting radon measurement data or geological studies that identify high risk area

Review of Science-Based Data

- Data used must correspond to the smallest geographic area for which the minimum amount of documented test results exist
 - Often, data, such as documented test results, will be shown at the county level, which is the largest level one must look at data
- Data used must be the best available data must be used, which is the most current data that best indicates the level of radon concentration at a project site and comes from the best source.
 - For example, if using CDC data, utilize data from states, rather than labs, whenever possible
 - Use the latest 10 years of radon testing results for a project area, if using this type of data

Review of Science-Based Data

- The average radon level ascertained from this review is then assumed to be the level within any particular building(s) that are part of your HUD project, if no testing is done
 - **Therefore, if the review shows levels at or above 4.0 pCi/L, then mitigation must be performed**
- If there are less than 10 documented test results over the previous 10 years for which data is available in a given county and there is no other available science-based data, then there is a “lack of scientific data” In this case, no further consideration of radon is needed if testing is infeasible or impracticable

Review of Science-Based Data

Additionally, testing data utilized should cover the smallest geographic area for which the minimum amount of documented test results exist, up in size to the county in which the project is located. The best available data must be used. Best available data refers to the most current data that best indicates the level of radon concentration at a project site. Whenever possible, utilize the average of the previous 10 years of data.

Minnesota Data

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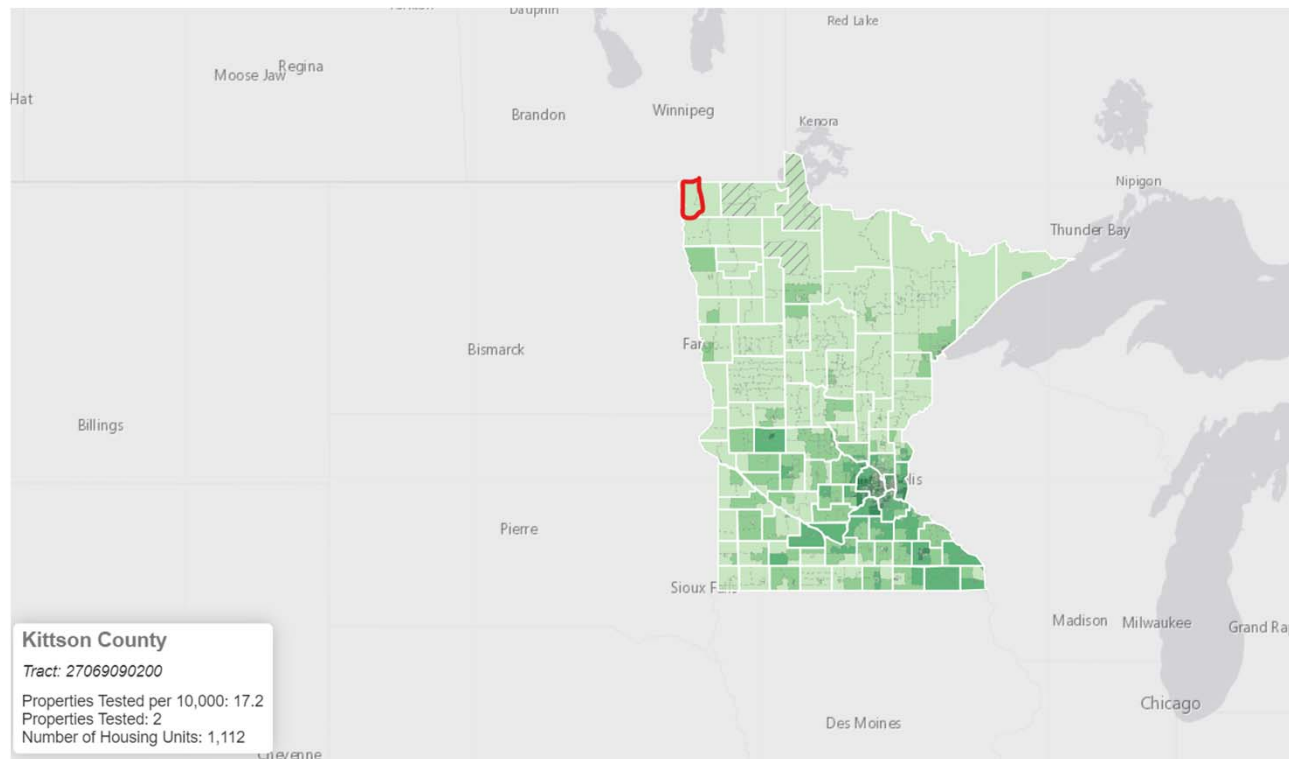
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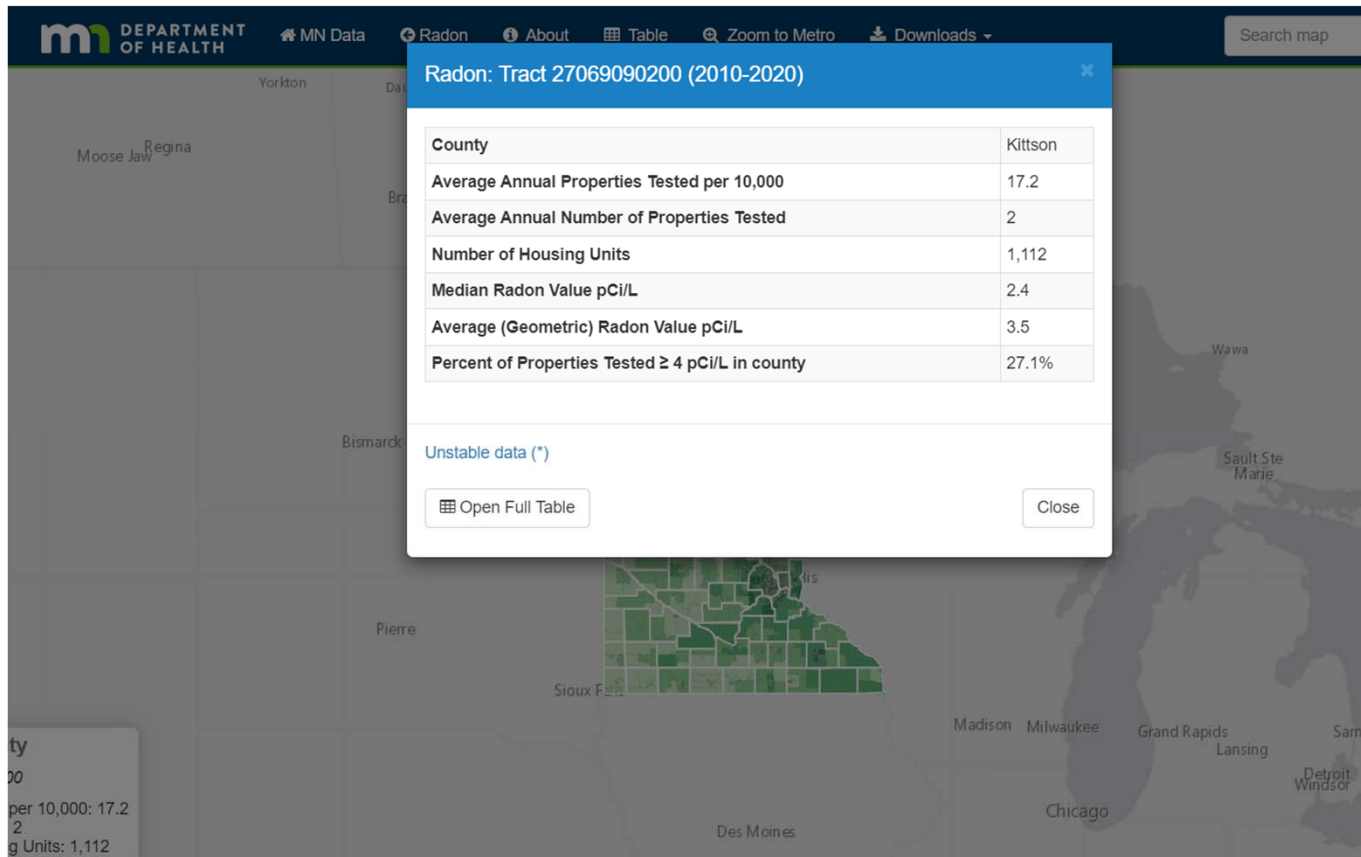
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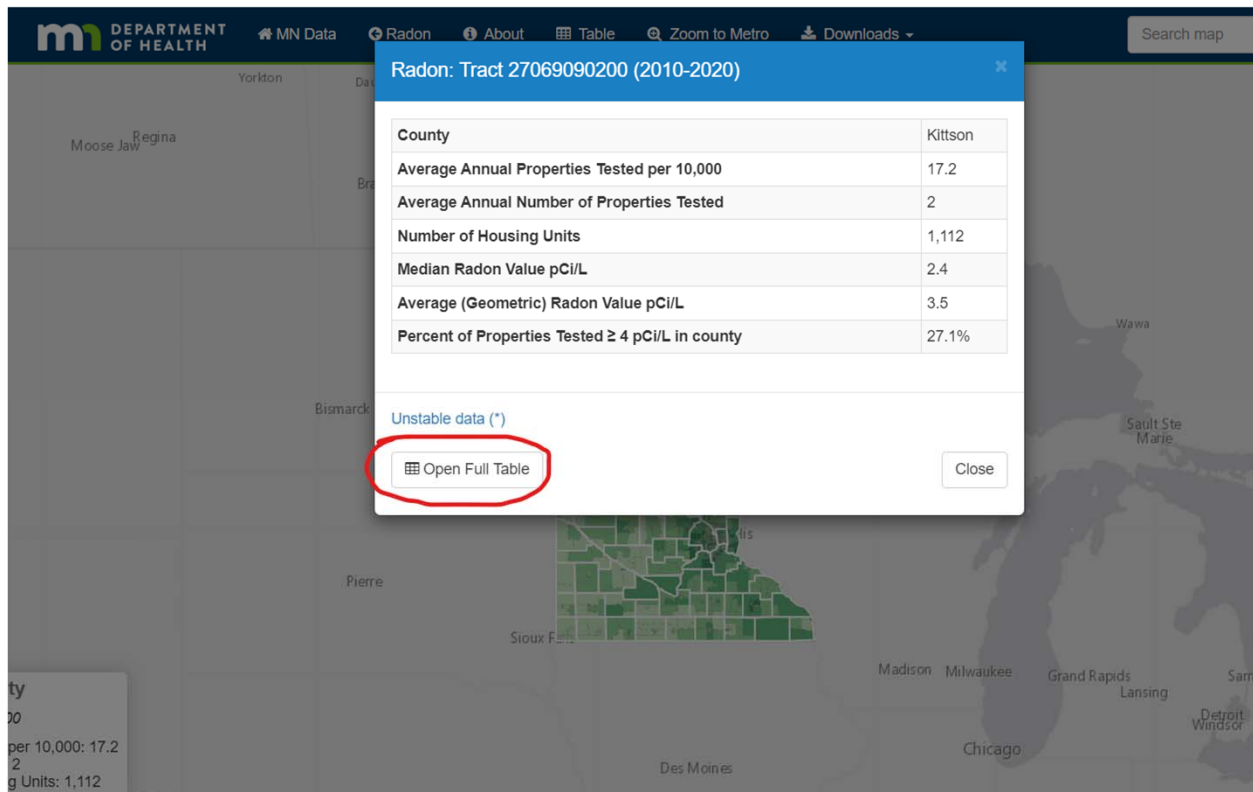
Minnesota Data



Minnesota Data



Minnesota Data



Minnesota Data

mndatamaps.web.health.state.mn.us/interactive/radontract.html

DEPARTMENT MN Data Radon About Table Zoom to Metro Downloads Search map

Table: Radon (2010-2020)

