



**BC LUNG
FOUNDATION**

RADON AND LOCAL GOVERNMENT: Municipal Law Powers in BC



Legal Brief No. 9. Healthy Indoor Environments

**Author: Noah Quastel LLB LLM PhD
Director, Law and Policy,
Health Indoor Environments,
British Columbia Lung Foundation**

Revised November 16, 2021

This project was made possible by funding from:



Table of Contents

1.	INTRODUCTION	3
2.	BROAD POWERS	5
3.	PLANNING FOR RADON	7
4.	COLLABORATION, CONSULTATION AND PARTNERSHIPS	9
5.	EDUCATION, AWARENESS, AND VOLUNTARY TESTING AND MITIGATION	10
6.	GOVERNMENT OPERATIONS AND ITS OWNED SOCIAL HOUSING	12
7.	ENFORCING BUILDING CODES	13
8.	LOW RADON REQUIREMENTS IN PUBLIC SPACES	15
9.	STANDARDS OF MAINTENANCE/HOUSING STANDARDS	15
10.	ENERGY EFFICIENCY RETROFITS	16
11.	NEW DEVELOPMENT AREAS	18
12.	CONCLUSION	18

About our program. BC Lung's Healthy Indoor Environments program is focused on providing education, resources, and policy options for addressing priority indoor air pollutants in British Columbia. Canadians spend 90% of their day indoors, with about 70% at home and 20% at work or school. The air we breathe indoors can contain particulates, gases, allergens and fumes that can significantly affect our health in both the short and long term. Knowing the main indoor air pollutants, their sources, and how to reduce them are key to reducing harm to our health. Radon has been identified as the leading environmental carcinogen in Canada. For more information visit our website at <https://bclung.ca/programs-initiatives/healthy-indoor-environments-program>

1. Introduction

Radon gas is a naturally occurring radioactive gas, emanating from the ground and often entering and remaining in buildings. Radon exposure is the leading cause of lung cancer after smoking, and accounts for an estimated 16 percent of lung cancer deaths in Canada.¹ Testing for radon in a home is inexpensive—do it yourself kits are available (without subsidy) for between 30 and 100 dollars. If tests show elevated radon levels, there are relatively inexpensive and very effective ways to reduce radon exposure. Professional mitigators usually take 1 to 2 days to install a radon mitigation system in homes, and at an average cost of 2,900 dollars, reliably reduce levels to below Canada’s Radon Guideline of 200 Bq/m.³

Governments can take a positive role in helping individuals avoid risks and Canadians expect health and safety standards for their homes, workplaces, and recreational spaces (such as community centres, restaurants and cinemas). Law and policy to address radon has been slow to develop in Canada, despite ample precedent in Europe and American states. Despite a lack of explicit radon policies by the provinces there have been some gradual changes that impact on BC, including:

- Health Canada’s National Radon Program has worked on public education, established the Canadian Radon Guideline, conducted a major survey in 2012 that estimated 7% of homes in Canada have radon levels above that Guideline,² and helped form a certification system for radon testing and mitigation professionals—the Canadian National Proficiency Program (C-NRPP). However, hard law has been left to provinces and municipalities: Radon primarily affects the indoor built environment which is often covered by specific provincial law and regulations that relate to building codes, real estate transactions, residential tenancies, schools, care facilities, and workplaces.
- Most provinces, including British Columbia now include some type of radon resistant construction techniques in their Building Codes.
- In many provinces, --and only very recently in British Columbia-- when people buy and sell real estate, radon appears on the Property Disclosure Statement. Real estate agents in BC now receive special education on radon and have been instructed to treat radon as a latent defect by both the British Columbia Real Estate

¹ Chen, J., Moir, D. and Whyte, J., 2012. Canadian population risk of radon induced lung cancer: a re-assessment based on the recent cross-Canada radon survey. *Radiation protection dosimetry*, 152(1-3), pp.9-13.

² Health Canada, 2012 Cross Canada Survey of Radon Concentrations in Homes, Final Report. available at <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/radiation/cross-canada-survey-radon-concentrations-homes-final-report-health-canada-2012.html> accessed January 20, 2020

Association and the new real estate regulator—the British Columbia Financial Services Authority.³

- Some tribunals that handle landlord-tenant disputes now see high radon as something landlords must fix.

Despite these broad measures radon often remains unacknowledged as a problem, and a vast majority of Canadian households (93%) have never tested for radon.⁴ Local radon policies are needed to ensure progress in reducing radon exposure.

Local governments are well positioned to take a leadership role on radon, taking concrete steps that will not only help prevent lung cancer and save lives but help get the ball rolling on broader political action. Even when provinces rise to the challenge, local governments will still be important players in radon action. Municipalities enforce building codes, permit construction, regulate indoor spaces (as they currently do for smoking), and uphold standards of maintenance for rental accommodation. Radon fits within a variety of policy platforms municipalities and regional districts already use, such as sustainability planning, housing policies, healthy built environments, standards of maintenance and clean air bylaws. Local governments should also be considered about liability issues if they ignore radon. Municipalities are employers and owners and operators of buildings which have general duties to keep spaces safe. There may be liability for negligent inspection. As many municipalities become focused on energy efficiency they should also consider how this relates to radon. Building efficiency often relies on controlling indoor air flow, but since the 1980s building scientists have been aware that “tight” buildings can prevent radon from escaping into the outdoors.⁵ Energy efficiency programs thus need to be coupled with attention to ventilation rates as well as testing and mitigating for radon.⁶

As this legal brief will make clear, BC’s local government laws empower to municipalities and regional districts to take action. Local governments in BC generally have wide scope to address radon, even in the absence of action by higher orders of government. We have drawn from radon policies and best practices from across North America and Europe to find important steps local governments might take. In what follows we spell out the broad powers of local governments to act on radon, and then work

³ Devji, S. 2020. Live Online Course and FAQ Created for REALTOR® Education About Radon Gas. British Columbia Real Estate Association. Available at <https://www.bcrea.bc.ca/education/live-online-course-and-faq-created-for-realtor-education-about-radon-gas/> accessed July 30, 2020; ³ British Columbia Financial Services Authority 2021. Radon Precautions Guidelines. Available at <https://www.bcfsa.ca/industry-resources/real-estate-professional-resources/knowledge-base/guidelines/radon-precautions-guidelines> accessed November 15, 2021

⁴ See Statistics Canada, 2017. Knowledge of radon and testing: Table: 38-10-0086-01.

