NATURAL RESOURCES, AGRICULTURE, AND ENVIRONMENT INTERIM LEGISLATIVE COMMITTEE 2021 GENERAL SESSION HOUSE BILL 45

WAYS TO INCREASE PUBLIC AWARENESS ABOUT THE RISKS OF RADON GAS & MITIGATE UTAH RESIDENTS' EXPOSURE TO RADON

R. William Keach, II, P.G. (Director, Utah Geological Survey)

Dr. Steve D. Bowman, P.E., P.G., (Geologic Hazards Program Manager)

Jessica J. Castleton, P.G., M.S. (Geologic Hazards Program Senior Geologist)

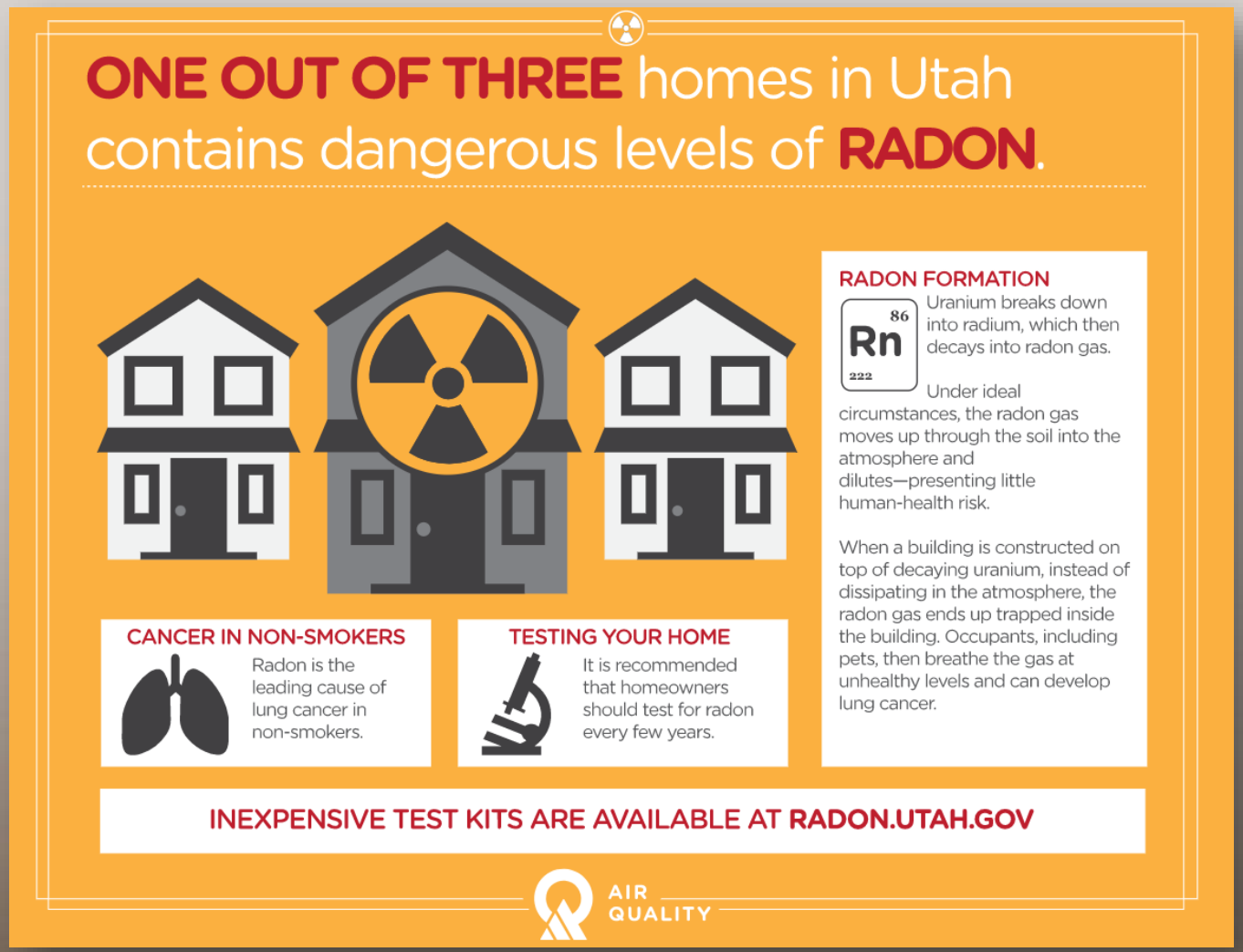
Eleanor Divver (Radon Program, Utah Department of Environmental Quality)

Utah's most deadly and costly geologic hazard

Between 1973 and 2017, an estimated 5826* radon-related fatalities occrred in Utah.