Annual Number of Properties Tested	Number of Housing Units	Median Radon Value pCi/LN	Average (Geometric) Radon Value pCi/L	Percent of Properties Tested \geq 4 pCi/L in county
	2,438,203	3.1	2.8	40.3%

kittson

County	Census Tract	Average Annual Properties Tested per 10,000	Average Annual Number of Properties Tested	Number of Housing Units	Median Radon Value pCi/LN	Average (Geometric) Radon Value pCi/L
Kittson	27069090100	12.7	2.0	1,498	2.0	1.8
Kittson	27069090200	17.2	2.0	1,112	2.4	3.5

Showing 1 to 2 of 2 rows

Unstable data (*)

Close

Kittson County

Tract: 27069090200

Properties Tested per 10,000: 17.2

Properties Tested: 2

Number of Housing Units: 1,112

Minnesota Data

mndatamaps.web.health.state.mn.us/interactive/radontract.html

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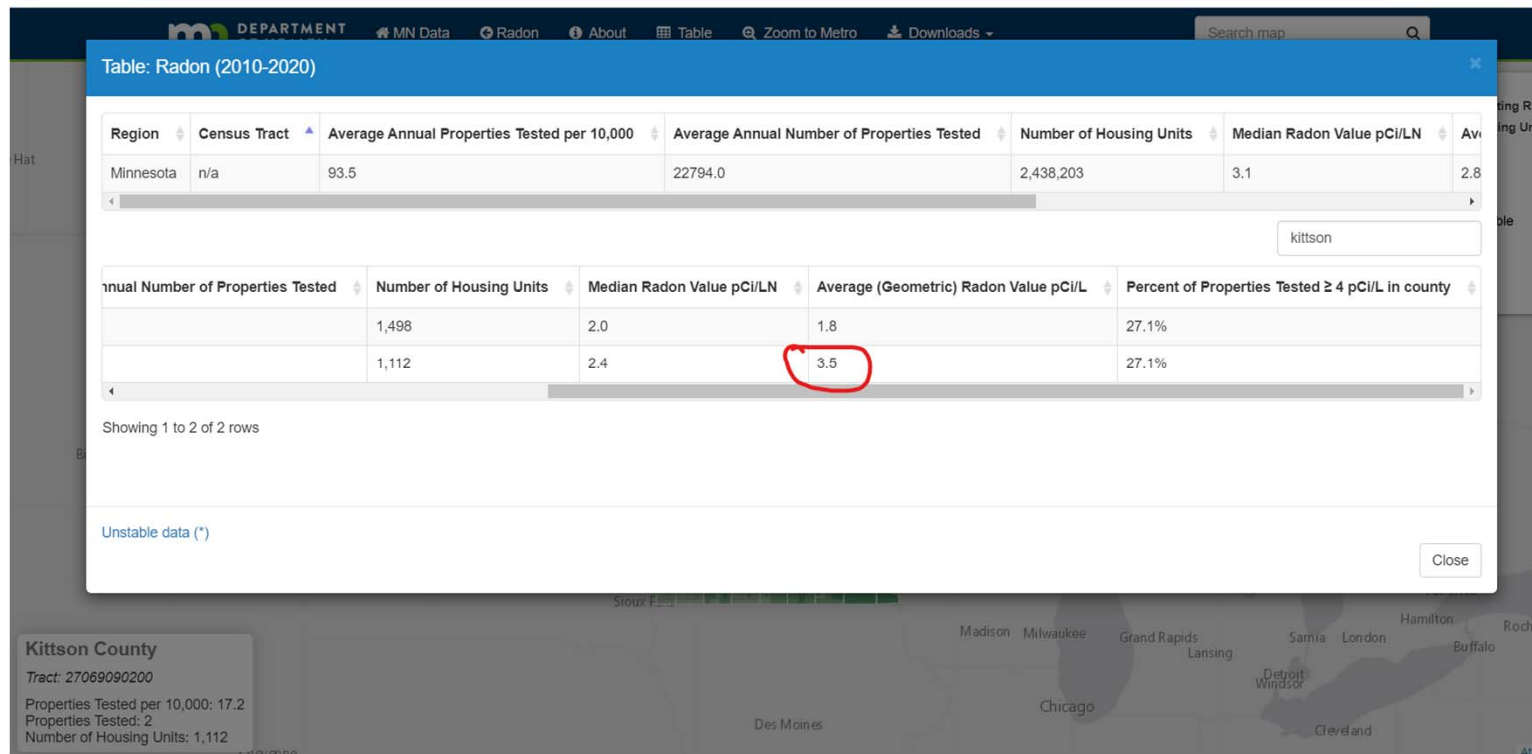
Region	Census Tract	Average Annual Properties Tested per 10,000	Average Annual Number of Properties Tested	Number of Housing Units	Median Radon Value pCi/LN	Average (Geometric) Radon Value pCi/L	Percent of Properties Tested \geq 4 pCi/L in county
Minnesota	n/a	93.5	22794.0	2,438,203	3.1	1.8	27.1%
				1,498	2.0	1.8	27.1%
				1,112	2.4	3.5	27.1%

Showing 1 to 2 of 2 rows

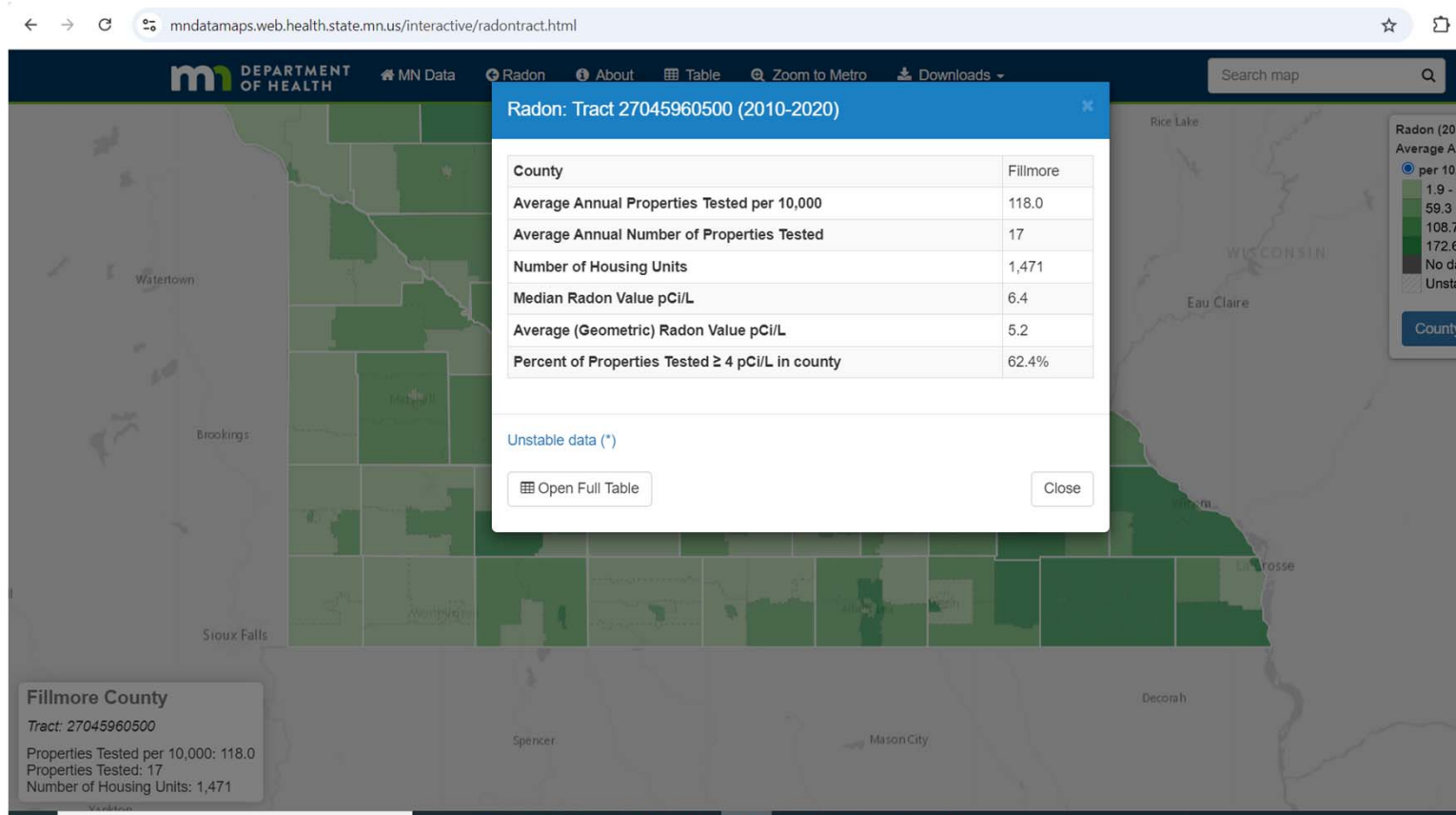
Unstable data (*)

Close

Kittson County
Tract: 27069090200
Properties Tested per 10,000: 17.2
Properties Tested: 2
Number of Housing Units: 1,112



Minnesota Data



Documentation of review

- Policy - Review of CDC radon testing data, geologic studies/maps, other scientific data: Describe and cite the maps and data used to determine the area wide radon levels and include copies of all supporting documentation (maps/studies) in the ERR.
- Presentation from HUD states
 - “Screenshots of maps from the CDC Tracking Network webpage are sufficient for ER documentation purposes”

- Search CDC Data and National Environmental Public Health Tracking Network – CDC should be one of top results

← → ↻ ephtracking.cdc.gov ☆ 📄 📌

An official website of the United States government Here's how you know

CDC National Environmental Public Health Tracking Network Search

POWERED BY TRACKING

Learn more about the Tracking Program

Better Information for Better Health

The National Environmental Public Health Tracking Network (Tracking Network) brings together health data and environmental data from national, state, and city sources and provides supporting information to make the data easier to understand. The Tracking Network has data and information on environments and hazards, health effects, and population health.

[Explore Data](#)

CDC Data

CDC National Environmental Public Health Tracking Network [Disclaimer](#)

SELECT DATA X ?

Query Panel X

STEP 1: CONTENT ? Search

Select Content Area v

Select Indicator v

Select Measure v

STEP 2: GEOGRAPHY TYPE ?

Select Geographic Type v

STEP 3: GEOGRAPHY ?

STEP 4: TIME ?

STEP 5: ADVANCED OPTIONS ?

Disclaimer

Clear Selections

GO →

México, Ciudad de México, La Habana, Cuba, República Dominicana, Kingston, The Bahamas


CDC Data

The image shows a screenshot of the CDC Query Panel interface. The panel has a blue header with the CDC logo and the text "Query Panel" on the left, and a close button (X) on the right. Below the header, the interface is divided into five steps:

- STEP 1: CONTENT** (with a help icon): Includes a "Search" input field, a dropdown menu with "Radon" selected, a dropdown menu with "Select Indicator" selected, and a dropdown menu with "Select Measure" selected.
- STEP 2: GEOGRAPHY TYPE** (with a help icon): Includes a dropdown menu with "Select Geographic Type" selected.
- STEP 3: GEOGRAPHY** (with a help icon): A large empty grey box for selecting a geographic area.
- STEP 4: TIME** (with a help icon): A large empty grey box for selecting a time range.
- STEP 5: ADVANCED OPTIONS** (with a help icon): A large empty grey box for selecting advanced options.

At the bottom of the panel, there are three buttons: "Disclaimer", "Clear Selections", and "GO →". The "GO →" button is highlighted in green. A map is partially visible at the bottom of the screen, showing "México", "La Habana", and "The Bahamas".

CDC Data

 Query Panel ✕

STEP 1: CONTENT ?

Radon ▼

Radon Tests from States ▼

Select Measure ▼

STEP 2: GEOGRAPHY TYPE ?


Select Geographic Type ▼

STEP 3: GEOGRAPHY ?