⁵ United States General Accounting Office, 1986. Indoor Radon Air Pollution. GAO/BCED-S6-170, at <https://www.gao.gov/assets/150/144501.pdf> accessed June 9, 2020, at page 12, more recently see Shrubsole, C., Macmillan, A., Davies, M. and May, N., 2014. 100 Unintended consequences of policies to improve the energy efficiency of the UK housing stock. *Indoor and Built Environment*, 23(3), pp.340-352; Stanley, F.K., Zarezadeh, S., Dumais, C.D., Dumais, K., MacQueen, R., Clement, F. and Goodarzi, A.A., 2017. Comprehensive survey of household radon gas levels and risk factors in southern Alberta. *CMAJ open*, 5(1), p.E255.

⁶ Arvela, H., Holmgren, O., Reisbacka, H. and Vinha, J., 2013. Review of low-energy construction, air tightness, ventilation strategies and indoor radon: results from Finnish houses and apartments. *Radiation protection dosimetry*, 162(3), pp.351-363.

through key interventions on radon and show how municipal law in BC supports action on each item.

2. Broad Powers

Local governments are creatures of statute and possess only the powers delegated to them by provincial legislatures. This means that they must act within the legislative constraints the province has imposed on them. If they do not, affected persons can go to court to ask judges to set aside decisions or bylaws.⁷ The good news, though that since the 1990s, Canadian courts have shown an increasing willingness to afford local governments greater freedom to interpret their legal powers, recognizing they are elected representatives.⁸

In BC, there are slightly different laws governing municipalities and regional districts. The *Community Charter* specifies broad powers for municipalities including a range of powers that might touch on radon—powers to make bylaws to regulate, prohibit and impose requirements in relation to

- public places⁹
- public health¹⁰
- protection of the natural environment¹¹
- the health, safety or protection of renters¹²
- the protection and enhancement of the well-being of its community in relation to disturbing the quiet, peace, rest, enjoyment, comfort or convenience of individuals or the public¹³
- Emissions of gas... that is liable to foul or contaminant the atmosphere¹⁴
- unsanitary conditions on property¹⁵
- buildings and other structures¹⁶
- regulation of businesses¹⁷

The *Community Charter* also specifies that powers conferred on municipalities must be interpreted broadly in accordance with the municipal purposes,¹⁸ which include among various items, providing for good government of its community, and fostering the economic, social and environmental well-being of its community.¹⁹

⁷ Catalyst Paper Corp. v. North Cowichan (District) 2012 SCC 2, at para. 11; Canadian Plastic Bag Association v. Victoria (City), 2019 BCCA 254 at para 40

⁸ Shell Canada Products Ltd. v. Vancouver (City), [1994] 1 SCR 231, 1994 CanLII 115; 114957 Canada Ltée Spraytech, Société d'arrosage v. Hudson (Town), 2001 SCC 40; United Taxi Drivers' Fellowship of Southern Alberta v. Calgary (City) (2004), 2004 SCC 19 .Croplife Canada v. Toronto (City), 2005 CanLII 44363 (SCC); Catalyst Paper Corp. v. North Cowichan (District), 2012 SCC 2, [2012] 1 S.C.R. 5

⁹ Community Charter 8(3)(b)

¹⁰ Community Charter 8(3)(i)

¹¹ Community Charter 8(3)(j)

¹² Community Charter s. 8(3)(g) and 63(f)

¹³ Community Charter s. 8(3)(h) and 64 (b) ;

¹⁴ Community Charter s. 8(3 (h) and 64(c)

¹⁵ Community Charter s. 8(3 (h) and 64(g)

¹⁶ Community Charter s. 8 (3)(l)

¹⁷ Community Charter s. 8(6)

¹⁸ Community Charter, s. 4

¹⁹ Community Charter, s. 7

The *Local Government Act* sets up a similar (but not identical) framework for local governments. As with municipalities under the Charter, regional districts are recognized as independent, responsible, and accountable order of government, with purposes that include, inter alia, providing good government for its community, providing services, and fostering the current and future economic, social and environmental well-being of its community.²⁰ Powers are to be interpreted broadly in accordance with regional district purposes.²¹ There are also specific powers to enact bylaws and other measures which may support action on radon including for

- public health²², and,
- for the purpose of the health, safety or protection of persons or property,
 - ⇒ building construction, alteration, and repair²³
 - ⇒ heating and air conditioning²⁴
 - ⇒ maintenance standards for rental units²⁵

There are also provisions for preventing, abating and prohibiting nuisances, which extent to controlling “offensive or unwholesome matter to collect or accumulate around their premises” and “emission of gas”.²⁶ It is likely that only a few scenarios would allow a regional district to use the nuisance provisions. The courts have said that a power to prevent, abate, and prohibit nuisances does not enable the council to define what constitutes a nuisance. Acts prohibited must be nuisances at law.²⁷ Classic cases of air pollution such as noxious odours from a sawmill can be public nuisances.²⁸ Radon, once it leaves a building, quickly dilutes, so will very rarely constitute a public nuisance like typical cases of air pollution. However, radon may at times constitute a private nuisance, in the sense of an unreasonable interference with the use and enjoyment of land.²⁹ For instance, radon in one unit of a strata may causes problems for other strata unit holders—suggesting might use these provisions to justify radon provisions for multi-family buildings.

There are two important caveats to the above mentioned broad powers to address radon. The first relates to “concurrent authority” in areas of public health for both municipalities and local governments.³⁰ This will require the local government to consult and obtain approval from the provincial government, and particularly the relevant cabinet minister. Municipalities also have bylaw making powers for environmental concerns, but

²⁰ Local Government Act, s. 185

²¹ Local Government Act, s. 187(1)

²² Local Government Act, s. 304(1);

²³ Local Government Act, s. 298(1)(a) and 298 2(d)

²⁴ Local Government Act, s. 298(1)(b), and 298 (2)(d)

²⁵ Local Government Act, s. 298(1)(n) and 298 (2)(d)

²⁶ (Local Government Act, s. 325

²⁷ Re Brittain Steel Fabricators and New Westminster By-law 3869(1963), 1963 CanLII 516 (BC CA); Prestige Video Productions (1982) Ltd. v. Victoria (City), 1982 CanLII 718 (BC SC)

²⁸ M. Faieta et al. Environmental Harm: Civil Actions and Compensation. (Toronto: Butterworths, 1996), p. 46-47; cited in Gage, A. and Saha, S. 20006. The Clean Air Bylaws Guide. Westcoast Environmental Law, Vancouver

²⁹ Christensen v. District of Highlands, 2000 BCSC 196

³⁰ Local Government Act, s. 304(2); Community Charter, s. 9

this is also an area of concurrent authority. While provisions around nuisance do not fall into concurrent authority, these may only capture part of the radon problem (e.g. multi-family buildings). BC courts have been generous in allowing that where there is more than one purpose the fact that one may be beyond a local governments power does not thereby prevent action.³¹ Courts will only look to a dominant purpose as a means of limiting the scope of municipal power when where there is legislative direction that precludes overlap between the municipal power and provincial law.³² Nevertheless, we advise that local governments should approach radon through working with health authorities and the provincial government.