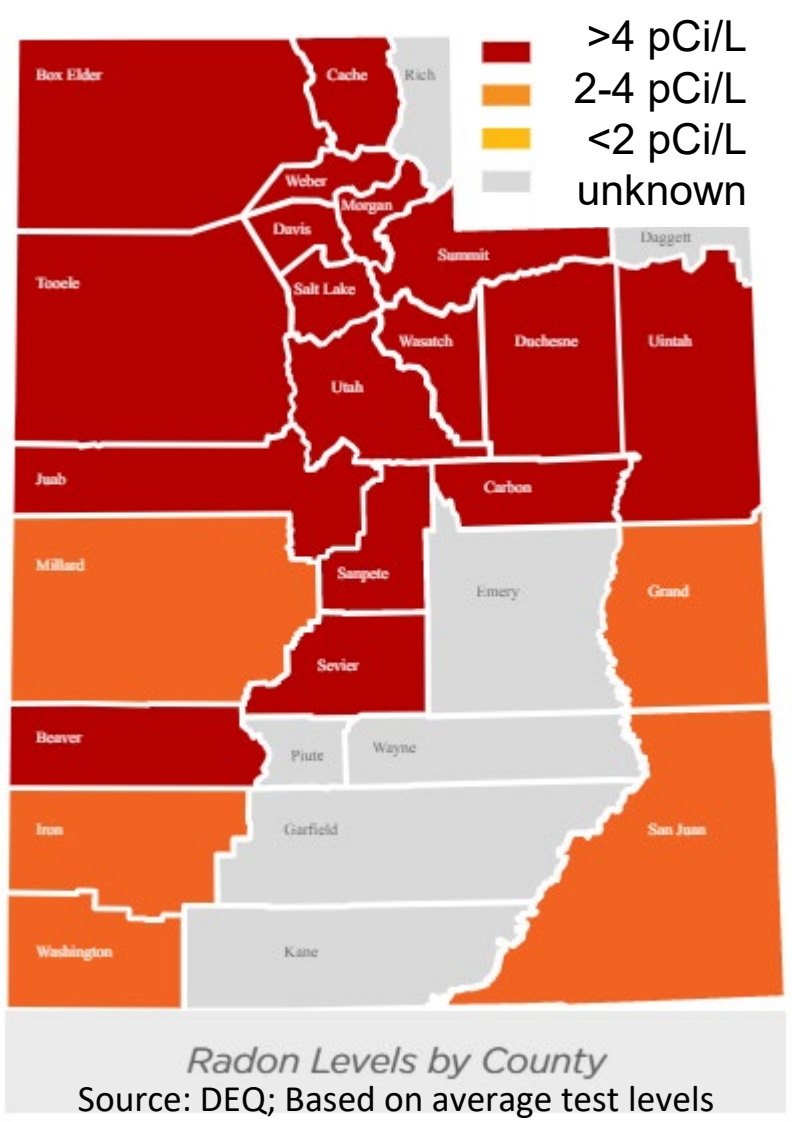
*Utah Department of Health

Radon Hazard *is* in Utah

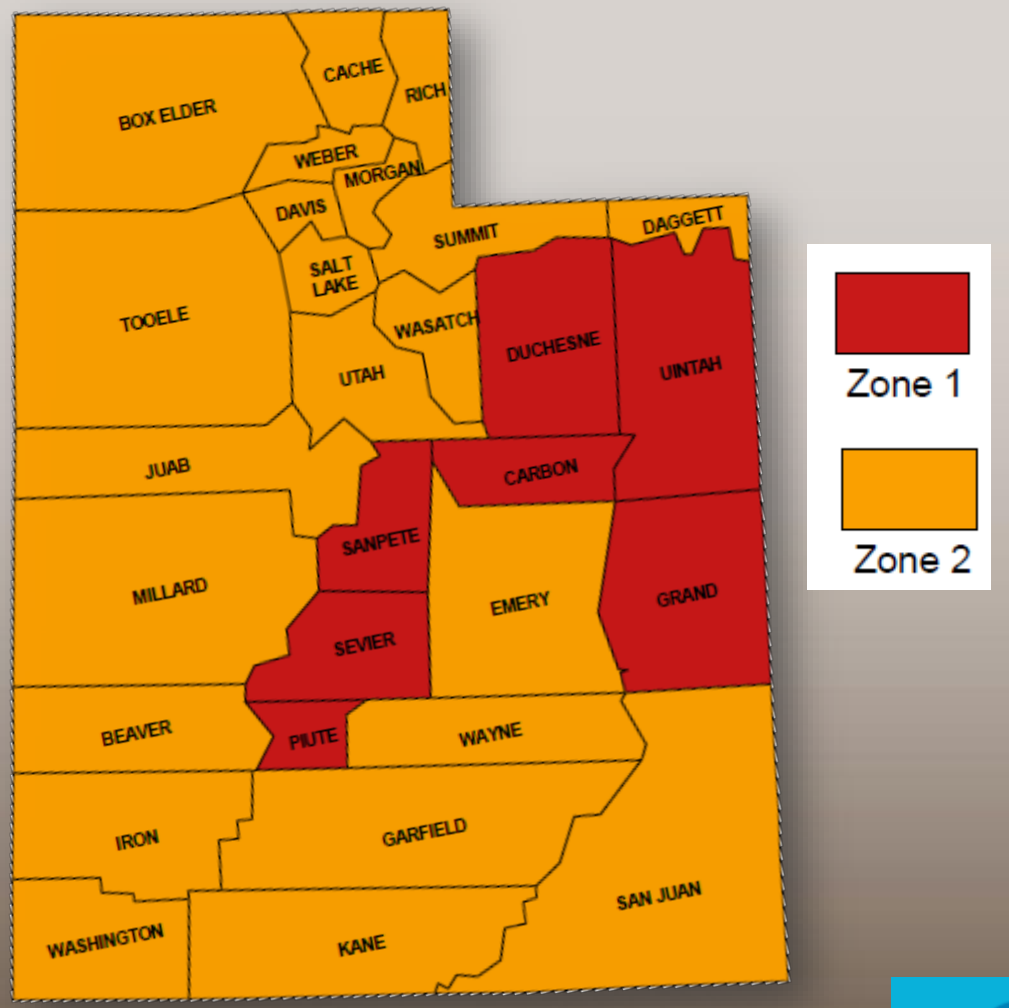


Utah's Radon Hazards

DEQ
Predicted values based on testing



Source: DEQ; Based on average test levels



EPA
Predicted
>4 pCi/L

2-4 pCi/L

Why Should You Care?

