



Abundant Housing Vancouver

Jennifer Maiko Bradshaw

The Status Quo

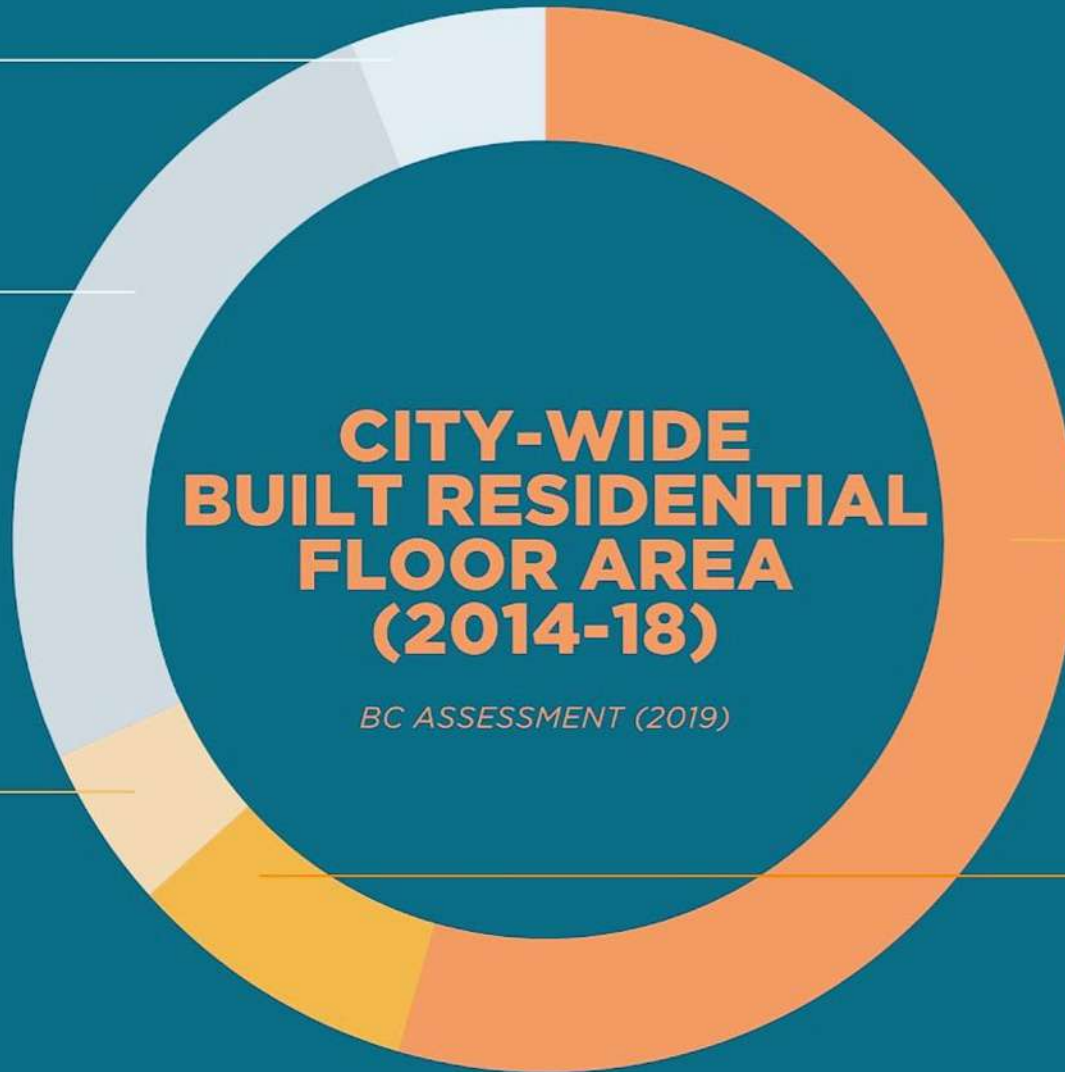
- *What does housing currently look like in the City of Vancouver?*



6%
MIXED-USE

26%
MID-/HIGH-RISE
(>4 STOREYS)

5%
LOW-RISE
(≤4 STOREYS)