The second issue concerns overlap with provincial laws—local governments should be mindful of existing provincial rules. The basic rule is that a municipal bylaw is invalid if it is inconsistent with a provincial law; however, there is no inconsistency as long as it is possible for a person to comply with both the municipal bylaw and the provincial law.³³ For radon, there are already provisions in the *Building Code* relating to radon rough-ins in new construction. These are not, however, provisions that relate to indoor air quality, suggesting local governments could take further steps to ensure people are not exposed to elevated radon in indoor spaces. There is a 2004 Consultation Agreement which states that the provincial government will not grant permission to municipal authorities to enact bylaws with respect to establishing air quality standards.³⁴ We do not think this applies in the case of radon. The agreement is clearly is related to the complex provincial and federal frameworks that handle ambient air quality (including the *Environmental Management Act*, S.B.C. 2003, c. 53) and for which municipal bylaw making could erode harmony of standards. Alternatively, there currently are very few explicit indoor air quality laws operative in BC (outside of some threshold limits for workplaces). Further, Health Canada has already set radon guidelines, local governments would be acting to enforce them.

1. Planning For Radon

There is a long history in Canada of local governments engaging in long term pro-active planning, as found in long term land use plans, Sustainability Plans, Healthy Community Strategies or housing initiatives. Local governments not only have the power to include radon in these plans, but doing so follows from existing mandates to plan for housing and protection of the environment. In turn, approaching radon through systematic plans can allow for a local government to take a holistic approach and think through important steps for reducing radon in the built environment. This can involve long term goals, education, awareness and support for testing, and specific rules to ensure elevated radon is mitigated through businesses, homes and other buildings within a local governments' jurisdiction. This guide sets out discreet actions that can be combined to form radon plans.

³¹ *Koslowski v. West Vancouver (Municipality)* (1981), 1981 CanLII 557 (BC SC), 26 B.C.L.R. 210 at 222 (S.C.)

³² 1193652 B.C. Ltd. v New Westminster (City), 2020 BCSC 163

³³ Community Charter, s. 10

³⁴ . 2004 Consultation Agreement, Environment and Wildlife between the Union of BC Municipalities and the Ministry of Water, Land & Air Protection & Ministry of Community, Aboriginal & Women's Services section 5.1.7 available at <https://www.ubcm.ca/EN/main/about/general-information/mou-protocols/mou-by-subject.html> accessed August 3, 2020.

The *Local Government Act* calls for the creation of Official Community Plans (“OCPs”) by municipalities. These are statements of objectives and policies to guide decisions on planning and land use management over decades. Generally these have very broad purposes, such as to “promote human settlement that is socially, economically and environmentally healthy and that makes efficient use of public facilities and services, land and other resources”.³⁵ There are detailed prescriptions concerning contents and procedure for their creation.³⁶ The *Local Government Act* provides an open ended list of topics that OCPs “should work towards” which, considering radon, might include:

- reducing environmental pollution³⁷
- planning for energy supply and promoting efficient use, conservation, and alternative forms of energy³⁸
- public health and safety³⁹
- adequate, affordable, and appropriate housing⁴⁰
- planning for lands that are subject to hazardous conditions or that are environmentally sensitive to development⁴¹

Regional districts can create OCPs areas not covered by municipalities (for instance covering unincorporated communities). Alternatively, regional districts can create regional growth strategies which have much the same purposes, but have strict requirements to plan for future development of a region and consider population growth and housing (among a number of concerns)⁴² and require the involvement of member municipalities, provincial agencies and others.⁴³

A core reasons for longer term planning is to ensure provision is made for long term spatial planning of cities, ensuring there is space for roadways, parks, and broad objectives in zoning—e.g. determining where businesses are located and the height and density of buildings. From the 1990s onwards urban planning theory and municipal law have begun to include a wide range of environmental and social values in OCPs along with spatial planning. As such, long term plans will broadly provide “a policy framework for Council by addressing issues such as housing, transportation, infrastructure, parks, economic development and the natural and social environment”.⁴⁴ Cities will now commonly provide a series of overlapping and coordinated strategies covering areas of sustainability, health and housing as part of the planning process.

For instance, Kelowna, British Columbia’s Official Community Plan (2011) is based on “a vision for a sustainable city, with a balance between environmental protection,

³⁵ BC Local Government Act, s. 428.

³⁶ British Columbia, Local Government Act, RSBC 2015, c 1. s. 471 to 478;

³⁷ BC: Local Government Act RSBC, c. 1, 471(2) and 428(2)(g);

³⁸ BC: Local Government Act RSBC, c. 1, 471(2) and 428(2)(m);

³⁹ BC Local Government Act, RSBC, c. 1 471(2) and 428(1);

⁴⁰ BC Local Government Act, 471(2) and 428(2)(h);

⁴¹ British Columbia, Local Government Act, RSBC, c. 1 s. 428((2)(k), 471(2), 473(1)(d); c

⁴² Local Government Act, s. 429

⁴³ Local Government Act, s. 434

⁴⁴ As described by the City of Kelowna, 2020. Kelowna 2040: Our Kelowna as We Grow at <https://www.kelowna.ca/our-community/planning-projects/long-range-planning/official-community-plan> accessed March 20, 2020

economic growth, social development and cultural vibrancy”.⁴⁵ The OCP includes in its goals that of addressing the housing needs of all residents. Objectives include “Support the creation of affordable and safe rental, non-market and/or special needs housing”.⁴⁶ The OCP includes specific provisions on the natural environment, and also works in concert with other environmental planning initiatives. For instance, the OCP includes goals of improving energy efficiency and reducing greenhouse gas emissions (Objective 6.2). The Community Climate Action Plan (2012, updated in 2018) further develops these initiatives. As well, Kelowna also has a Healthy City Strategy (2014) that seeks to provide a framework to change the conditions that impact the health and well-being of residents by taking action across areas of housing, neighbourhood design, inclusivity, natural environments, food systems, and transportation networks. The Healthy Housing Strategy (2016) further develops housing issues, recognizing that “It is known that affordable housing makes a powerful, positive contribution to the economy, to a healthier community, to healthier people, and is pivotal for a sense of belonging”.⁴⁷ The Strategy recognizes that healthy housing must also be of “quality”: “Quality housing is both adequate and suitable. 'Adequate' refers to housing that is in good physical condition and that is of an appropriate size. Typical challenges here result from indoor health and safety hazards and overcrowding”.