RADON RISK IF YOU'VE NEVER SMOKED

Radon Level	If 1,000 people who never smoked were exposed to this level over a lifetime*…	The risk of cancer from radon exposure compares to**…	WHAT TO DO:
2 pCi/L	About 4 people could get lung cancer	The risk of dying from poison	Consider fixing between 2 and 4 pCi/L
1.3 pCi/L	About 2 people could get lung cancer	(Average indoor radon level)	(Reducing radon levels below 2 pCi/L is difficult)
0.4 pCi/L		(Average outdoor radon level)	

Note: If you are a former smoker, your risk may be higher.
*Lifetime risk of lung cancer deaths from *EPA Assessment of Risks from Radon in Homes* (EPA 402-R-03-003).
**Comparison data calculated using the Centers for Disease Control and Prevention's 1999-2001 National Center for Injury Prevention and Control R

Source: EPA

Radon in Utah

- Average radon level in Utah: **5.3 pCi/L**
- Highest radon levels measured in Utah: **664 pCi/L**

County in Utah	Tests Completed	% of Households Tested
Beaver	423	26%
Box Elder	831	6%
Cache	3472	11%
Carbon	209	4%
Davis	5482	6%
Salt Lake	30,692	11%
Summit	1929	15%
Utah	12,055	8%
Wasatch	1193	14%
Washington	797	2%
Weber-Morgan	3231	5%

A sampling of counties across the state

2021 HB 45

Recommendations to

INCREASE PUBLIC AWARENESS ABOUT THE RISKS OF RADON GAS & MITIGATE UTAH RESIDENTS' EXPOSURE TO RADON

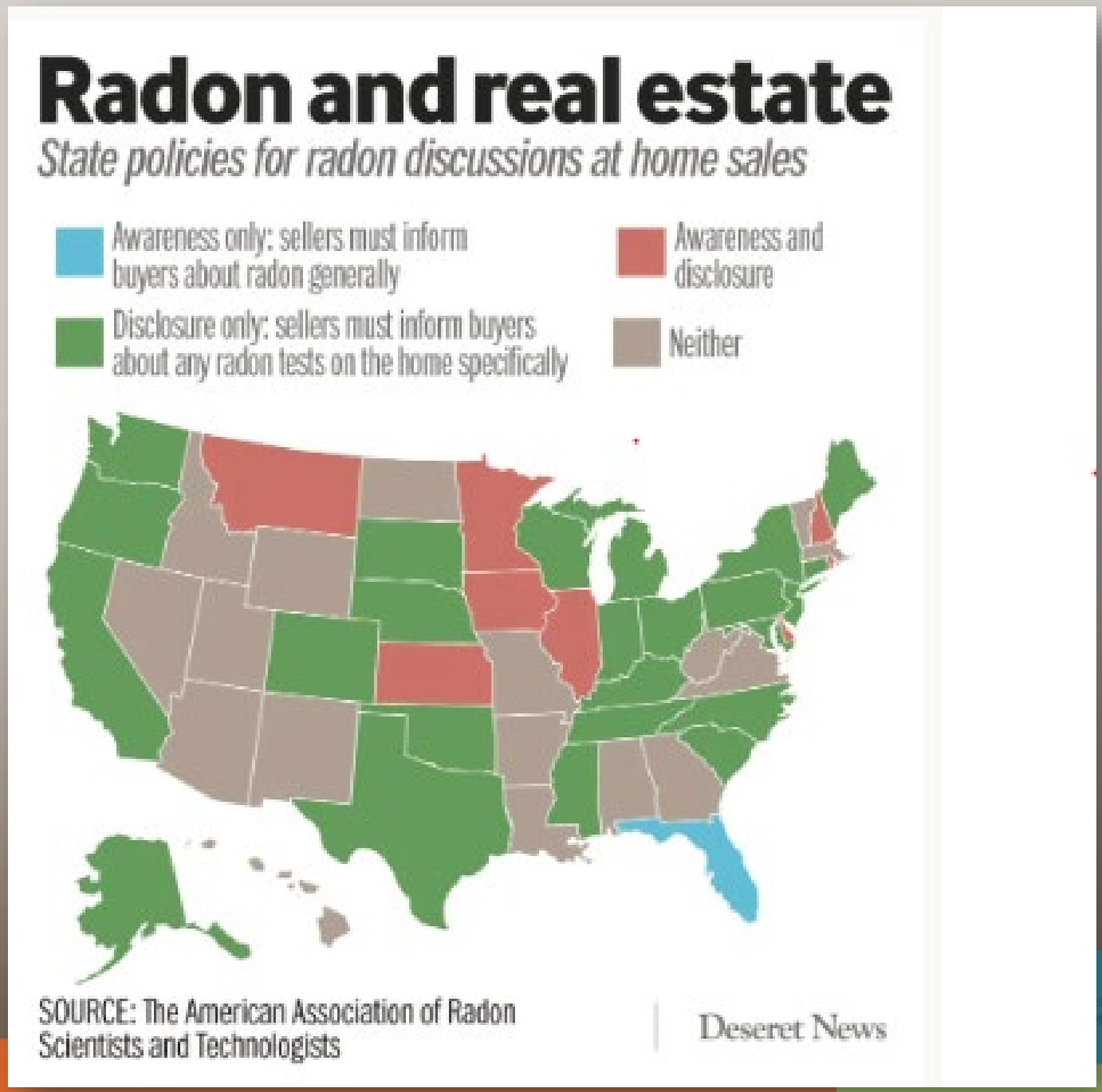
Public Awareness

- Increase Homebuyers Awareness of Radon Gas Hazards
- Increase Utah Student Awareness of Radon and other Natural Hazards
- Increase Public Awareness of Radon Gas Hazards
- Increase Public Access to Indoor Radon Gas Test Data