STEP 4: TIME ?

STEP 5: ADVANCED OPTIONS ?

CDC Data

 Query Panel ✕

STEP 1: CONTENT ?

▼

▼

▼


STEP 2: GEOGRAPHY TYPE ?


▼

STEP 3: GEOGRAPHY ?

STEP 4: TIME ?

STEP 5: ADVANCED OPTIONS ?


 Query Panel ✕

STEP 1: CONTENT 


Radon

Radon Tests from States


Annual Mean Pre-Mitigation Radon M

STEP 2: GEOGRAPHY TYPE 


State By County

STEP 3: GEOGRAPHY 


- Colorado
- Connecticut
- Florida
- Illinois
- Kansas
- Louisiana
- Minnesota
- Missouri
- Nebraska
- New Jersey
- New York
- North Carolina
- ...

STEP 4: TIME 

- All Years
- 2020
- 2019
- 2018
- 2017
- 2016
- 2015
- 2014
- 2013
- 2012
- 2011
- 2010

STEP 5: ADVANCED OPTIONS 

CDC Data

 Query Panel ✕

STEP 1: CONTENT ?

Radon

Radon Tests from States

Annual Mean Pre-Mitigation Radon M

STEP 2: GEOGRAPHY TYPE ?

State By County

STEP 3: GEOGRAPHY ?

- Colorado
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- North Carolina

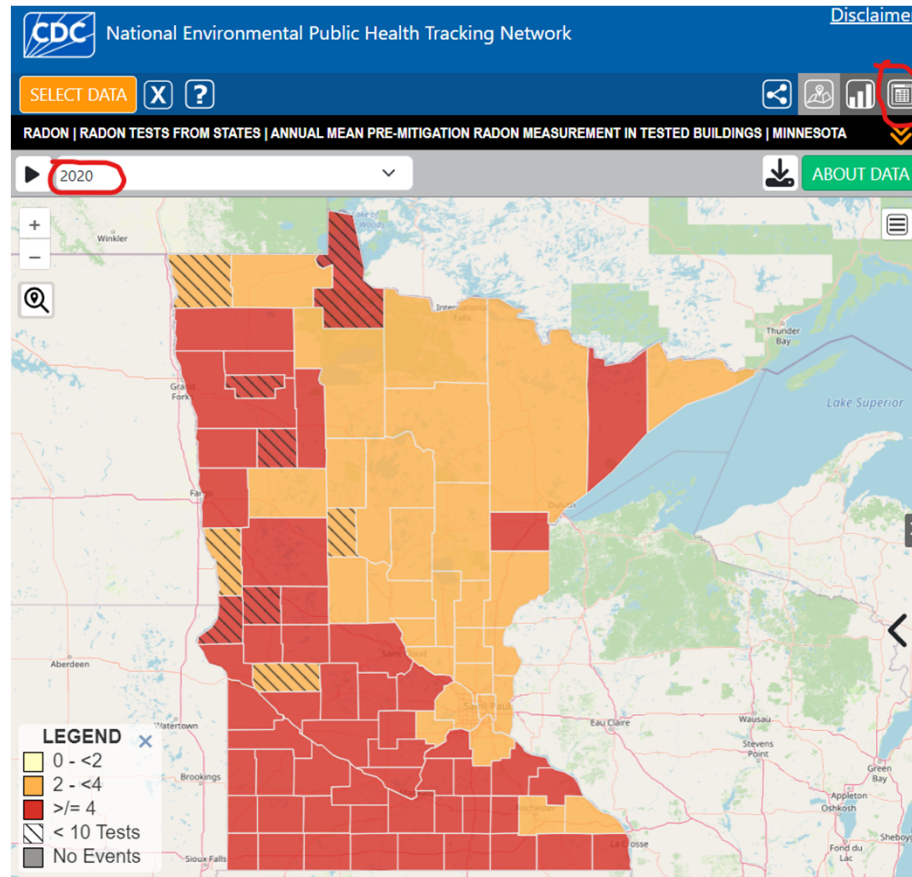
STEP 4: TIME ?

- All Years
- 2020
- 2019
- 2018
- 2017
- 2016
- 2015
- 2014
- 2013
- 2012
- 2011
- 2010

STEP 5: ADVANCED OPTIONS ?

No Advanced Options

CDC Data



CDC Data

RADON | RADON TESTS FROM STATES | ANNUAL MEAN PRE-MITIGATION RADON MEASUREMENT IN TESTED BUILDINGS | MINNESOTA

2020

ABOUT DATA

County	Average	Data Comment
Itasca	3.9	
Jackson	8.4	
Kanabec	2.8	
Kandiyohi	6.5	
Kittson	3.4	< 10 Tests
Koochiching	2.0	
Lac qui Parle	11.0	
Lake	4.5	
Lake of the Woods	8.1	< 10 Tests
Le Sueur	5.5	
Lincoln	6.6	
Lyon	5.7	
McLeod	4.0	
Mahnomen	4.9	< 10 Tests
Marshall	4.4	
Martin	8.3	
Meeker	5.3	
Mille Lacs	3.5	

HUD Policy -Mitigation

- Mitigation under the Notice functions just as other mitigation under 50.3(i) and 58.5(i) does
- If radon testing or a review of science-based data shows a radon level for a building at or above 4 pCi/L, then a mitigation plan is required
- If using a review of science-based data, however, radon testing can be done prior to initiation of mitigation to determine if mitigation is truly necessary for a building
 - If a review of science-based data shows levels at or above 4.0 pCi/L but subsequent testing shows levels in the building below 4.0, no mitigation is needed
 - By electing to test, preparers and recipients may ultimately save funds by avoiding unnecessary radon mitigation

HUD Policy - mitigation

- Mitigation plans must:
 - identify the radon level
 - consider the risk to occupants' health
 - describe the radon reduction system that will be installed
 - whenever possible, establish an ongoing maintenance plan to ensure the system is operating as intended
 - establish a reasonable timeframe for implementation
 - require post-installation testing
 - Where feasible, post-installation testing should be conducted by a licensed radon professional

HUD Policy - Documentation

- The Environmental Review Record (ERR) must document compliance with the Notice Including documentation of any test results or test value gained from a scientific data review, and, if needed, any mitigation plan
- Documentation may include ANSI/AARST testing reports, mitigation reports or plans, emails of test results from DIY test kits, emails from state radon control program staff, and more
 - Certain documentation (such as when using CDC-maintained testing data) can be completed using screenshots, like when using NEPAssist for other types of contamination

HUD Policy - Documentation

- If there is a lack of scientific data for a particular project, and an RE chooses not to conduct testing because it would be infeasible or impracticable, then the RE **must** document the lack of scientific data and “a basis for the conclusion that testing would be infeasible or impracticable”
 - To document the latter, REs must show that they assessed what it would take to test the building(s) within the property and whether that was feasible or practicable under the circumstances
 - For example, an RE may state that the cost of having a credentialed radon tester test the building was infeasible when compared with the cost of a low dollar amount project
 - No specific documents are needed to document that testing would be infeasible or impracticable

- For all questions and technical assistance on the HUD Policy Notice, please reach out to your regular HUD environmental POC.
- Find that person here:
[hud.gov/program_offices/comm_planning/environment_energy/staff](https://www.hud.gov/program_offices/comm_planning/environment_energy/staff)



Testing

Minnesota Radon Licensing Act – MN Statute 144.4961

- Effective January 1, 2019, a license is required annually for every person, firm, or corporation that performs a service for compensation to detect the presence of radon in the indoor atmosphere, performs laboratory analysis, or performs a service to mitigate radon in the indoor atmosphere.
- "Measurement professional" means any person who performs a test to determine the presence and concentration of radon in a building the person does not own or lease.
- "Mitigation professional" means an individual who installs or designs a radon mitigation system in a building the individual does not own or lease, or provides on-site supervision of radon mitigation and mitigation technicians.

RADON

- [Licensing for Radon Professionals Home](#)
- [Initial Licensing](#)
- [Requirements of Radon Licenses](#)
- [Continuing Education and License Renewal](#)
- [Forms](#)
- [Radon Licensing System](#)
- [Laws, Rules and Standards](#)

RELATED TOPICS

- [Radon in Homes](#)
- [Radon Data Portal](#)
- [Radon in Schools](#)
- [IAQ Training for Professionals](#)

ENVIRONMENTAL HEALTH DIVISION

- [EH Division Home](#)

Initial Radon Licensing

What do you need to get licensed?

All measurement and mitigation professionals need to:

- Take an approved training course(s) and pass an approved examination(s)
- Use approved testing devices
- Have a quality assurance (QA) plan
- Apply and submit a non-refundable license fee

A mitigation company applying for a license needs to provide proof of workman's compensation insurance, or a statement that workman's compensation insurance isn't required.

[Expand All](#)

- What Type of License Do I Need? ▾
- Training and Exams
- Approved Test Devices

Types of licenses and fees

- Measurement: \$150/year
- Mitigation – individual: \$250/year (includes measurement)
- Mitigation company license - \$0 - \$100
- Mitigation tags: \$75/system



MENU

I am looking for...

Home > Healthy Communities, Environment a... > Environments and Your Health > Air Quality > Radon In Homes

RADON

[Licensing for Radon Professionals Home](#)

[Initial Licensing](#)

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Initial Radon Licensing

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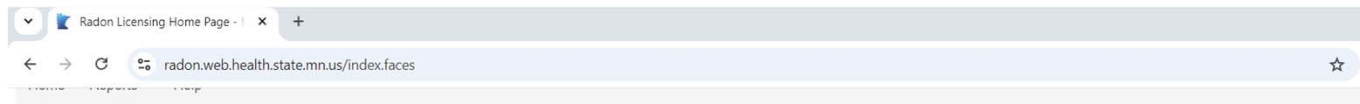
A mitigation company applying for a license needs to provide proof of workman's compensation insurance, or a statement that workman's compensation insurance isn't required.

[Expand All](#)

What Type of License Do I Need? ^

Requirements

- Initial measurement course (16 hours) and pass measurement professional/specialist exam
- Initial mitigation course (24 hours) and pass mitigation professional exam
- Have a quality assurance plan
- Approved Device
- Submit Application



Radon Licensing Home Page

Tags may take 2-3 weeks from the time of ordering until you receive them, so please plan accordingly.

To view your existing radon license applications, please log in and then select "View Applications" from the "Licenses" pull down bar above.

Make sure health.indoorair@state.mn.us is on your safe list or check your spam box to make sure you are getting emails.

If you have any questions about licensing, please email the Indoor Air Unit at health.indoorair@state.mn.us

[Log In](#) [Register Now](#)

Service Providers

[View Measurement and Mitigation Service Providers](#)

Provider Type: *

Measurement ▼

Service Type:

- Single Family Homes
- Multi Family Buildings
- Schools and Large Buildings

Your Zip Code to Limit Search:

56401

Leave blank for Statewide result.