Radon action is an obvious addendum to these strategies and easily fits into their mandate. One example where radon has been included in such plans is in Thunder Bay, Ontario, where radon action is incorporated in the City’s EarthCare Sustainability Plan 2014-2020.⁴⁸

2. Collaboration, Consultation and Partnerships

Public participation is now widely understood as an important component of policy development. It helps build trust and foster relationships, strengthens democracy and allows for the voices to be heard of people who may be affected by decisions. Engaging with different perspectives provides opportunities for learning, testing assumptions, highlighting unforeseen issues and gaining insight from people who may have unexpected understanding of complicated systems. As we will discuss here, there are also some legal requirements for consultation and public hearings.

OCPs require, before they are adopted, a process of public hearings, as well as specific procedures before and during the hearing.⁴⁹ The courts also apply common-law procedural and due process requirements for public hearings. For example, the public

⁴⁵ City of Kelowna, 2018. Facts in Focus: Environment available at https://www.kelowna.ca/sites/files/1/ff-environment_.pdf at p. 2

⁴⁶ Kelowna 2030 - Official Community Plan, Bylaw No.: 10500, s. 5.9; available at <https://www.kelowna.ca/city-hall/city-government/bylaws-policies/kelowna-2030-official-community-plan>

⁴⁷ (City of Kelowna, 2016. Healthy Housing Strategy, https://www.kelowna.ca/sites/files/1/docs/logos/healthy_housing_strategy_final_reduced_size.pdf at p. 5)

⁴⁸ Thunder Bay, 2015. Earthcare Sustainability Plan available at <https://www.thunderbay.ca/en/city-hall/resources/Documents/2014-2020-EarthCare-Sustainability-Plan.pdf> accessed January 20, 2020. For radon testing see Thunder bay Health Unit. 2020. Radon. At <https://www.tbduh.com/radon> For building permitting see City of Thunder Bay, 2017. Building Services Division, Ontario Building Code Updates, at <https://www.thunderbay.ca/Modules/News/index.aspx?feedId=f048d657-68bb-428f-adfb-4671622b813b&newsId=4b579f5b-3194-48aa-9a78-4a74d9437e08> accessed January 23, 2020.

⁴⁹ British Columbia Local Government Act, s. 464-8

should have clear notice of the hearing, and have access to any relevant reports that the council will consider in making its decision.⁵⁰ Local governments will also have a duty to consult with First Nations on decisions which impact on them.⁵¹

As mentioned before, the Community Charter also provides some areas (or ‘spheres’) to have involve the concurrent authority of local governments and the provinces, including public health⁵² and environment.⁵³ There is a special procedure for municipalities to inform the provincial government of intended changes and, in the case of public health bylaws, to consult with regional health boards or medical health officers.⁵⁴ British Columbia courts have struck down bylaws that required but did not obtain provincial approval.⁵⁵ In practice this has meant that there is considerable coordination between municipal and health planners over Healthy Community/Healthy City strategies. For instance, the City of Vancouver and Vancouver Coastal Health (the local authority) signed a memorandum of understanding concerning the planning process for the Healthy City Strategy.⁵⁶

Local governments will also have an important persuasive role in relation to other entities but which they cannot fully control. For instance, school boards exist at the municipal level but are typically formally separate from city councils. However, school boards have an important role in driving testing and mitigating schools for radon. City governments can collaborate with school boards as part of ensuring radon is addressed in public buildings. As well, local libraries have proven to be able to offer lending programs for radon testing devices. Municipal and regional libraries are typically formally independent from municipal councils and regional boards, responsible for their own administration and with their own boards. However, municipalities and regional districts may play a role in appointing boards.⁵⁷

1. Education, Awareness, and Voluntary Testing and Mitigation

Local governments will have a broad mandate to address radon through providing services to the public. Reforms in the late 1990s and early 2000s gave most municipalities in Canada considerable leeway to function autonomously. Along with broad purposes (as discussed above), provincial legislation gives municipalities the power of a “natural person”.⁵⁸ This means that a municipality can do anything a natural person is legally entitled to do in the manner that a natural person can. For instance, mandating action as part of a bylaw or imposing levies is a special power accorded to municipalities by legislation (and with prescribed processes) but entering into a contract or an agreement

⁵⁰ Canadian Pacific Railway Co. v. Vancouver (City), 2006 SCC 5

⁵¹ Decembrini, A. and Imai, S. 2019. Supreme Court of Canada Cases Strengthen Argument for Municipal Obligation to Discharge Duty to Consult: Time to Put Neskolith to Rest, 2019 CanLIIDocs 364. Alberta Law Review.

⁵² Community Charter s. 9(1)a and 8(3)(i)

⁵³ Community Charter s. 9 (1)b and 8 (3) (j)

⁵⁴ Community Charter 9(1)(a), 9(3)(a), 9(3)(4) and the Public Health Bylaws Regulation)

⁵⁵ Canadian Plastic Bag Association v. Victoria (City), 2019 BCCA 254 (CanLII)

⁵⁶ City of Vancouver and Vancouver Coastal Health, 2013. A healthy Vancouver for All: A Healthy City Partnership MOU between the City of Vancouver and Vancouver Coastal Health. 8 Mrch 2013. at <https://vancouver.ca/files/cov/MOU-Healthy-City-Strategy-March-2013.pdf> also see generally PlanH materials).

⁵⁷ British Columbia, Library Act, RSBC 1996, c 264 s.4; 5, 14, 16

⁵⁸ British Columbia, Community Charter 8(1)

with another entity is something a natural person can do.⁵⁹ The doctrine enables municipal governments to perform governance, management, and administrative activities that fall within the general scope of their jurisdictional authority without the need for expressed or explicit legislative authority regarding either precisely what to do or precisely how to do it.⁶⁰ The *Community Charter* also allows a municipal to provide any services the council considered necessary or desirable for the municipality.⁶¹ Regional districts also have broad corporate powers, that while not full “natural person” powers, do extend to entering into making agreements to undertake services and manage its own property, and, quite open-endedly, to generally “provide assistance for the purpose of benefiting the community or any aspect of the community”.⁶²

Local governments can help advance radon education, awareness and voluntary testing and mitigation in numerous ways outside of bylaw-making or planning powers. This can include providing education on websites, publishing informational guides, hosting information sessions and talks, selling test kits, or offering subsidies. Some cities, such as Edmonton have also focused attention on Radon through city proclamations, e.g. proclaiming November “Radon Action Month”, and providing guides through Building Services.⁶³ In offering subsidies, regional districts do have particular limits, in that they are barred from providing assistance to an industrial, commercial or business undertaking.⁶⁴ While this provision has not been tested in court, it likely suggests any subsidies for testing and mitigation be directed broadly at the general public.