✓ Test Schools and Daycares for Radon

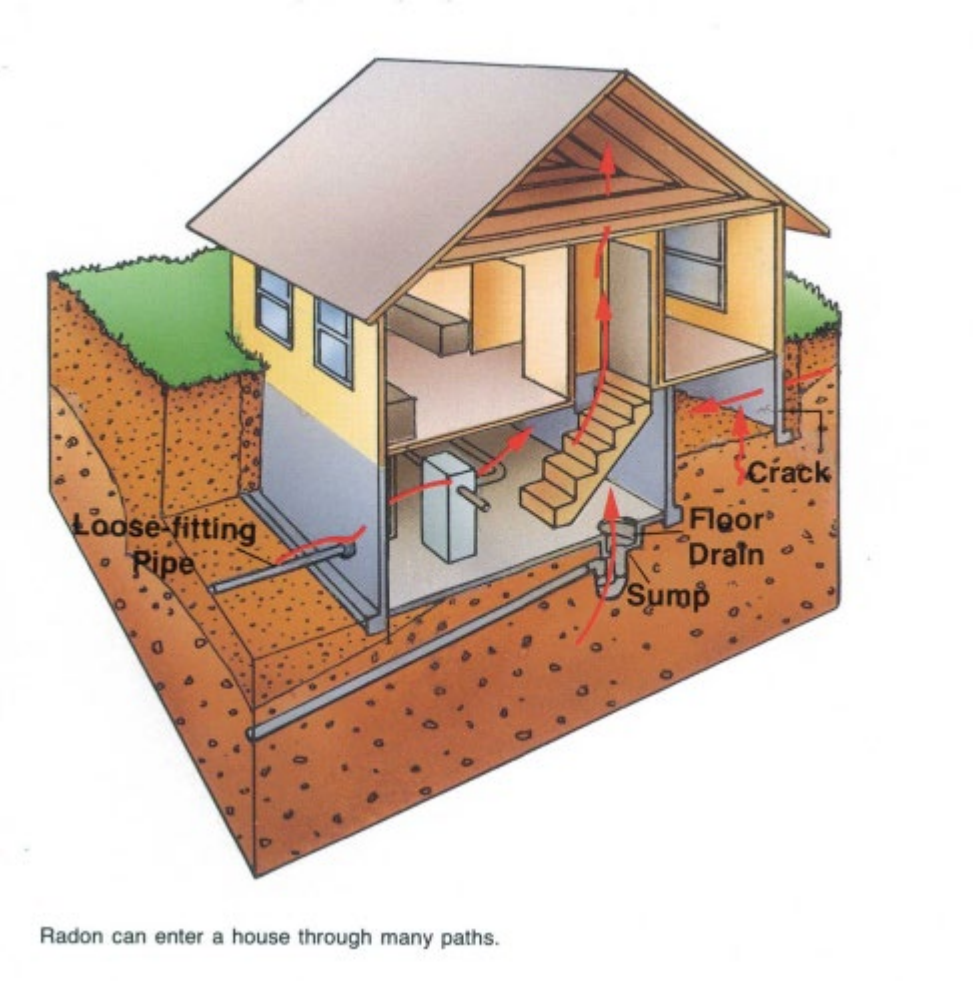
✓ Test Prisons and Public Buildings for Radon

Where does Utah Stand?



Sara Israelsen-Hartley
Deseret News
January 29, 2020

Increase Homebuyers Awareness



Radon can enter a house through many paths.

Radon Testing in Utah Schools

Sara Israelsen-Hartley
Deseret News
January 29, 2020

Radon Testing in Utah Schools

School districts that are testing according to AARST protocol

Every building, every classroom at least every five years

Beaver	Davis
Canyons	Tooele

School districts that are testing/have tested but not according to AARST protocol

Not every building, not every classroom older than five years and/or test kits placed incorrectly

Box Elder	Park City
Emery	Provo
Granite	Salt Lake City*
Iron	South Summit
Jordan*	Uintah
Nebo	Wasatch
North Summit	Washington

**Districts that have reached out to the Utah Department of Environmental Quality with questions regarding testing after being asked about radon by the Deseret New*

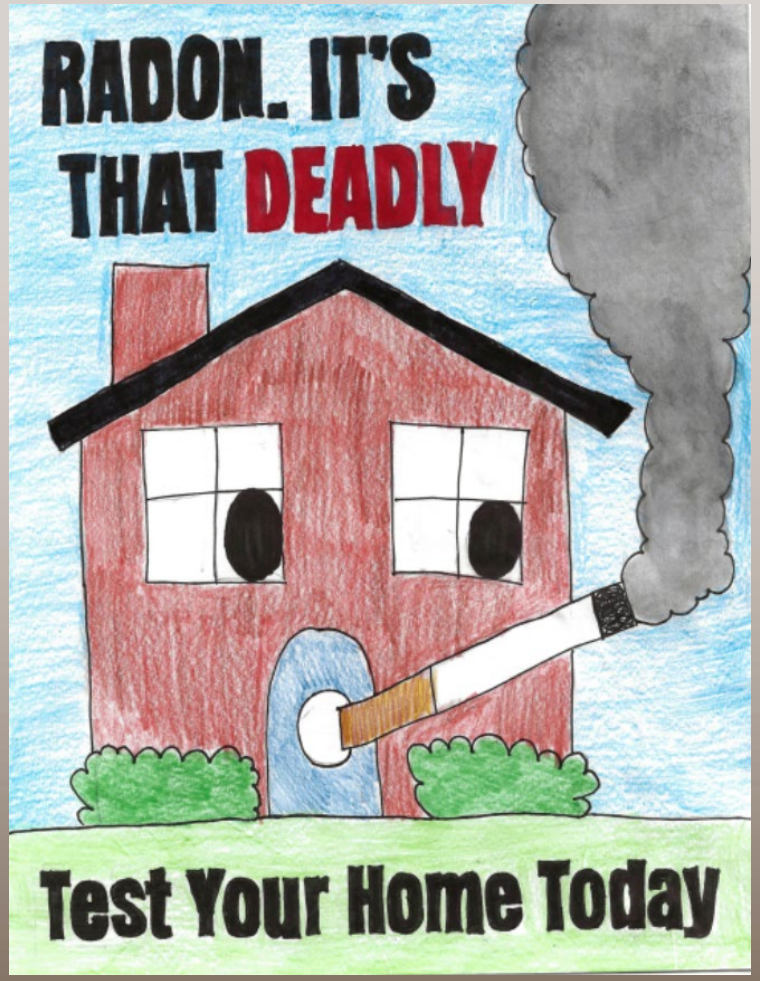
School Districts that have not tested for radon