Search

Professional ↑↓	Company Name ↑↓	Address ↑↓	Services Provided	Service Area
Grant Chapa - RMEA-00039 (763) 315-7900	Institute for Environmental Assessment	601 NW 5th Street, Suite #4 Brainerd, MN 56401	Single Family Measurement Multi Family Measurement Schools & Large Buildings Measurement	Statewide
Tony Klaers - RMEA-00313 (320) 309-6275	Healthy Homes healthyhomesradon.com	3242 Sleepy Hollow Rd Fort Ripley, MN 56449	Single Family Measurement Multi Family Measurement	Statewide
Brian Delmore - RMITS-00037 (218) 429-1421	Professional House Doctors of MN LLC www.theradondoctors.com	22680 Agate Shores Rd Deerwood, MN 56444	Single Family Mitigation Single Family Measurement	100 miles
Kyle Holm - RMEA-00342 (218) 825-7372	HomeTeam Inspection Service https://www.hometeam.com/lakesarea	34043 W. Clear Lake Rd Pequot Lakes, MN 56472	Single Family Measurement	50 miles

MN Rule 4620.7500 Incorporation by Reference

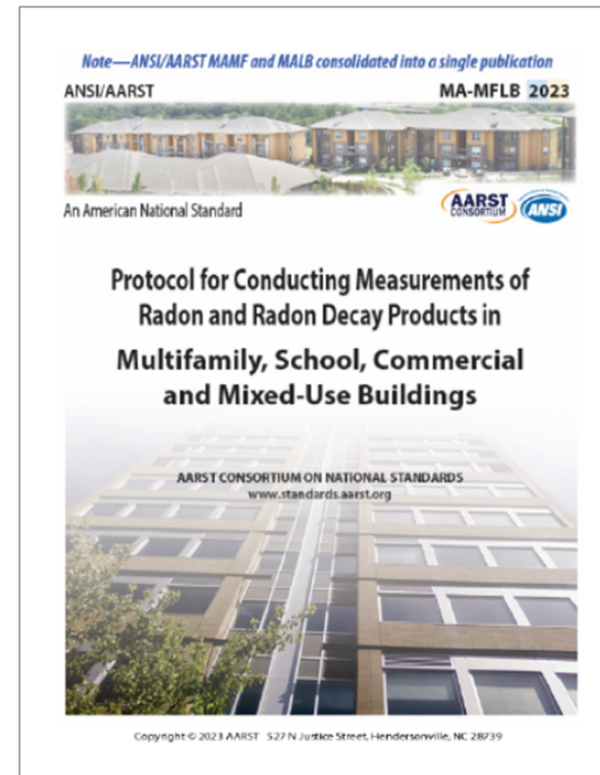
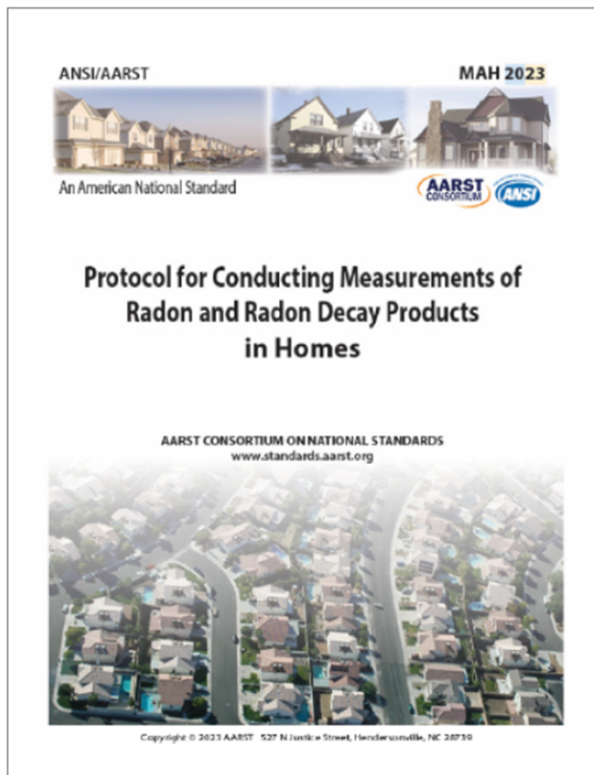
- Radon measurement professionals and radon mitigation professionals measuring radon in single-family residences must:
 - comply with ANSI/AARST Protocol for Conducting Measurements of Radon and Radon Decay Products in Homes (ANSI/AARST MAH-2014) or successor ANSI/AARST standards; and
 - test each unique foundation type.
- Radon measurement professionals and radon mitigation professionals measuring radon in multifamily buildings must comply with ANSI/AARST Standard: Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings (ANSI/AARST MAMF-2017) or successor ANSI/AARST standards.
- Radon measurement professionals and radon mitigation professionals measuring radon in schools and large buildings must comply with ANSI/AARST Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings (ANSI/AARST MALB-2014) or successor ANSI/AARST standards.
- Radon measurement device performance requirements are the ANSI/AARST Performance Specifications for Instrumentation Systems Designed to Measure Radon Gas in Air (ANSI/AARST MS-PC-2015) or successor ANSI/AARST standards.

ANSI/AARST Standards

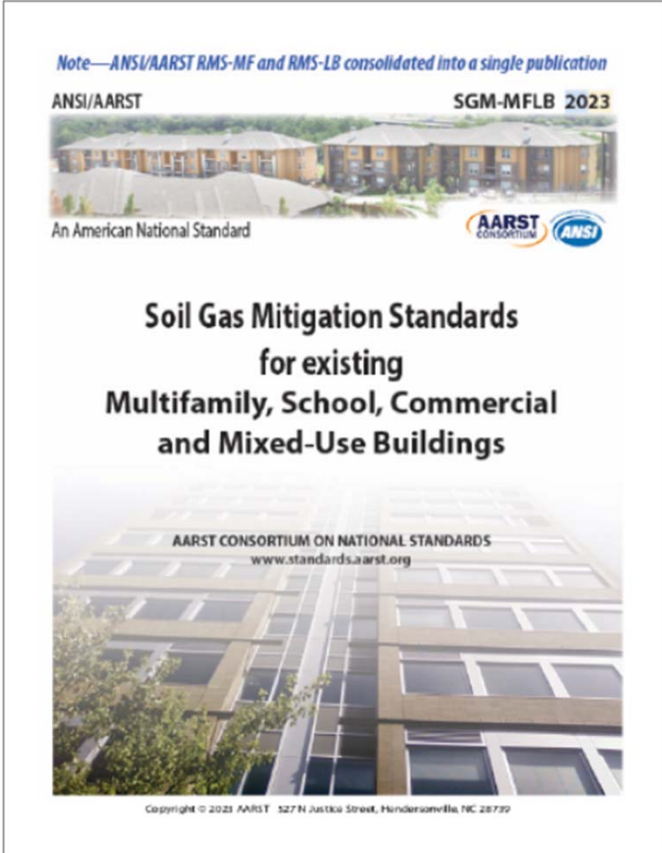
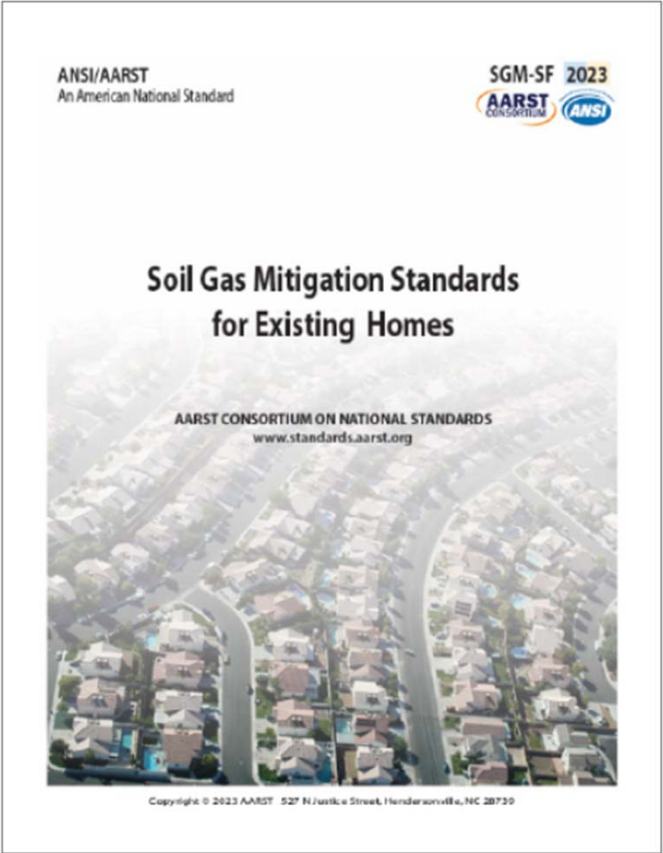
- Key stakeholder groups, including analytical laboratories, federal and state regulators, radon measurement and mitigation contractors, product manufacturers, training organizations, scientists and academia, and environmental consultants, have developed and continue to maintain standards through participation on multiple committees
- Can be viewed for free at: <https://standards.aarst.org/>
- Give input on proposed standards changes: <https://standards.aarst.org/public-review/>



Measurement Standards



Mitigation Standards



Consumer Digital Monitors

- Becoming more common
- \$100-200
- Many are not approved by NRPP
- Concerns
 - Not calibrated
 - Accuracy over time?
- Should not be used for decisions to mitigate or not, or clear mitigation
- Could be used as a second 'tool' in addition to approved devices



Who should test?

- Licensed radon measurement professional recommended
- Owner/renter can test without license (residences)
 - Test kits available:
 - Laboratories (mn.radon.com: \$12.95)
 - County health departments
 - Hardware stores

General Home Testing Process




Initial short-term test

Result (pCi/L)	Action
0 – 1.9	Retest every 2 to 5 years with a short-term test
2 – 8	Perform a follow-up long-term test
Greater than 8	Perform a follow-up short-term test



Second test

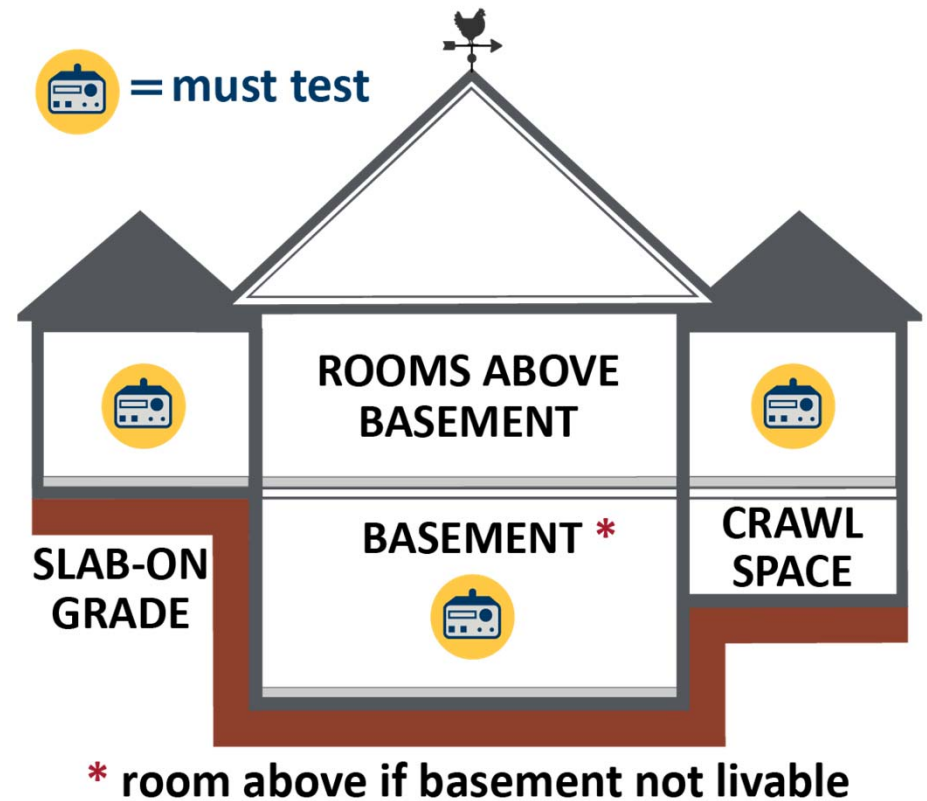
(either short or long-term test)

Result (pCi/L)	Action
0 – 1.9 	Retest every 2 to 5 years*
2 – 3.9 	Consider a radon mitigation system
4 or greater 	Highly recommend a radon mitigation system

* If the initial test was 8 pCi/L or above, consider performing a long-term test.