A particularly useful tool local governments can work towards is community testing. Some geographic locations have much greater radon potential than others and homeowners and businesses are much more likely to test if they have evidence that radon is a problem in their community. Local officials can take a relatively small sample (such as 500 buildings) to estimate radon prevalence or combine their efforts with other associations which do some testing and collect radon data, such as the BC Lung Foundation, Donna Schmidt Lung Cancer Prevention Society⁶⁵ or the federal radon education program, Take Action on Radon, which has a 100 Radon Test Kit Challenge it conducts with communities.⁶⁶ This can help professionals such as realtors, building inspectors, and employers be alert to local radon risks. Municipalities can be identified as a priority in the future for targeted education campaigns, subsidies, incentives and other interventions. Studies can also contribute to improving databases and maps which provide easy visual cues that radon is an issue. For instance, C-NRPP is developing a radon map, based on reports from mitigators, and BC Centre for Disease Control is building a Radon Repository.

⁵⁹ St Paul (County) No 19 v Bolland, 2006 ABCA 55, Prairie Communities Development Corp. v. Okotoks (Town), 2011 ABCA 31

⁶⁰ Garcea, J. (2004). Modern Municipal Statutory Frameworks in Canada. *Revue Gouvernance*, 1 (1). <https://doi.org/10.7202/1039192ar> at p. 6

⁶¹ BC: Community Charter s. 8 (2)

⁶² Local Government Act, s. 263

⁶³ https://www.edmonton.ca/city_government/environmental_stewardship/environmental-air-quality.aspx

⁶⁴ Local Government Act, s. 273

⁶⁵ Donna Schmidt Lung Cancer Prevention Society, 2020. Website. At <http://dsradonprevention.org> accessed August 4, 2020

⁶⁶ Take Action on Radon, 2020. 100 Radon Test Kit Challenge. Available at <https://takeactiononradon.ca/100-radon-test-kit-challenge/> accessed August 4, 2020

6. Government Operations and Its Owned Social Housing

Municipalities and other local governments have good reasons to consider radon within their own operations. A government might choose to construct its own buildings to higher standards as a way of meeting legal obligations, acting ethically, leading by example, or to help support local environmental industries. Local governments will be able to draw on their own natural person and corporate powers in taking such action.

Local governments have legal powers—and regularly do-- hire employees (again, as part of their natural person powers). Once a government does so, it will then have responsibilities as employers, and these extend to cover radon.

Employment law in British Columbia generally does not mention radon.⁶⁷ However, a number of clauses might be relevant. The Occupational Health and Safety Regulation, along with very specific provisions for diverse industries, also includes “general duty clauses” that in broad terms require employers to create safe workspaces and minimize hazards.⁶⁸ These broad measures are sufficient to cover radon. More specifically, the federal government has created the Naturally Occurring Radioactive Materials (NORM) Guidelines, which put strict limits for how much radiation exposure a normal worker (e.g. one not in a job specifically designed to handle radiation) might face.⁶⁹ This implies strict controls on radon. Ontario has set an example and issued guidelines for how NORM Guidelines work together with general duty clauses to require radon reduction in workplaces to below 200 Bq/m³ where possible.⁷⁰ This should also apply in BC. As well BC has workplace requirements for ventilation to remove dangerous gases.⁷¹

Local governments also have powers to own, build, and administer housing, often in conjunction with provincial and federal housing initiatives.⁷² A significant part of Canada’s public housing infrastructure is owned by municipalities and regional districts, with such large-scale suppliers as the Metro Vancouver Housing Corporation. As housing providers, municipalities need to ensure the people who live in their buildings are not exposed to elevated radon. Laws of general application such as landlord-tenant law will apply to municipal housing providers. BC’s *Residential Tenancy Act* applies to government owned buildings and specifies that a landlord must provide housing that is safe and in good repair.⁷³ In Ontario and Quebec tribunals have found that similar clauses give tenants the right to have elevated radon addressed.⁷⁴ Tenants will also be protected by Occupiers

⁶⁷ With the one exception of the Workers Compensation Act, S.B.C. 2019, c. 1 listing, as an occupational disease (e.g. to help workers ease proof of causation) “Primary cancer of the lung” where there is “prolonged exposure to... radon gas and its decay products” see s. 137 and Schedule 1, Item 6(7). This is likely a result of radon being an issue for miners.

⁶⁸ British Columbia, Occupational Health and Safety Regulation, BC Reg 296/97, Part 4 - General Conditions - 296/97 at s. 4.1

⁶⁹ Government of Canada, 2013. Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials (NORM). ISBN: 978-1-100-23019-1, Cat. No.: H129-34/2013E-PDF. 130465 available at <https://www.canada.ca/en/health-canada/services/publications/health-risks-safety/canadian-guidelines-management-naturally-occurring-radioactive-materials.html>

⁷⁰ Ontario Ministry of Labour, Training and Skills Development, 2016. Radon in the workplace available at https://www.labour.gov.on.ca/english/hs/pubs/gl_radon.php

⁷¹ British Columbia, Occupational Health and Safety Regulation, BC Reg 296/97, Part 4 - General Conditions - 296/97 at s. 4.72 (1);

⁷² British Columbia, BC Ministry of Lands, Parks and Housing Act, RSBC 1996, c 307, s. 6; Local Government Act, RSBC 2015, c 1 s. 483;

⁷³ British Columbia, Residential Tenancy Act S.B.C. 2002, c. 7 s. 32(1))

⁷⁴ CET-67599-17 (Re) 2017 CanLII 60362 (ON LTB); Vanderwerf v. Dolan, 2019 QCRDL 37417

Liability law which gives a right to sue for damages where injuries such as lung cancer are caused by unsafe premises.⁷⁵

7. Enforcing Building Codes

Building Code enforcement is a key focus of municipal governments. The provisions of the Building Code are incorporated as municipal bylaws pursuant to section 4 of the *Building Act*, SBC 2015, c. 2.⁷⁶

The BC Building Code now includes radon requirements in listed municipalities—typically east of Coast Mountains. The Code requires a “radon rough-in” which includes a hole in the building foundation slab and a vent pipe that travels through the building and exits outside.⁷⁷ Radon professionals consider this a partial solution, and more robust measures include adding a fan and radon testing of a building before occupancy.⁷⁸ Municipalities potentially face a range of concerns over enforcing existing radon provisions or working to improve building standards in their community. BC’s municipal law framework gives local governments the powers to handle inspection.⁷⁹

Local governments can take a variety of steps to address radon in new construction. This includes having inspectors inform builders, homeowners and others when buildings do not have correct radon systems, and use enforcement powers to ensure new buildings have required radon mitigation systems in place. This can include denying occupancy permits to homes which do not comply with the Code.⁸⁰ The Ontario municipalities of Guelph, Kingston, and Loyalist Township now do this concerning radon.⁸¹

Local governments have historically faced liability for negligent inspection but legislation increases immunity. A series of high profile Supreme Court of Canada decisions established that, at common law, once a local government makes the policy decision to inspect building plans and construction, it owes a common law duty of care to person who might be impacted. Courts have thus found cities liable when inspectors failed to find design and construction flaws.⁸² Cities may also be added as parties where the liability of inspectors worked together with wrongdoing by developers.⁸³ While BC’s *Local Government Act*, s. 742 seeks to exempt municipalities,

⁷⁵ British Columbia, Occupiers Liability Act R.C.B.C 1996, c. 337.