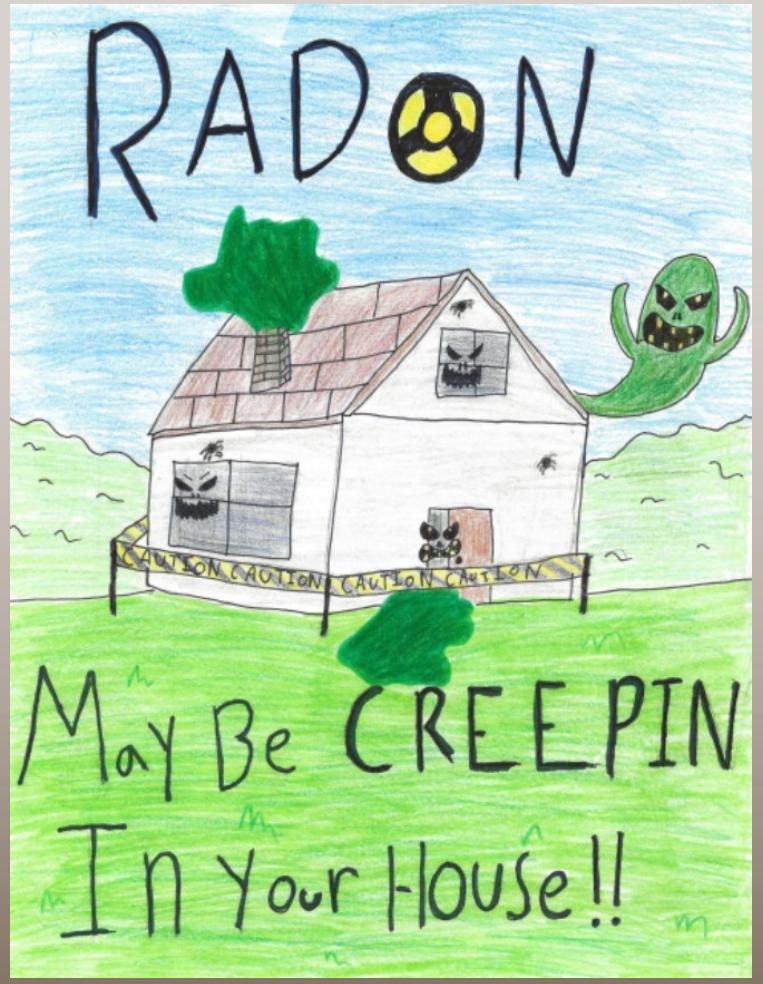
Alpine^	Murray
Cache	North Sanpete
Carbon	Ogden
Daggett	Piute
Duchesne	Rich
Garfield	San Juan
Grand	Sevier **
Juab	South Sanpete**
Kane	Tintic
Logan	Wayne
Millard	Weber
Morgan**	