Single Family: Rooms to test

- General
 - test lowest “lived-in” (~10 hrs per week)
- Real estate transactions
 - test lowest “livable” area(s), usually basement (finished or not)
- Licensed professionals must test for each foundation



Time sensitive (e.g., real estate) Simultaneous Testing

- 2 short-term tests placed side by side
 - 4-8 inches apart
 - 48 hour minimum
 - Sent in for lab analysis
 - Average two tests to determine next step



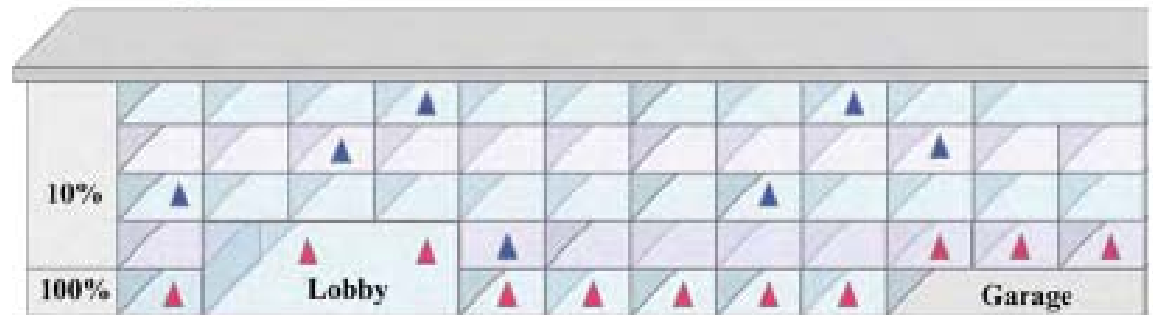
Time sensitive (e.g., real estate) Continuous Radon Monitor Testing

- Hourly readings or more frequently
- Professionally conducted
- Fastest
- Device must be calibrated annually
- 48 hour minimum
- Tamper detection features
- Use average result

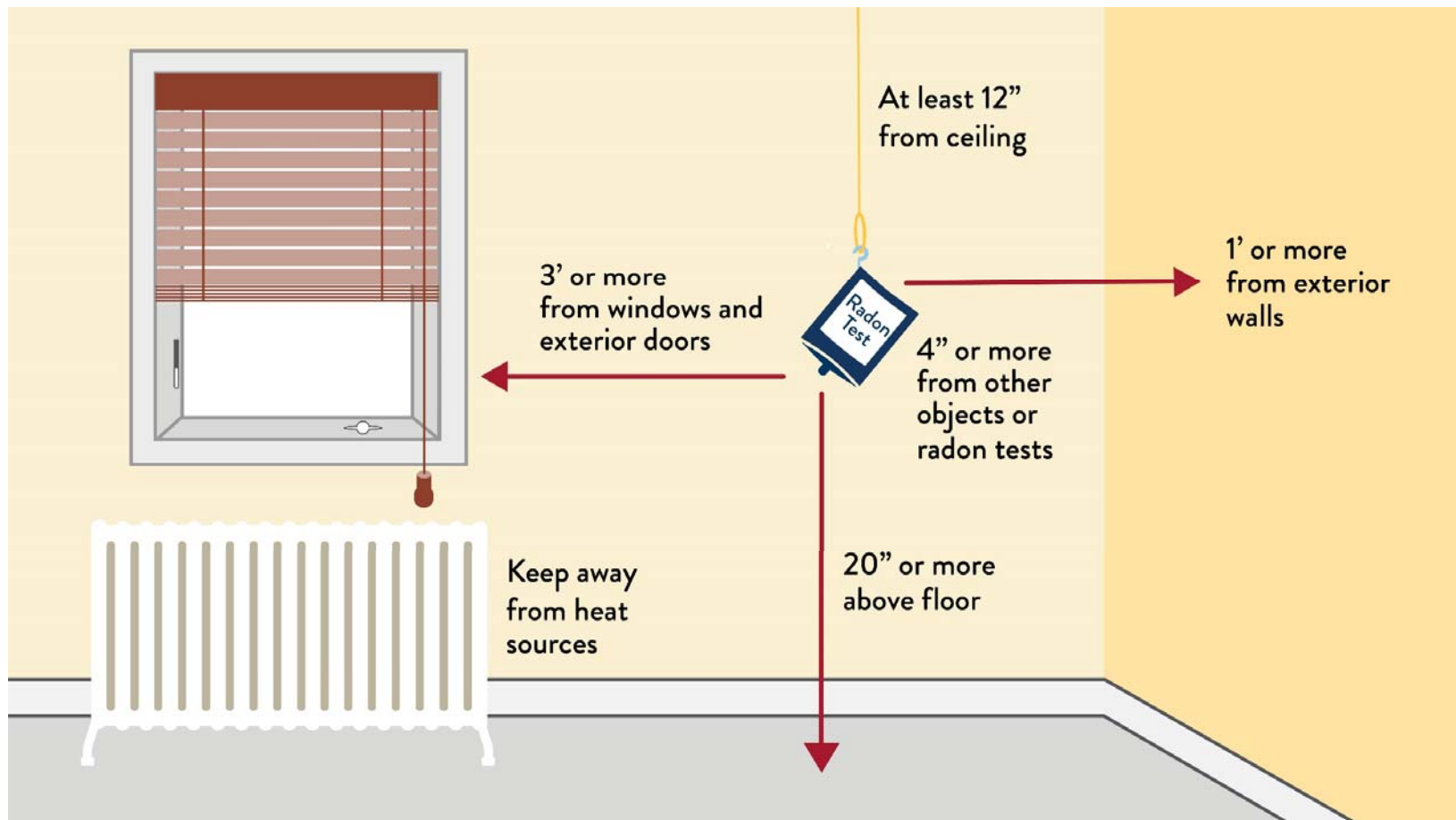


Multi-Family: Where to test

- Test all ground contact units
 - Floor/walls contact ground
 - Above crawl space, utility tunnel, parking, other non-habitable space
- Test 10% on upper floors
- A sample of rooms will likely miss a problem room



Location in room



Closed House Conditions (short tests)

- Exterior doors and windows closed (except normal entry/exit)
- House closed 12 hours prior to the start of the test
- Temperature set to 65-80 F
- HRV/ERV set to lowest ventilation condition
- Whole house fans not operated
- Fireplaces not operated (unless they are the primary and normal heating sources)
- No excessive use of clothes dryers, kitchen exhaust fans, and bathroom fans.
- No tampering, removal or change in the location of the test device(s).

Closed House Conditions (short tests)

All openings to the exterior (due to incomplete construction, structural defect or disrepair)	These opening to the exterior shall be closed or sealed at least 12 hours prior to initiating the test
Heating/cooling systems active and set to a normal occupied temperature	These items shall be completed or installed at least 12 hours prior to initiating the test
All windows and exterior doors installed with hardware and seals	
All insulation and exterior siding	
All wall and ceiling coverings to be completed including interior drywall or paneling; does not include decorative finishing of walls, floors or ceilings	
All fireplaces and fireplace dampers installed	

Windows and Doors	
Broken windows or doors	Seal closed
Interior partition or stairway doors	No special requirements
Doors leading into a garage	Keep closed (except for momentary entry and exit).
Garage doors	
Pet doors (includes flap openings)	
Small Appliances	
Ceiling fans and portable fans	Do not blow fans directly towards testing devices
Window fans	Remove or seal shut and do not operate
Humidifiers and dehumidifiers	Operate normally
Central vacuum cleaner systems	
Crawl Spaces	
Passive crawl space vents	The condition should reflect average yearlong operation
Crawl space humidity control systems	Operate normally

Mechanical Systems	
Passive vents for combustion air makeup	Leave open
Fireplace dampers	Close dampers or doors if practicable
Combustion appliance fans	Operate normally
Fans installed in attics to ventilate only attic air and not air within the building.	
Return air ducts from forced air heating and/or cooling systems are under concrete floors	Conduct at least one test when air handlers are active
Mechanical Ventilation Systems that can temporarily ventilate with outdoor air for seasonal comfort or energy savings	
Window air conditioners	Operate in recirculation mode only
Evaporative cooling systems (e.g., swamp coolers)	Do not operate and do not cover
Energy recovery or heat recovery ventilators	Operation of permanently installed ventilation systems that bring outdoor air into the home throughout the year is permitted to continue during the test so long as: <ul style="list-style-type: none"> a) the system is set to the lowest ventilation condition that occurs for any season, and b) all thermostats in the building are set to normal occupiable temperatures.

Resources

Radon Forms - MN Dept. of He

health.state.mn.us/communities/environment/air/radon/radonforms.html

Home > Healthy Communities, Environment a... > Environments and Your Health > Air Quality > Radon In Homes

RADON

- [Licensing for Radon Professionals Home](#)
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RELATED TOPICS

- [Radon in Homes](#)
- [Radon Data Portal](#)
- [Radon in Schools](#)
- [IAQ Training for Professionals](#)

ENVIRONMENTAL HEALTH DIVISION

- [EH Division Home](#)

Forms

Quality Assurance (QA) Plan

- [MDH Standard QA Plan \(PDF\)](#)
- [MDH QA Plan Adoption Form \(PDF\)](#)
- [QA Plan Control Log and Charts \(Excel\)](#)

Test and notification reports: Single Family

- [Radon Test Report \(PDF\)](#)
- [Radon Test Report \(Passive Test Kits\) \(PDF\)](#)
- [Report Addendum: Multiple Tests \(PDF\)](#)
- [Observed Test Conditions \(PDF\)](#)
- [Radon Test Notification Form English \(PDF\)](#)
- [Radon Test Notification Form Spanish \(PDF\)](#)

Test and notification reports:

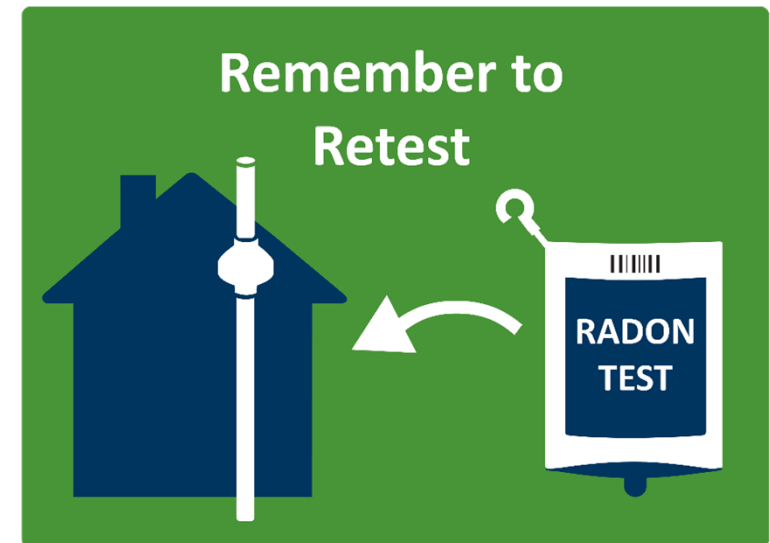
Resources

Health.indoorair@state.mn.us

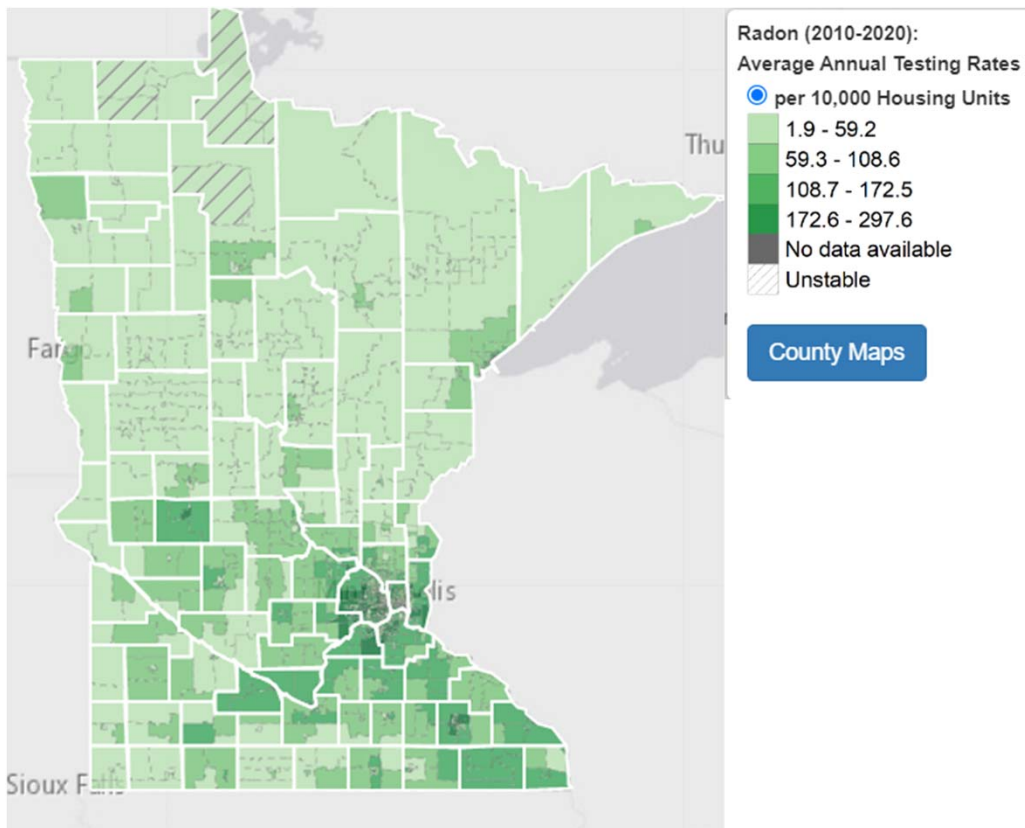
651-201-4601

How often should I test? General Public Advice

- Now, if you've never tested
- Every 5 years, if prior results under 4.0 pCi/L
- Every 2 years, if mitigation installed
- After:
 - Changes to heating / cooling
 - New addition to home
 - Start occupy areas not tested before (eg basement)
 - New holes in foundation
 - Changes to mitigation system



Testing Rates Vary Across State



- Average Annual Properties Tested (lab analyzed): per 10,000 housing units
- Overall about 1.5 % tested per year
 - Goal: 20%



Mitigation

MDH Indoor Air | mn.gov/radon

What if you find elevated radon level?

- Contact a radon mitigation professional
- MDH maintains a list of licensed professionals
- Follow recommended questions to identify professional



RADON

- [Radon in Homes](#)
- [Radon Testing](#)
- [Radon in Real Estate](#)
- [Find a Radon Measurement Professional](#)
- [Find a Radon Mitigation Professional](#)
- [Radon Mitigation Systems](#)
- [Financial Assistance](#)
- [Radon Resistant New Construction](#)
- [Licensing for Radon Professionals](#)
- [Laws, Rules and Standards](#)
- [Radon Poster Contest](#)

RELATED TOPICS

Find a Radon Mitigation Professional

Individuals conducting radon mitigation in Minnesota are required to be licensed by MDH.

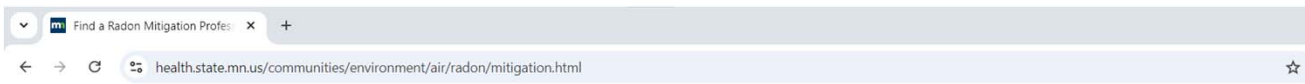
To find a mitigation professional, select Radon Mitigation Professional.

Radon Mitigation Professional

If you have a question about any radon-related activity, please contact MDH Indoor Air Unit with questions or to request a free inspection of a radon mitigation system installed after June 2020 at health.indoorair@state.mn.us or by phone at 651-201-4601.

Properly designing and installing a radon mitigation system is a professional level activity. This will ensure the final system is properly located and sized to achieve optimal radon reduction and not cause any other potential issues with the structure.

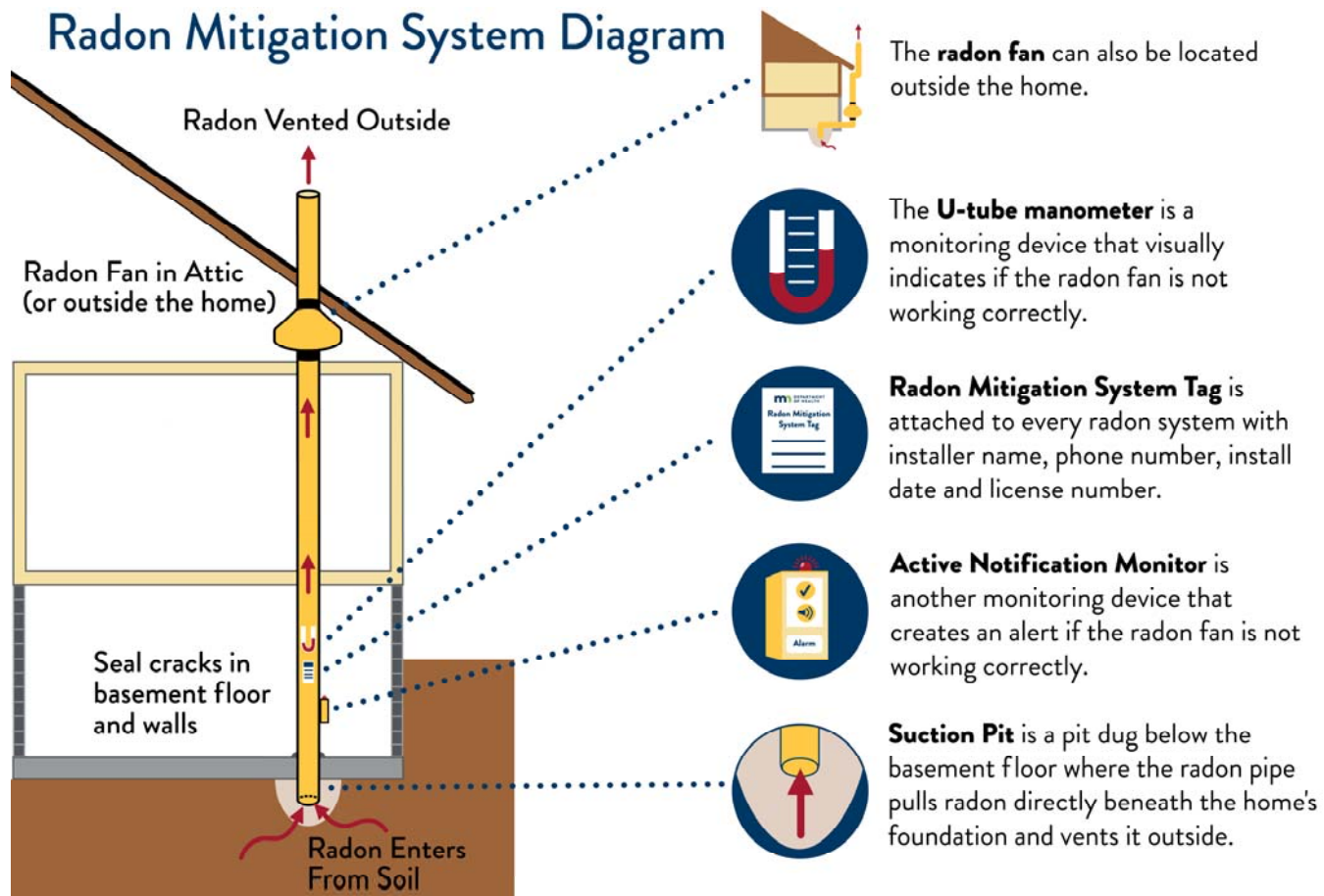
Important tips



Questions to ask a Mitigation Professional

- Can you provide a list of references?
- What is your individual MDH license number?
- Is the price firm or are there hidden fees?
- Will a contract be provided?
- Will you perform diagnostics to determine the suction point location and correct pipe and fan sizes?
- Will electrical work need to be performed to power the radon mitigation system? If so, is the contractor licensed and is that cost included in the proposal? For questions regarding electrical licensing or inspection, contact the Minnesota Department of Labor and Industry (DLI) at dli.electricity@state.mn.us or 651-284-5026.
- Who is responsible for obtaining permits, if required?
- Is there a warranty on materials or the workmanship? If so, for how long? Do you warranty system performance?
- How will the system be evaluated?
- Will you offer the homeowner training in the radon mitigation system operations and/or troubleshooting?
- Will you guarantee that radon levels will be brought to below the Environmental

Mitigation Basics



Radon Mitigation Process






10 STEP GUIDE

to the radon mitigation process

Before mitigation • During mitigation

After mitigation



Before mitigation

-  Radon test reveals the home has a radon problem.
-  Contact licensed radon mitigation professionals to request bids.
-  Professional does a walk-through of the home to identify the mitigation system to install.
-  Review key questions with professional, and request a proposal.
-  Review bids and select a professional.

During mitigation

-  Professional may perform diagnostic testing to ensure proper fan size and correct installation.
-  Professional seals cracks and openings in the basement.
-  Professional installs the radon mitigation system.

After mitigation

-  Professional provides a full explanation of how the system operates to the homeowner.
-  Retest the home to ensure the system has reduced radon levels.

Can't We Just Seal The Cracks?



- Too many
- Many inaccessible
- New cracks open
- Other pathways (open soil, block wall)

Doesn't My Air Exchanger Take Care of the Problem?

May help somewhat...IF

- Clean intake
- Filters clean/changed
- Balanced airflow



Safety: Check for back-drafting



Recommend Pressure Testing “Suck” Under Entire Home



Radon Mitigation System

Re-directs soil gasses

Piping starts under home

Fan

Discharge away



Other Parts of System

Active Notification Monitor



Labels



Pressure Measurement Device

FAN IS WORKING
Indicates air is moving



FAN IS NOT WORKING
Indicates air is not moving

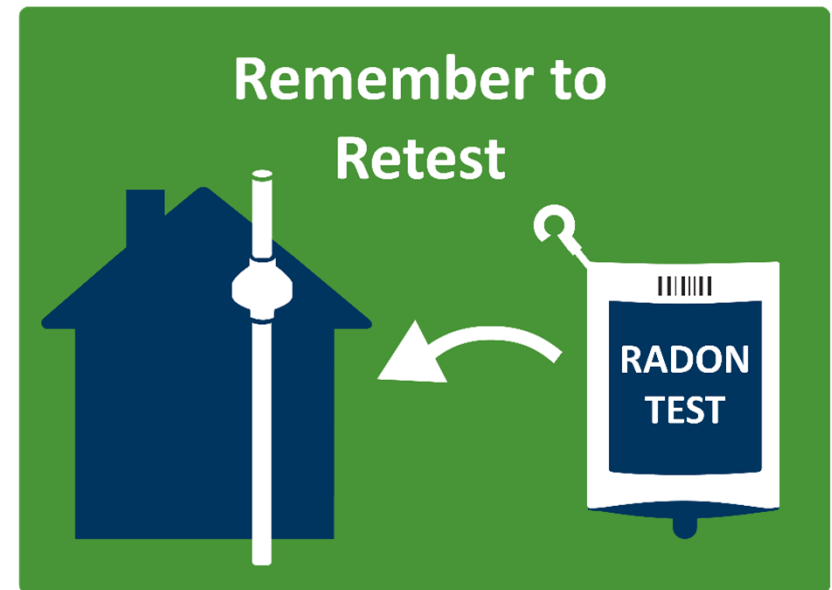


Operation, Monitoring & Maintenance Plan



Follow-up Procedures

- Test home after mitigation
 - 24 hours to 30 days after installation
- Retest
 - every 2 years
 - new additions, HVAC changes, new openings to soil, mitigation altered/repaired
- Homeowners can request a mitigation inspection by contacting MDH (after 6/1/20)