⁷⁶ *Minster Enterprises Ltd. v City of Richmond*, 2020 BCSC 455 at note 5

⁷⁷ See BC Building Code, article 9.13.4.2 and Division B, Appendix C, Table C-4 Locations in British Columbia Requiring Radon Rough-Ins. Communities in the Coast Mountains or Lower Mainland include Abbotsford, Hope, Sechelt and Whistler

⁷⁸ Canadian Standard Board’s 2019 Radon control options for new construction in low-rise residential buildings. CAN/CGSB-149.11-2019

⁷⁹ Community Charter 8 (3)(l) and s. 54; Local Government Act, s. 298

⁸⁰ For municipalities, Community Charter s. 15, 54; for regional districts, see Local Government Act (298(1)(d));

⁸¹ City of Guelph, Radon Gas Mitigation Program, available at <https://guelph.ca/city-hall/building-permits-inspections/residential-building-permits/radon/> accessed April 7 2020. City of Kingston. Radon Gas Mitigation. At <https://www.cityofkingston.ca/resident/building-renovating/radon-gas-mitigation> accessed April 7 2020. Loyalist Township, Soil Gas

Mitigation Program. <https://www.loyalistship.ca/index.cfm/news-events/news/soil-gas-mitigation-program/> accessed April 7 2020.

⁸² *Rothfield v. Manolakos* [1989] 2 S.C.R. 1259; *Just v. British Columbia*, 1989 CanLII 16 (SCC), [1989] 2 SCR 1228; *Ingles v. Tutkaluk Construction Ltd.*, 2000 SCC 12 (CanLII), [2000] 1 S.C.R. 298

⁸³ *Ontario New Home Warranty Program v. Stratum Realty Development Corp.*, 2005 CanLII 1055 (ONSC); *Riverside Developments Bobcaygeon Ltd. v. Bobcaygeon (Corp. of the Village)*, 2004 CanLII 16046 (ONSC), 2005 CanLII 27598 (ONCA)

their councils, regional districts and their boards from liability, it applies only for failures to enforce a bylaw by civil proceeding or prosecution. A court decision ruled that a similar provision in the older *Municipal Act* did not apply to immunize a municipality against negligent building inspection.⁸⁴ In the 2010s there have been broad efforts by municipalities to reduce liability.⁸⁵ Beyond strict limitation periods⁸⁶, a municipal inspector's duty to inspect may be limited to inspecting plans and not actual structures, to ensure only that plans have been approved by certified engineers or architects.⁸⁷ That said, municipalities should still be on guard and take measures to ensure their inspectors are familiar with radon provisions.

For the most part, local governments do not have much control over the content of Building Codes. BC has uniform building code provisions, effectively removing municipal control over the contents of the Building Code.⁸⁸ Some cities, such as Castlegar, British Columbia, have tried to change their local building code to reflect concerns about radon, only to find the process replaced by provincial measures—as the government both imposed uniform requirements across the province (that included some radon provisions).⁸⁹

Local governments may also have powers to “trigger” Building Code provisions that relate to radon. The Building Code provides a list of municipalities where radon is known to be an issue (and wherein radon provisions apply).⁹⁰ On top of that, the Code provides that local authorities with jurisdiction can take steps to be added to this list.⁹¹ The Building Standards Branch will consider doing this if presented with high radon readings. A better approach is for municipalities to undertake community testing, using a sample (typically of 500 buildings) to estimate radon prevalence.

Local governments may also still have the option of negotiating voluntary compliance with builders. Generally, requirements for uniformity concerning Building Codes attach to mandatory requirements and “enactments” in bylaws. There is thus still the option of tying compliance to other benefits a municipality or regional district might

⁸⁴ *Wilson v. Robertson*, 1991 CanLII 757 (BC SC) Interpreting Municipal Act, Section 755.2 of the

⁸⁵ See *City of Kelowna*, 2009. Local Liability in Building Regulation. File No 0550-01 Available at [http://apps.kelowna.ca/CityPage/Docs/PDFs/Council%5CMeetings%5CCouncil%20Meetings%202009%5C2009-07-13/Item%20\(A.M.\)%204.2%20-%20Request%20from%20the%20City%20of%20Burnaby.pdf](http://apps.kelowna.ca/CityPage/Docs/PDFs/Council%5CMeetings%5CCouncil%20Meetings%202009%5C2009-07-13/Item%20(A.M.)%204.2%20-%20Request%20from%20the%20City%20of%20Burnaby.pdf); Provincial Response to the Resolutions of the 2013 Union of British Columbia Municipalities Convention. Available at <https://www.ubcm.ca/assets/Resolutions-and-Policy/Resolutions/2013%20UBCM%20Master%20Document.pdf> p. 18 to 19

⁸⁶ Local Government Act, s. 286

⁸⁷ Local Government Act, RSBC 2015, c 1 s. 742 and 743

⁸⁸ British Columbia, see Building Act, S.B.C., c.2, s. 5; see also A Guide to the Building Act, Building Act Guide Series, A2, at <https://www2.gov.bc.ca/gov/content/industry/construction-industry/building-codes-standards/building-act/building-act-guide> at p. 4, B1: What Local Governments Need to Know about the Building Act at https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/construction-industry/building-codes-and-standards/guides/baguide_sectionb1_june2016.pdf p. 53

⁸⁹ Beatty, M. 2013. Red flags raised over radon. *Castlegar News*; Castlegar, B.C. [Castlegar, B.C.]06 Apr 2013: 1.; Sinclair, J. 2013. Castlegar Radon Bylaw Progressing with Glacial Speed. *Castlegar News*; Castlegar, B.C. [Castlegar, B.C.]10 Dec 2013: 1. See also Building Act, SBC 2015, c 2 imposing uniform standards

⁹⁰ BC Building Code, Division B Appendix C Table C-4

⁹¹ BC Building Code, Division B, sec. 1.1.3.3 (2)

provide. For instance, a municipality might be able to use density bonus bylaws or land covenants to impose higher standards or offer subsidies and incentives.⁹²

8. Low Radon Requirements in Public Spaces

Through the 1990s and 2000s many municipalities and other local governments in Canada came to adopt bylaws prohibiting smoking in public spaces such as restaurants, shopping malls, workplaces, or parks. In some cases, these were described as “Clean Air Bylaws”.⁹³ In other cases they were part of more omnibus “Health Bylaw” that covered areas such as bans on pesticides, spitting in public, or boats discharging sewage.⁹⁴ “Clean Air” or “Health” bylaws could be expanded to include rules requiring testing and necessary mitigation of radon in public indoor spaces. Cities generally can also use business permitting powers to enforce health bylaws.