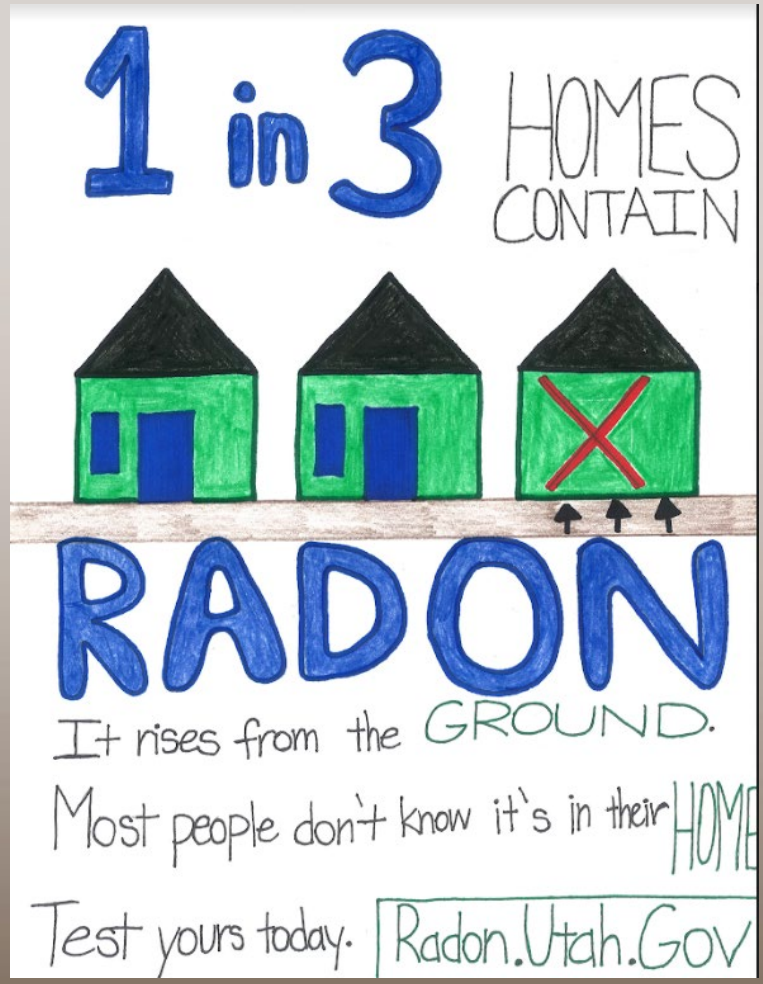
^Refused to answer our survey

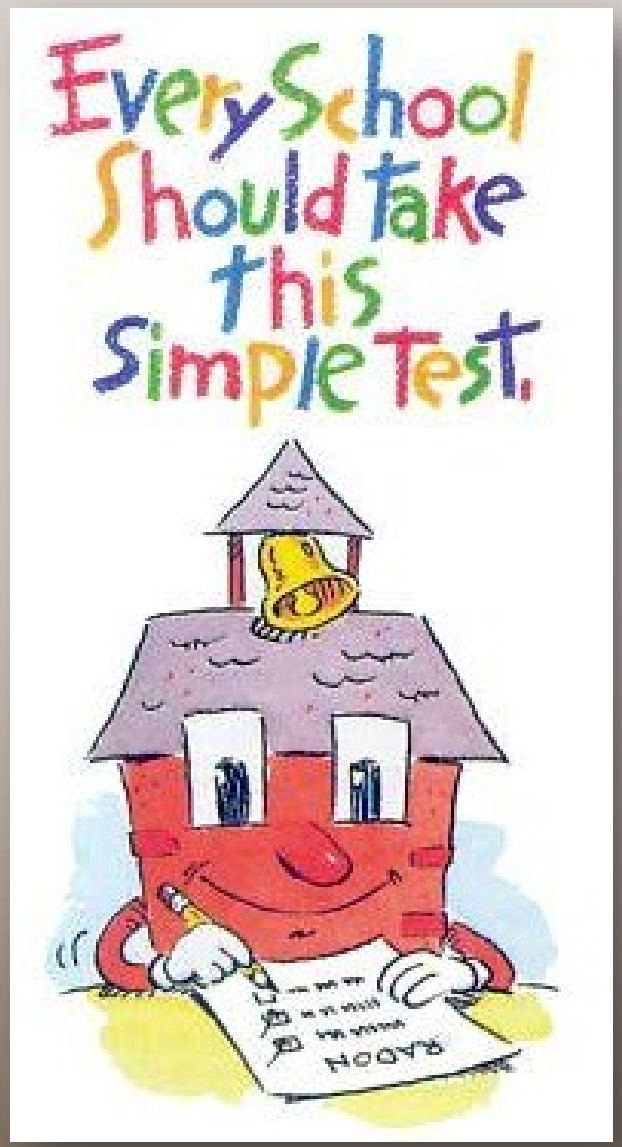
***Districts that allowed the Deseret News and DEQ to come out and test an elementary school to demonstrate the process*

Kids know about Radon – Let's make it official









Where do your kids spend a large portion of time?

Test for Radon Every Five Years in:

- ✓ Schools
- ✓ Daycares

Where do you Spend the Majority of your time?

Test for Radon in:

- ✓ Public Buildings
- ✓ Prisons

UTAH GEOLOGICAL SURVEY

UTAH DEPARTMENT of ENVIRONMENTAL QUALITY

Increase Public Awareness
Education Through Outreach

- Sponsor radon education at
  - emergency preparedness
  - community fairs, etc.
- Distribution of free radon gas test kits
- Educate about radon gas action limits

Mitigation

- Reduce Utahns' Exposure to Indoor Radon Gas in New Construction
- Reduce Utahns' Exposure to Indoor Radon Gas
- Increase Public Access to Indoor Radon Gas Test Data
- Increase Understanding of Background Radon Levels in Utah
- Evaluate Appropriate Level of Indoor Radon Gas

What We Can Do

Reduce Utahns' Exposure to Indoor Radon Gas in New Construction –

- Adopt *Appendix F (Radon Control Methods)* of the latest adopted International Residential Code (IRC) in the State Construction and Fire Codes Act. <u>Requires passive or active radon mitigation systems be installed at time of construction.</u>
- Adopt statewide, the *Rough-In of Radon Control Components in New Construction of One- and Two-Family Dwellings and Townhomes* in the State Construction and Fire Codes Act.

What We Can Do

Source: AARST

Reduce Utahns' Exposure to Indoor Radon Gas –

- Require in-home testing when a home is sold
- Develop a no or low interest loan program for radon mitigation of an existing residential property

What We Can Do

Source: AARST

Reduce Utahns' Exposure to Indoor Radon Gas –

- If the results of the radon test are greater than or equal to 4 pCi/L, recommend that a radon mitigation system be installed
- If the results of the radon test are between 2.7 - 4 pCi/L, consider installing a radon mitigation system

What We Can Do

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF RADIATION CONTROL
Short Term Radon Test Results By County And ZIP Code as of June 2019
The data is informational only and should not be utilized for the purpose of determining where one should test nor where radon control systems should or should not be incorporated in new home construction.

BEAVER

ZIP CODE	<4 pCi/L	>=4 pCi/L	Maximum	Average	Total Tests
84713	25.0%	75.0%	0.0	43.3	388
84731	100.0%	0.0%	2.9	2.4	3
84751	70.6%	29.4%	13.1	3.7	17
84752	20.0%	80.0%	25.9	9.4	15
Beaver	27.2%	72.8%	664.0	40.2	423

BOX ELDER

ZIP CODE	<4 pCi/L	>=4 pCi/L	Maximum	Average	Total Tests
84301	100.0%	0.0%	3.7	2.7	3
84302	41.0%	59.0%	81.1	8.0	532
84306	50.0%	50.0%	17.8	6.5	10
84307	100.0%	0.0%	2.8	1.6	5
84309	15.4%	84.6%	43.9	14.6	13
84311	50.0%	50.0%	20.1	7.6	6
84312	58.5%	41.5%	10.4	3.6	41
84314	35.3%	64.7%	20.1	7.2	17
84316	0.0%	100.0%	4.6	4.6	1
84324	34.8%	65.2%	90.4	12.5	46
84329	100.0%	0.0%	2.7	2.7	1
84330	100.0%	0.0%	0.8	0.8	1
84331	0.0%	100.0%	8.5	8.5	1
84334	60.0%	40.0%	11.1	4.2	5
84337	61.0%	39.0%	24.9	4.1	77
84340	33.3%	66.7%	20.3	6.0	72
Box Elder	43.1%	56.9%	90.4	7.5	831

CACHE

ZIP CODE	<4 pCi/L	>=4 pCi/L	Maximum	Average	Total Tests
84304	50.0%	50.0%	10.6	7.3	2
84305	33.3%	66.7%	11.8	7.6	3
84308	100.0%	0.0%	2.4	2.4	1
84318	31.4%	68.6%	67.5	8.0	191
84319	51.8%	48.2%	32.6	5.8	141
84320	55.6%	44.4%	14.8	5.6	36
84321	55.4%	44.6%	112.6	6.1	1218
84322	72.7%	27.3%	31.8	5.1	11
84323	66.7%	33.3%	19.2	5.4	24
84325	42.9%	57.1%	48.9	6.2	84
84326	30.6%	69.4%	86.2	8.0	62
84327	44.4%	55.6%	10.7	5.2	9
84328	25.9%	74.1%	67.6	11.0	81
84332	35.1%	64.9%	87.0	8.6	356
84333	53.8%	46.2%	25.4	5.1	65
84335	54.3%	45.7%	43.5	5.8	403
84338	100.0%	0.0%	1.7	1.3	4
84339	33.9%	66.1%	152.5	15.3	177
84341	49.5%	50.5%	89.0	6.5	604
Cache	48.3%	51.7%	152.5	7.0	3472