Resources

Radon Forms - MN Dept. of He

health.state.mn.us/communities/environment/air/radon/radonforms.html

Home > Healthy Communities, Environment a... > Environments and Your Health > Air Quality > Radon In Homes

RADON

- [Licensing for Radon Professionals Home](#)
- [Initial Licensing](#)
- [Requirements of Radon Licenses](#)
- [Continuing Education and License Renewal](#)
- [Forms](#)
- [Radon Licensing System](#)
- [Laws, Rules and Standards](#)

RELATED TOPICS

- [Radon in Homes](#)
- [Radon Data Portal](#)
- [Radon in Schools](#)
- [IAQ Training for Professionals](#)

ENVIRONMENTAL HEALTH DIVISION

- [EH Division Home](#)

Forms

Quality Assurance (QA) Plan

- [MDH Standard QA Plan \(PDF\)](#)
- [MDH QA Plan Adoption Form \(PDF\)](#)
- [QA Plan Control Log and Charts \(Excel\)](#)

Test and notification reports: Single Family

- [Radon Test Report \(PDF\)](#)
- [Radon Test Report \(Passive Test Kits\) \(PDF\)](#)
- [Report Addendum: Multiple Tests \(PDF\)](#)
- [Observed Test Conditions \(PDF\)](#)
- [Radon Test Notification Form English \(PDF\)](#)
- [Radon Test Notification Form Spanish \(PDF\)](#)

Test and notification reports:

Resources

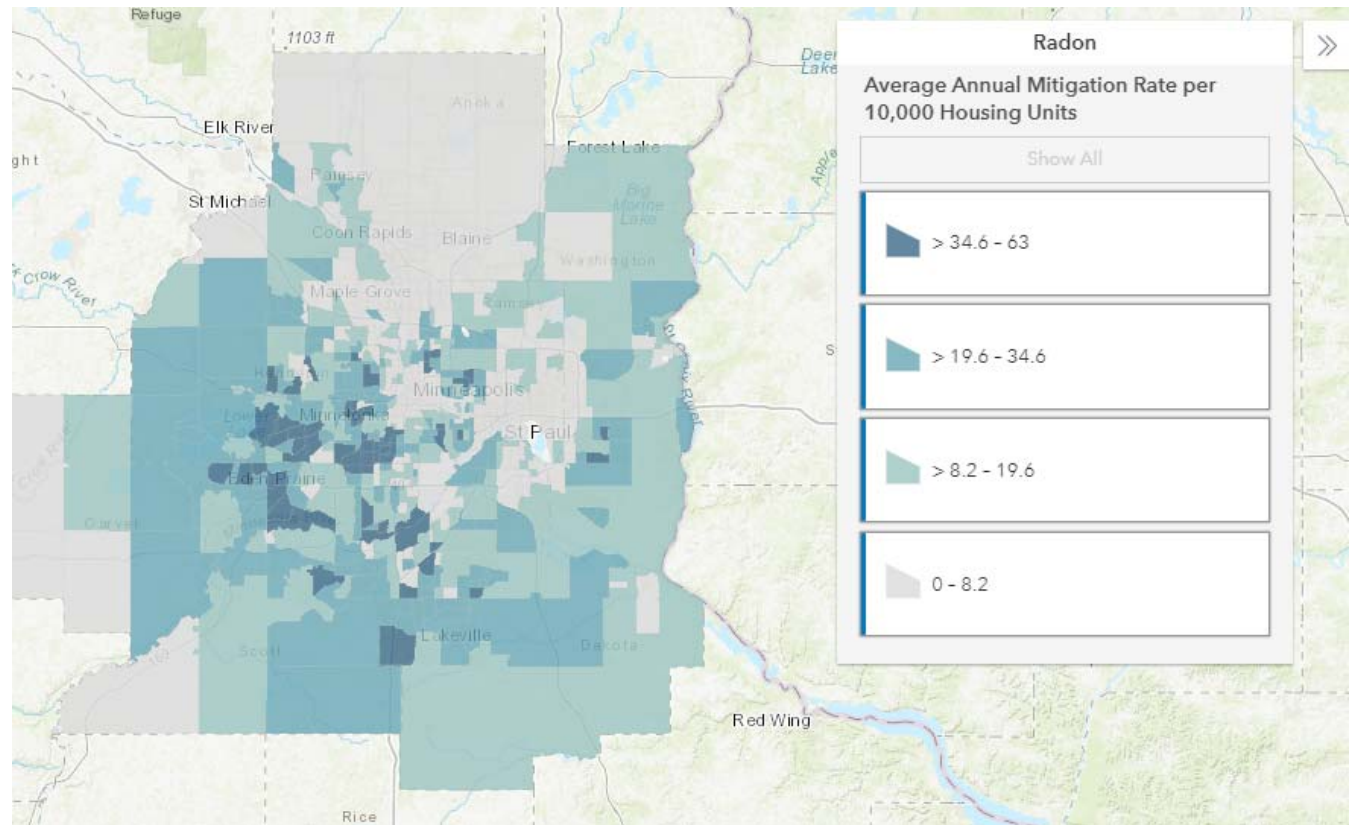
Health.indoorair@state.mn.us

651-201-4601

Mitigation Varies Across Metro

Metro Radon Mitigation

- Mitigation and testing associated with:
- ↑poverty
- ↓median home values
- ↑ percent of rental properties

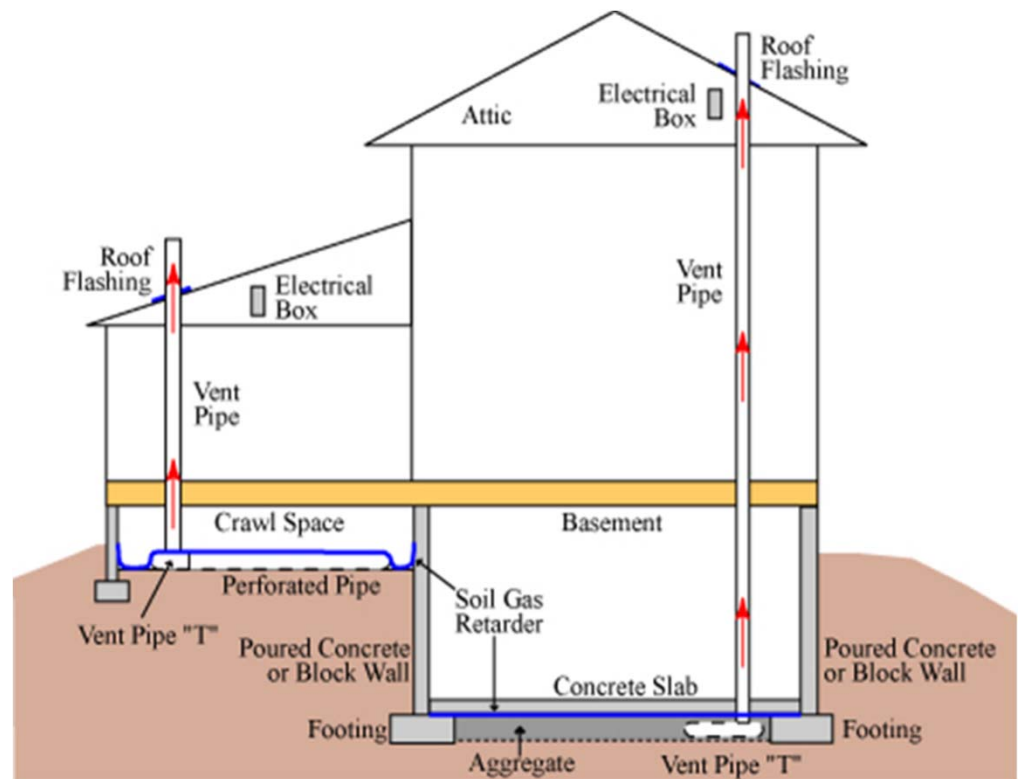




Laws & Policies

New Homes Must be Built “Radon Resistant”

- Passive in code since 2009
- Passive (required)
 - No fan
 - ~40% reduction
 - 35,663 housing units built (10/1/20-9/30/21)
- Active (recommended)
 - Radon fan
 - 90+% reduction



Aggregate Under the Slab



Vent Pipe and Soil Gas Retarder



What's Next?

- 1) Add fan during construction, or
- 2) Test for radon after occupancy (if elevated, activate the system)



Radon in Home Sales

- No testing or mitigation required
 - Some lenders and relocation companies have policies that require it
- Testing and mitigation can be done (eg, during home inspection)
 - Use licensed pros



Disclosure and Notification Required in Home Sales

Effective January 1, 2014 seller must

- Disclose:
 - Tested?
 - Result
 - Mitigation?
- Provide:
 - radon warning statement
 - “Radon in Real Estate Transaction” publication



Radon Warning Statement & 2-page Publication

“The Minnesota Department of Health strongly recommends that ALL homebuyers have an indoor radon test performed prior to purchase or taking occupancy, and recommends having the radon levels mitigated if elevated radon concentrations are found. Elevated radon concentrations can easily be reduced by a qualified, certified, or licensed, if applicable, radon mitigator.

Every buyer of any interest in residential real property is notified that the property may present exposure to dangerous levels of indoor radon gas that may place the occupants at risk of developing radon-induced lung cancer. Radon, a Class A human carcinogen, is the leading cause of lung cancer in nonsmokers and the second leading cause overall. The seller of any interest in residential real property is required to provide the buyer with any information on radon test results of the dwelling.”



Radon in Real Estate Transactions

All Minnesota homes can have dangerous levels of radon gas. Radon is a colorless, odorless and tasteless radioactive gas that can seep into homes from the soil. When inhaled, its radioactive particles can damage the lungs. Long-term exposure to radon can lead to lung cancer. About 21,000 lung cancer deaths each year in the United States are caused by radon.

The only way to know how much radon gas has entered the home is to conduct a radon test. MDH estimates 2 in 5 homes exceed the 4.0 pCi/L (picocuries per liter) action level. Whether a home is old or new, any home can have high levels of radon.

The purpose of this publication is to educate and inform potential home buyers of the risks of radon exposure, and how to test for and reduce radon as part of real estate transactions.

Disclosure Requirements

Effective January 1, 2014, the Minnesota Radon Awareness Act requires specific disclosure and education be provided to potential home buyers during residential real estate transactions in Minnesota. Before signing a purchase agreement to sell or transfer residential real property, the seller shall provide this publication and shall disclose in writing to the buyer:

1. whether a radon test or tests have occurred on the property
2. the most current records and reports pertaining to radon concentrations within the dwelling
3. a description of any radon levels, mitigation, or remediation
4. information on the radon mitigation system, if a system was installed
5. a radon warning statement

Radon Facts

How dangerous is radon? Radon is the number one cause of lung cancer in non-smokers, and the second leading cause overall. Your risk for lung cancer increases with higher levels of radon, prolonged exposure, and whether or not you are a current smoker or former smoker.

Where is your greatest exposure to radon? For most Minnesotans, your greatest exposure is at home where radon can concentrate indoors.

What is the recommended action based on my results? If the average radon in the home is at or above 4.0 pCi/L, the home's radon level should be reduced. Also, consider mitigating if radon levels are between 2.0 pCi/L and 3.9 pCi/L. Any amount of radon, even below the recommended action level, carries some risk.

Radon Warning Statement

“The Minnesota Department of Health strongly recommends that ALL homebuyers have an indoor radon test performed prior to purchase or taking occupancy, and recommends having the radon levels mitigated if elevated radon concentrations are found. Elevated radon concentrations can easily be reduced by a qualified, certified, or licensed, if applicable, radon mitigator.

Every buyer of any interest in residential real property is notified that the property may present exposure to dangerous levels of indoor radon gas that may place the occupants at risk of developing radon-induced lung cancer. Radon, a Class A human carcinogen, is the leading cause of lung cancer in nonsmokers and the second leading cause overall. The seller of any interest in residential real property is required to provide the buyer with any information on radon test results of the dwelling”.