Typically, anti-smoking bylaws drew on explicit wording in provincial legislation allowing municipalities to pass smoking regulation. However, municipalities could expand clean air/health bylaws or create new radon bylaws on the basis of the very general powers to pass health related regulations (or, in some cases, general environmental powers). Courts now follow the principle of ‘subsidiarity’ which recognizes municipalities as democratically elected governments often close to and responsive to the needs of the people they serve. For instance, in *Hudson (2001)*⁹⁵ the town of Hudson banned cosmetic pesticides and relied provisions in Quebec’s City’s and Town’s Act that gave general powers to regulate for health. The Supreme Court of Canada invoked the subsidiarity principle to give wide scope to the town to interpret its powers.

Requiring public spaces to measure and to mitigate high radon will not prohibit normal business activity, prevent the operations of businesses or prohibit trade. Nor will it conflict with Building Codes: Regulating the health impacts of air is not the same as imposing structural requirements. While Building Codes can provide detailed prescriptions for how building should be built—and which can have the result of lowering radon levels or making it easier to do so-- this is different from a requirement concerning the quality of indoor air. There will not be conflict between complying with a low radon requirement and complying with the Building Code (indeed, they will likely work together).

9. Standards of Maintenance/Housing Standards

Renters are a particularly important group to consider in radon action, as they have little power or incentive to make changes to their home. BC municipalities have an important power to act through standards of maintenance bylaws that cover the conditions of property.

⁹² Bullhozer, B. 2017 The Building Act: What You Need to Know. Young Anderson Seminar Paper. at https://www.younganderson.ca/assets/seminar_papers/2017/The-Building-Act-What-You-Need-to-Know.pdf at p. 6

⁹³ Capital Regional District, Bylaw No. 3962, Capital Regional District Clean Air Bylaw No 1, 2014; Kelowna Bylaw #: 5980-86; Clean Indoor Air and Smoking Regulation Bylaw; City of Revelstoke Clean Air Bylaw NO. 2186;

⁹⁴ City of Vancouver, Health By-Law No. 9535; Leduc Bylaw No. 581-2004, Health Bylaw,

⁹⁵ 114957 Canada Ltée (Spraytech, Société d’arrosage) v. Hudson (Town), 2001 SCC 40, [2001] 2 SCR 241

The powers to create such bylaws may issue from general health and safety powers, but BC's municipal law framework also includes specific wording allowing local governments to make standards of maintenance bylaws.⁹⁶ In practice, many municipalities primarily focus on "community standards" that aim to create calm, ordered and quiet outdoor environments through attention to issues such as graffiti, garbage or noise. However, many municipalities include in these bylaws details on the inner environments, and so supplement provincial residential tenancies protections.⁹⁷ As well, the provincial government provides explicit guidance to municipalities that include indoor conditions, such as having plumbing in good working order.⁹⁸ Municipalities can add protection from high radon to such bylaws, creating a powerful tool for protecting renters.

A further step municipalities can take (one used in New Westminster, as well as Waterloo, Ontario) is to use the business license process to enforce standards of maintenance, with bylaws that permit the city to deny permits to landlords who do not maintain rental properties and which allow enforcement by medical officers of health, as well as building inspectors, and bylaw enforcement officers.⁹⁹

10. Energy Efficiency Retrofits

Green building programs are a core part of urban sustainability initiatives.¹⁰⁰ It is common for municipalities and regional districts to have green building programs covering city owned property,¹⁰¹ retrofits of existing homes,¹⁰² or policies that catalyze low or zero emissions in new developments.¹⁰³ As well, in BC a growing number of local governments—representing a majority of the provinces population-- are beginning to implement aspects of the Energy Step Code through incentives, such as building permit rebates or increased efficiency requirements in new buildings.¹⁰⁴ As well, five municipalities in BC own electricity

⁹⁶ For municipalities, Community Charter s. 8(3)(g) and 63(f); for regional districts BC Local Government Act, RSBC 2015, c 1 s. 298(1)(n)

⁹⁷ c.f. Winnipeg Neighbourhood Liveability By-law 1/2008, at Part 2; Montreal By-law concerning the sanitation, maintenance and safety of dwelling units (03-096)

⁹⁸ See BC Government, 2020. Standards of Maintenance Bylaw http://www.housing.gov.bc.ca/pub/htmldocs/pub_guide.htm; and BC Government, 2020. Standards of Maintenance Bylaw: Sample Bylaw. At http://www.housing.gov.bc.ca/pub/htmldocs/pub_sample.htm

⁹⁹ New Westminster, Business Regulations and Licensing (Rental Units) Bylaw No. 6926, 2004, upheld in 1193652 B.C. Ltd. v New Westminster (City), 2020 BCSC 163 (CanLII), City of Waterloo Rental Licensing Bylaw 2011-047, see also

¹⁰⁰ See, for instance 2020 Declaration for Resilience in Canadian Cities available at <https://www.2020declaration.ca>, Accessed June 8, 2020. Principle 19.

¹⁰¹ see for example City of Ottawa, 2020. Green Building at <https://ottawa.ca/en/living-ottawa/environment/climate-change-and-energy/green-buildings>, accessed June 9, 2020

¹⁰² Regional District of Central Kootenay, 2020. Regional Energy Efficiency Program, available at <https://rdck.ca/EN/main/services/sustainability-environmental-initiatives/energy/regional-energy-efficiency-program.html> accessed August 9, 2020

¹⁰³ City of Vancouver, 2020. Zero Emission Buildings. <https://vancouver.ca/green-vancouver/zero-emissions-buildings.aspx#zero-emissions-building-plan> accessed June 9, 2020

¹⁰⁴ See Energy Step Code: Building Beyond the Standard, 2020. Implementation Updates. At https://energystepcode.ca/implementation_updates/

utilities, including Nelson, New Westminster, Grand Forks, Penticton, and Summerland.¹⁰⁵ These can include efficiency programs.¹⁰⁶

Energy efficiency often relies on controlling indoor air flow, but since the 1980s building scientists have been aware that “tight” buildings can prevent radon from escaping into the outdoors.¹⁰⁷ Indeed, increasing airtightness can elevate mean radon concentrations by over 50%.¹⁰⁸ In newer homes there may be applicable radon standards in Building Codes, but in retrofits the Code may not be engaged. The result can be that radon issues are ignored and made worse.¹⁰⁹ Energy efficiency programs thus need to be coupled with attention to ventilation rates as well as testing and mitigating for radon.¹¹⁰ Radon policy should include measures to engage with energy retrofits as a way to reduce lung cancer rates and save lives, to help protect contractors from liability, but also to ensure there are no unnecessary conflicts between reducing carbon emissions and human well-being.