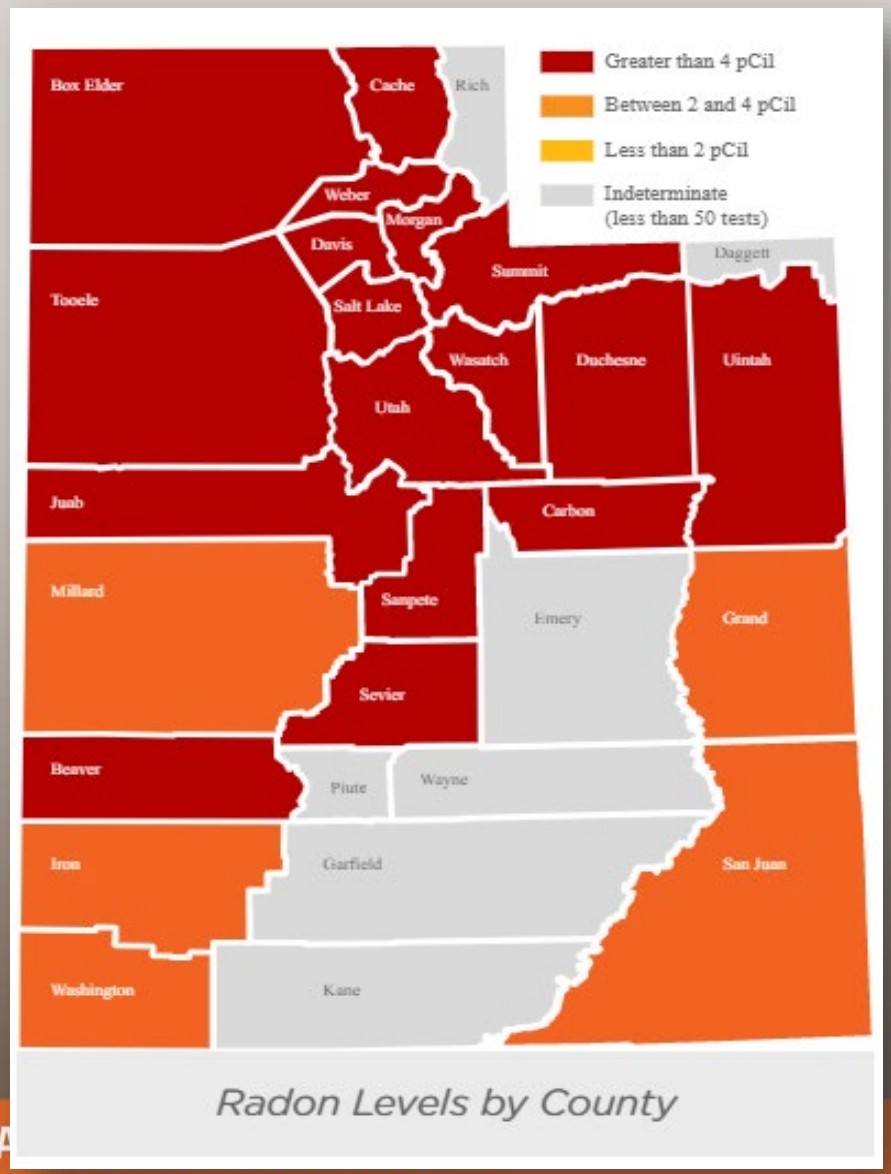
CARBON

Reduce Utahns' Exposure to Indoor Radon Gas –

- Create a new, online radon test database
- Collect and archive radon test data; and maintain the database
- This database would distribute radon gas testing data by fixed U.S. Census block areas