Licensure for Service Providers

- License required:
 - If you don't own or lease the property
 - Professionals that measure for radon (home inspectors, consultants, etc.)
 - Professionals that mitigate radon (plumbers, HVAC contractors, etc.)

MN Radon Licensing

- Is contractor licensed to test for radon?
 - check MDH site
 - ask for proof of current MDH license
 - not same as certification
- Radon pros can do both mitigation and measurement (if licensed for both)
- Homeowners can request a mitigation inspection by contacting MDH (after 6/1/20)

DEPARTMENT OF HEALTH Radon Licensing and Tag System

Home Reports Help

Radon Service Providers

***Licensed radon mitigation professionals are required to attach a MDH system tag upon completion of radon systems installed on September 1, 2020 and later. Building owners/occupants may request a free inspection of the radon system by contacting the MDH Indoor Air Unit at 651-201-4601 or by emailing health.indoorair@state.mn.us.**

Provider Type: *
Measurement

Service Type:
 Single Family Homes
 Multi Family Buildings
 Schools and Large Buildings

Your Zip Code to Limit Search:
55124
Leave blank for Statewide result.

Search

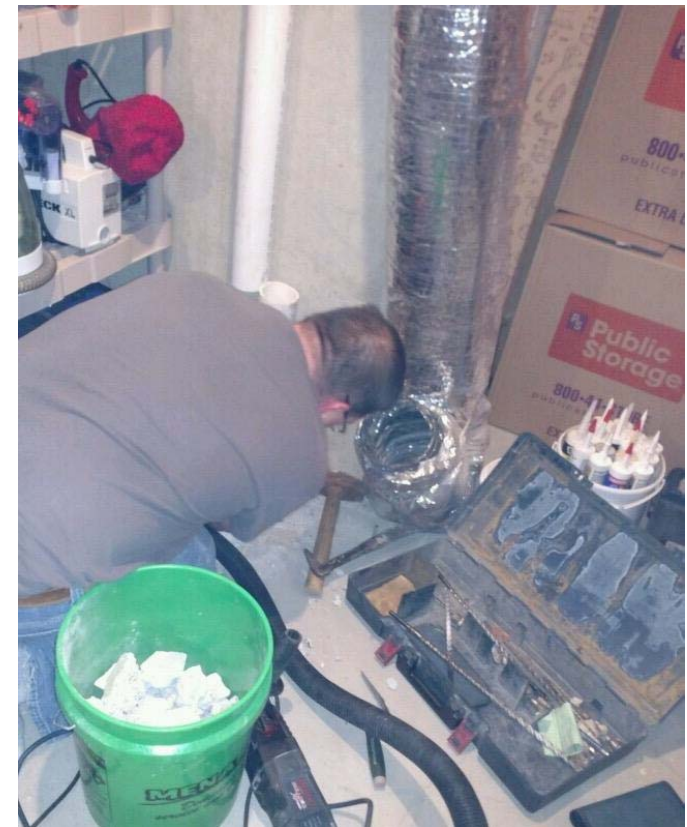
Professional	Company Name	Address	Services Provided	Service Area
Chao HsiangDavid Cheng - RMEA-00208 (612) 224-6659	Trusted Home Inspection, LLC	15221 Florist Cir Apple Valley, MN 55124	Single Family Measurement	100 miles
Karl Sanders - RMEA-00023 (612) 408-4000	Hortech, Inc. www.inspectwithkarl.com	6921 137th Ct W Apple Valley, MN 55124	Single Family Measurement	100 miles
Gina Carlson - RMIT-00032 (952) 220-9409	Healthy Homes healthyhomeradon.com	15050 Cedar Ave S Apple Valley, MN 55124	Single Family Mitigation Multi Family Mitigation Schools & Large Buildings Mitigation Single Family Measurement	Statewide
Yury Slutsky - RMEA-00222 (612) 816-2363	MSP Inspections LLC http://mspinspections.com/	4204 Sumac Pt Eagan, MN 55122	Single Family Measurement	50 miles
Jason Gale - RMEA-00244 (651) 452-4663	All-in-One Home Inspecting LLC www.allinonehomeinspecting.com	1547B Clamson Dr Eagan, MN 55122	Single Family Measurement	50 miles

How to get licensed

- Measurement
 - 16 hour training
 - Pass exam
 - Quality assurance plan
 - Apply online (\$150 per year)
 - Renew with 8 hrs CE per year
- Mitigation (includes measurement license)
 - 16 hr measurement + 24 hr mitigation training
 - Pass 2 exams
 - QA plan
 - Apply online (\$250 per year)
 - Company license likely (\$0 or \$100)
 - Renew with 12 hrs CE per year

Licensee requirements

- Use approved devices and labs
- Follow quality assurance plan for measurement
- Follow AARST-ANSI standards
- Report data quarterly to MDH
- Notify MDH of any changes to license
- Maintain records for at least 3 years
- Make available information to MDH (for audits and inspections)
- Affix MDH Radon Mitigation System Tag



Numbers of Credentials Annually

- ~420 measurement pros
- ~140 mitigation pros
- 13 labs
- 8,000 – 9,000 tags

Other Laws

- Public Schools
 - Testing not required
 - If choose to test, must follow state's testing plan, report data to MDH and board
- MDH data
 - Considered non-public, can't be shared generally

Other Laws

- New construction and major renovations of state buildings
 - If funded from bond proceeds must follow the state's building design guidelines, which currently include radon control requirements.
- Child Care, Rental Housing
 - No requirements to test, mitigate or disclose

MN Housing Policy

mnhousing.gov/sites/multifamily/radonmitigation

- All multifamily project receiving funding from MN Housing must:
 - Test using certified and MDH licensed individual
 - Follow AARST testing and mitigation standard for multifamily housing (including resident notifications)
 - Submit radon report at project phases
 - No exterior radon systems allowed
 - Test regardless of refi includes rehab
 - Test regardless of underground garage
 - At or above 4 pCi/L → mitigate
 - If refi with rehab, can mitigate prior to closing or in rehab process

MN Housing Policy

- New construction
 - No Underground garage → build passive (building code)
 - Test all ground contact plus at least 10% of unit on upper floor.
 - If elevated, activate passive system or install system

MN Housing Policy

- Substantial Rehab
 - Install passive sub-slab system (building code)
 - Test all ground contact plus at least 10% of unit on upper floor.
 - If elevated, activate system

MN Housing Policy

- Moderate rehab
 - Test preconstruction (if won't influence radon) or post construction (if will influence)
 - Some exception may apply, contact MN Housing
 - If elevated, install active radon system

Federal Lending Policies

- HUD multifamily loans
 - 2020 Multifamily Accelerated Processing Guide (chapter 9.6.3)
 - Testing with licensed pro, follow standard
 - https://www.hud.gov/program_offices/administration/hudclips/guidebooks/hsg-GB4430
- FHFA
 - Fannie Mae and Freddie Mac multifamily loans
 - Require testing –Minnesota state requirements must be met

MDH Radon PSA



Also, in Spanish, Hmong, Somali, including 6-minute versions available

MDH Awareness Efforts

- 500-600 Spots, 20 million gross impressions
 - TV (15 Sec): 4 major channels
 - Radio (15 Sec): pop, talk, public radio
- On-line banners: Twincities.com
- 10 – 15 Digital Billboards
- Press release (January)
- Community events, trainings

A graphic advertisement for radon awareness. It features a blue background with a glowing blue human figure on the right side. The text is in white and yellow. The main headline is "RADON gas is deadly." in yellow, followed by "IS YOUR FAMILY SAFE?" in white. Below that, it says "Order a test kit for only \$12.95 @ mn.radon.com" in white. At the bottom left, there is the Minnesota Department of Health logo, which consists of a stylized 'm' and 'h' in white and green, followed by the text "DEPARTMENT OF HEALTH" in white. At the bottom center, there is a yellow button with the text "LEARN MORE" in white.

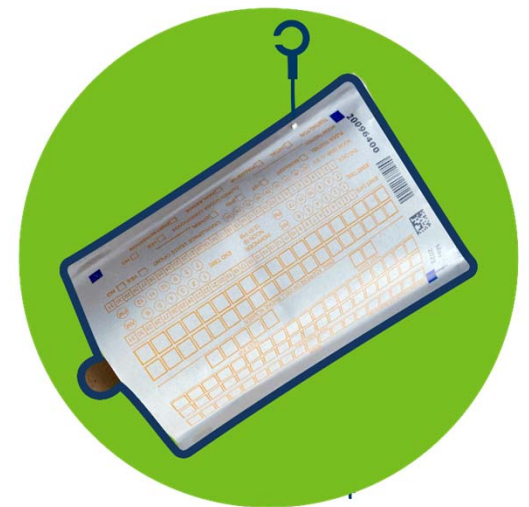
RADON gas is deadly.
IS YOUR FAMILY SAFE?
Order a test kit for only
\$12.95 @ mn.radon.com

m DEPARTMENT
OF HEALTH

LEARN MORE

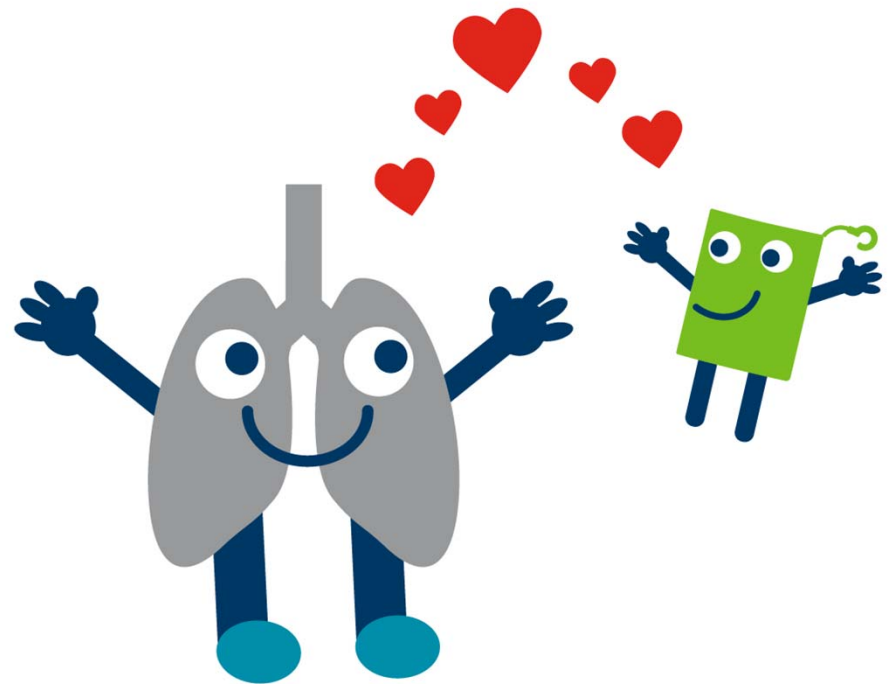
MDH Outreach with Partners

- 66 - 110 partners per year
- Distribute 4,000 – 10,000 test kits and brochures
 - Also: example articles, social media, press release, joint presentations, media interview, training
- State master contract (Air Chek): \$5.35 per kit
- How can we partner with you?



Create a Healthier Home: Test...Fix...Prevent Lung Cancer

- Minnesota has high radon levels (2 in 5 homes elevated)
- EPA action level is 4.0 pCi/L
- Testing/mitigation can be done
- Use licensed professionals (if you don't own or lease or under other policy)
- Know and follow policies and laws



Radon Mitigation

Ask This Old House S:4 E:14



For More Information

MDH Indoor Air Unit

651-201-4601

health.indoorair@state.mn.us

mn.gov/radon

U.S. Environmental Protection Agency

epa.gov/radon