**LOW-RISE
IS NEARLY
70%**

55%
SINGLE-
FAMILY

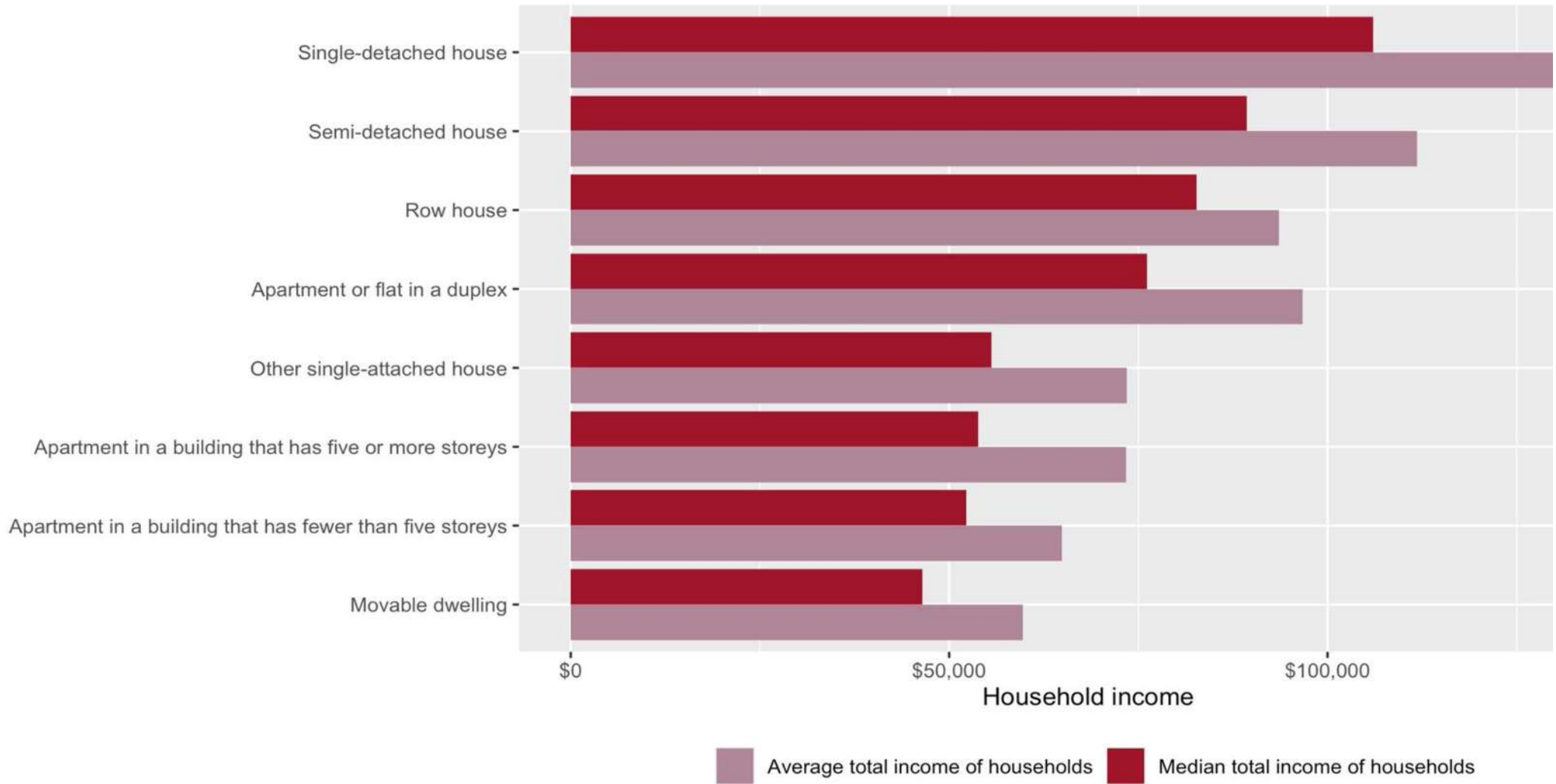
9%
DUPLEX, TH,
RH, MCD

The Status Quo

- *Housing for whomst?*



Metro Vancouver household income by type of dwelling



SCHEDULE "C"

The Regressive System

- Despite low density housing being the most “luxury,” housing the highest-income households, its DCL rate is \$45.04 per sq metre
- High density residential DCL rate is 4.3 times higher at \$193.94 per sq metre
- **This is highly regressive**

Category/Use	Total Development Cost Levy (Effective September 30, 2020)	Unit/ area cost
RESIDENTIAL		
Residential at or below 1.2 FSR and Laneway House	\$45.04	Per m ²
Medium Density Residential Above 1.2 to 1.5 FSR	\$96.92	Per m ²
Higher Density Residential Above 1.5 FSR	\$193.94	Per m ²
NON-RESIDENTIAL		
Industrial (I-2, M-1, M-1A, M-1B, M-2, MC-1, MC-2 Zoning Districts)	\$65.32	Per m ²
Mixed Employment (Light Industrial) (IC-1, IC-2, IC-3, I-1, I-3, I-4, I-1A, I-1B and I-1C Zoning Districts)	\$122.86	Per m ²
Commercial & Other	\$163.74	Per m ²