Municipalities can ensure that where they promote energy efficiency, they also draw attention to radon and other indoor air quality issues, explaining the possibility of unwanted effects of a tight home. Incentive and financing programs for efficiency and other green building improvements should include covering the costs of radon testing and mitigation. There are possibilities to help link energy retrofit and radon mitigation financing—for instance, with low interest loans which is paid back on monthly utility bills (sometimes called ‘on bill financing’).

Governments should also take care in adopting emerging energy efficiency standards without also introducing supplemental radon provisions. For instance, Passive House is a leading efficiency standard, but does not follow up to date guidelines for radon control, which has created problems in some buildings.¹¹¹ In addressing radon and efficiency, municipalities should be aware that “tightness” as an issue affects other indoor air quality concerns (such as exposure to volatile organic compounds or carbon monoxide). One way to help spread radon awareness and action is to make links to broader indoor environmental issues.

¹⁰⁵ New Westminster, 2020. Electrical Utility. Available at <https://www.newwestcity.ca/services/electrical-utility>; Grand Forks, 2020. Utilities. Available at <http://www.grandforks.ca/utilities/>; City of Penticton, 2020. Electrical services. <https://www.penticton.ca/city-services/utility-electrical-services/electrical-services> accessed August 4, 2020;

¹⁰⁶ Nelson Hydro, 2020. Ecosave Program, available at <http://www.nelson.ca/222/EcoSave-Program> accessed August 4 2020

¹⁰⁷ United States General Accounting Office, 1986. Indoor Radon Air Pollution. GAO/BCED-S6-170, at <https://www.gao.gov/assets/150/144501.pdf> accessed June 9, 2020, at page 12, more recently see Shrubsole, C., Macmillan, A., Davies, M. and May, N., 2014. 100 Unintended consequences of policies to improve the energy efficiency of the UK housing stock. *Indoor and Built Environment*, 23(3), pp.340-352.

¹⁰⁸ Stanley, F.K., Zarezadeh, S., Dumais, C.D., Dumais, K., MacQueen, R., Clement, F. and Goodarzi, A.A., 2017. Comprehensive survey of household radon gas levels and risk factors in southern Alberta. *CMAJ open*, 5(1), p.E255.

¹⁰⁹ Collignan, B., Le Ponner, E. and Mandin, C., 2016. Relationships between indoor radon concentrations, thermal retrofit and dwelling characteristics. *Journal of environmental radioactivity*, 165, pp.124-130.

¹¹⁰ Arvela, H., Holmgren, O., Reisbacka, H. and Vinha, J., 2013. Review of low-energy construction, air tightness, ventilation strategies and indoor radon: results from Finnish houses and apartments. *Radiation protection dosimetry*, 162(3), pp.351-363.

¹¹¹ Theoboldt, I. and Pedersen, S. 2015. Step-by-step deep energy retrofit to EnerPHit Standard of a Swedish detached house and a Danish workshop. available at http://passivhus.dk/wp-content/uploads/7PHN_proceedings/067.pdf accessed June 18, 2020; McCarron B, Meng X, Colclough S. A pilot study of radon levels in certified passive house buildings. *Building Services Engineering Research and Technology*. 2019 May;40(3):296-304.

11. New Development Areas

Local governments might consider radon in soil when siting, zoning, and permitting new housing.¹¹² There is good evidence and high correlation between radon in soil and radon in homes.¹¹³ Radon mitigation using sub-slab depressurization is usually sufficient to ensure indoor radon levels are below Health Canada Guidelines, even where radon levels are very high pre-mitigation. It is thus unlikely that local governments would need to prohibit housing due to high background radon levels. However, once an area is known to have radon there may be special attention given to ensuring elevated radon is avoided, such as requiring developers to conduct post-construction radon testing.

Municipal legislation generally does allow for specific site planning, including demarcating special development areas in an OCP and imposing specific restrictions due to hazards or health and safety concerns.¹¹⁴ This would likely require a local government to conduct its own radon tests of soil, given the time to comply with OCP process requirements. There are also more general land use permit provisions and radon testing could be included in more general site assessment work.¹¹⁵ BC's land use permit provisions extend to allowing a local government to itself undertaking work to correct an unsafe condition.¹¹⁶

12. Conclusion

Local governments in BC have many reasons to take action on radon, stemming from concern with health and safety. Local governments have broad powers to act in municipal law and can take a leadership role acting in concert with, and ahead of the provincial government. Local governments have the power to take concrete steps that will not only help prevent lung cancer and save lives but help get the ball rolling on broader political action. They can spread awareness, subsidize test kits and mitigation, conduct community testing, enforce building codes, permit construction, regulate indoor spaces (as they currently do for smoking), and uphold standards of maintenance for rental accommodation. Addressing radon is a way to avoid liability that municipalities may face as landlords, employers and owners and operators of buildings. Municipalities also face liability for negligent inspection—and as Building Codes are updated to include radon-resistant construction techniques, this creates new responsibilities for municipal building inspectors. Radon action can also fit into broader municipal planning and is a natural addendum to sustainability plans and healthy community strategies. Local governments can collaborate not only with provincial governments, but with local health authorities, school boards, libraries and lung health and cancer organizations. Above all, we feel that

¹¹² see BC Centre for Disease Control. 2018. Healthy built environment linkages toolkit: Making the links between design, planning and health, Version 2.0. Vancouver, BC: BC Provincial Health Services Authority <http://www.bccdc.ca/health-professionals/professional-resources/healthy-built-environment-linkages-toolkit> at p.52, and 71

¹¹³ Chen, J. and Ford, K.L., 2017. A study on the correlation between soil radon potential and average indoor radon potential in Canadian cities. *Journal of environmental radioactivity*, 166, pp.152-156).

¹¹⁴ British Columbia, Local Government Act s. 488 (1)(b)

¹¹⁵ Local Government Act, s. 501

¹¹⁶ Local Government Act, s.502 (2)(b) and (3)(a)

the time for action on radon has arrived in BC, and this offers a unique opportunity to help people, improve indoor environments, and save lives.