Source: DEQ

What We Can Do



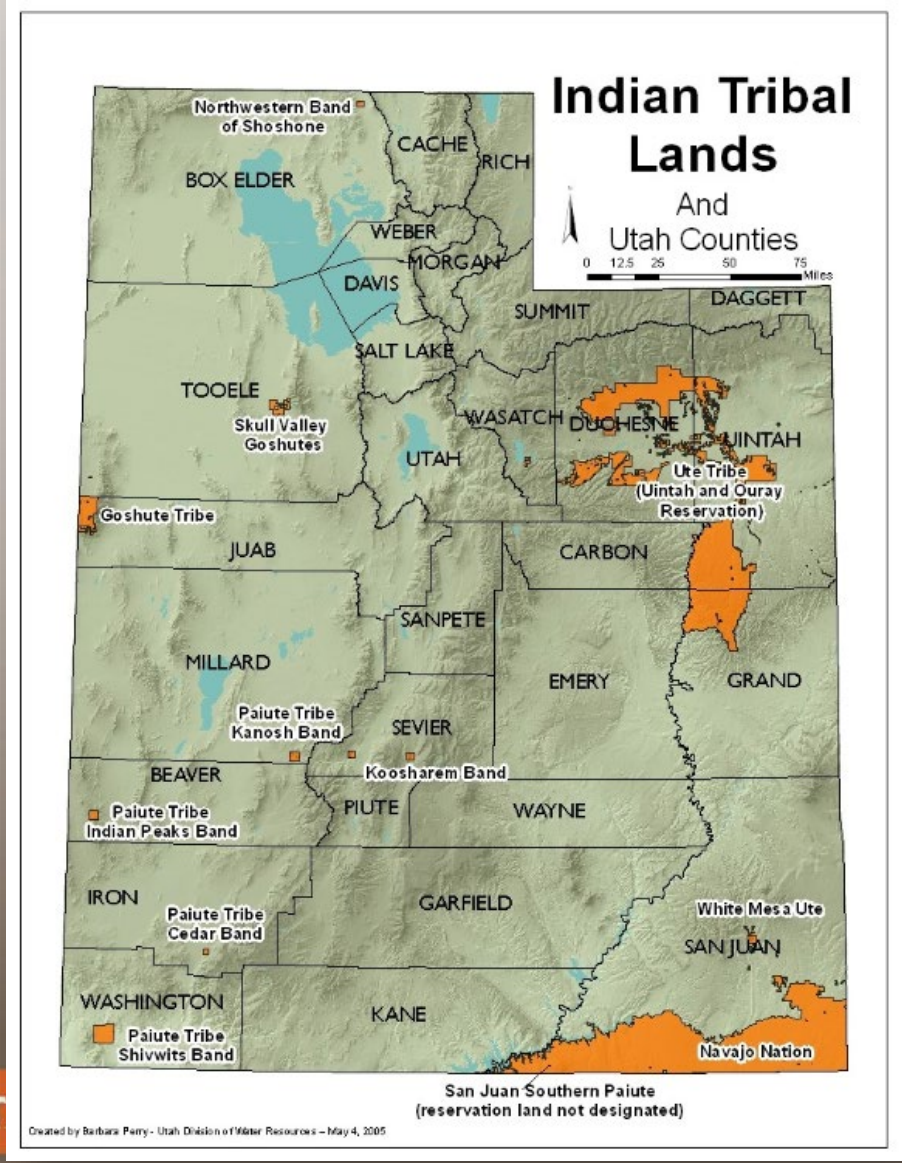
Radon Levels by County

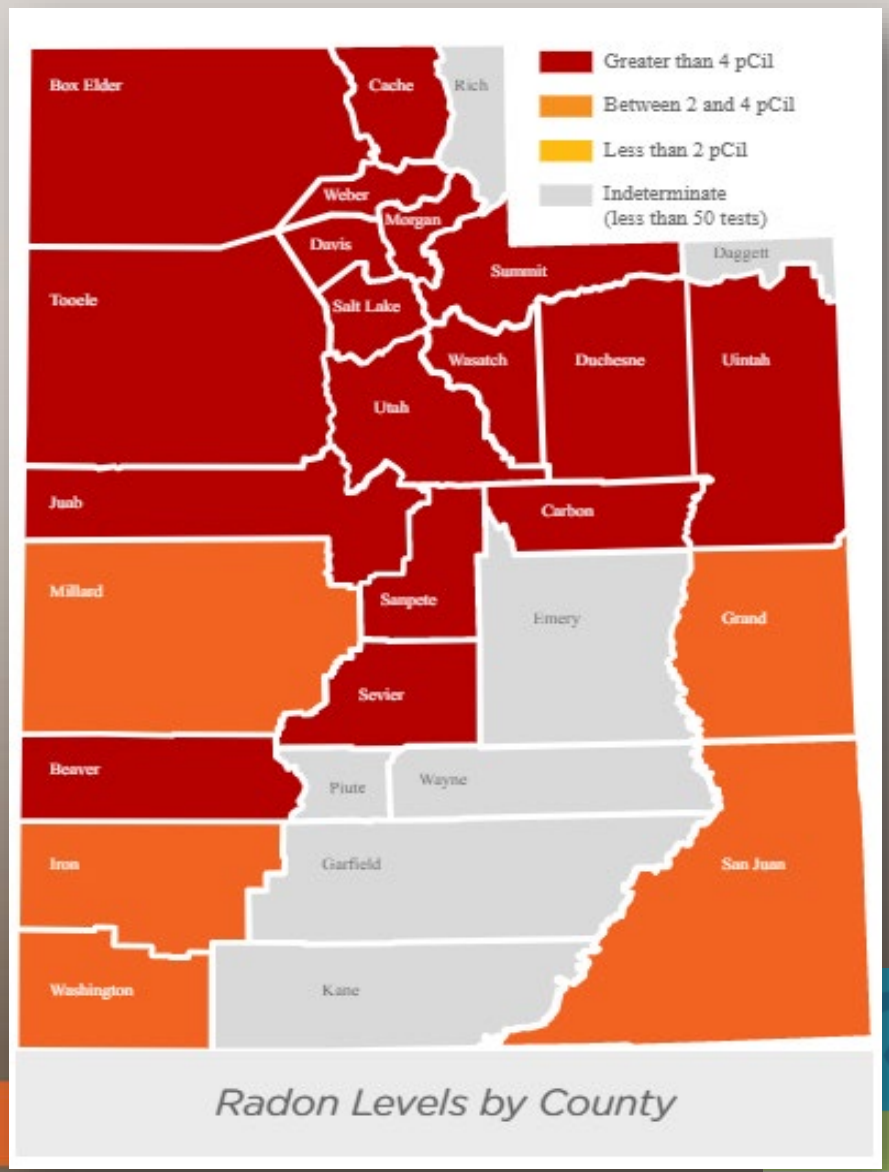
Evaluate Appropriate Level of Indoor Radon Gas –

- Commission a study to evaluate the EPA's greater than 4.0 pCi/L radon gas action limit
- Decide whether Utah should adopt a stricter radon gas action limit and the subsequent impact

Helping At-Risk Populations

Rural Areas and Low Income Populations





Public Awareness

- Increase Homebuyers Awareness of Radon Gas Hazards
- Increase Utah Student Awareness of Radon and other Natural Hazards
- Increase Public Awareness of Radon Gas Hazards
- Increase Public Access to Indoor Radon Gas Test Data

✓ Test Schools and Daycares for Radon

✓ Test Prisons and Public Buildings for Radon

Mitigation

- Reduce Utahns' Exposure to Indoor Radon Gas in New Construction
- Reduce Utahns' Exposure to Indoor Radon Gas
- Increase Public Access to Indoor Radon Gas Test Data
- Increase Understanding of Background Radon Levels in Utah
- Evaluate Appropriate Level of Indoor Radon Gas

Questions

R. William Keach, II, P.G. (Director, Utah Geological Survey)
Dr. Steve D. Bowman, P.E., P.G., (Geologic Hazards Program Manager)
Jessica J. Castleton, P.G., M.S. (Geologic Hazards Program Senior Geologist)
Eleanor Divver (Radon Program, Utah Department of Environmental Quality)