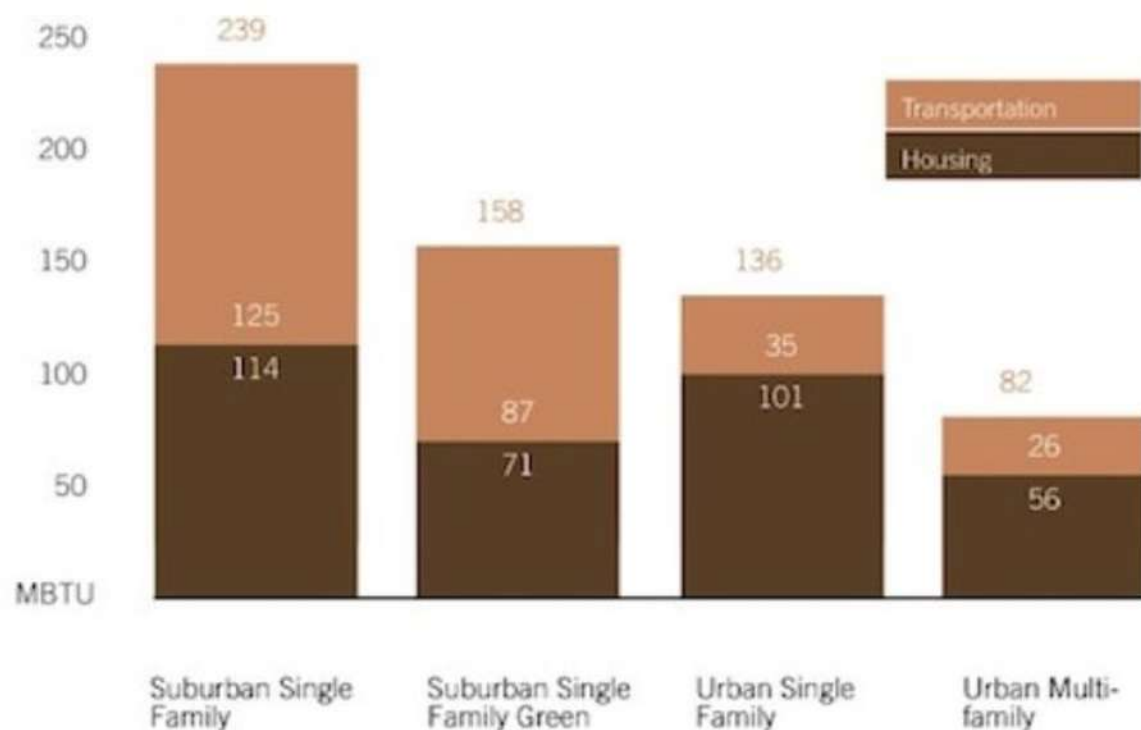
Category/Use	Rate	Unit/ Area cost
CULTURAL, INSTITUTIONAL, SOCIAL		
School use	\$5.49	Per m ²
Parking Garage	\$1.08	Per m ²
Childcare Use	\$10.00	Per Building Permit
Temporary Building	\$10.00	
Community Energy Centre	\$10.00	
Artist Studio Class A & Class B	\$10.00	
Community Centre/ Neighbourhood House	\$10.00	
Library	\$10.00	
Public Authority Use	\$10.00	
Social Service Centre	\$10.00	

The Status Quo

- *Why does this matter?*



Figure 17: Household Energy Use in Compact versus Sprawling Neighborhoods: Average In-Town House Outperforms Even a "Green" Sprawl House (with Hybrid Cars)



Source: Jonathan Rose Companies, LLC (cited in Blue Ribbon Commission on Sustainability, "Greening Mass Transit and the Metro Regions, the Final Report of the Blue Ribbon Commission on Sustainability and the MTA", New York Metropolitan Transit Authority, January, 2009.)

Identifying Neurobehavioral Effects of Automotive Emissions and Fuel Components

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The automobile can be regarded as a mixed blessing. Although it has become a necessary part of daily life, the changes potentially induced by automotive emissions are not necessarily welcomed. Among these are adverse neurobehavioral effects that range in severity from the annoyance provoked by unpleasant odors and the eye irritants to overt behavioral and neurological dysfunction.

Airborne contaminants can alter behavior and the functions of the nervous system in a variety of ways. Chemicals can damage the structure of the nervous system directly, or can alter behavior and nervous system function without pathological changes by affecting neurotransmitter systems, perturbing membranes, or altering cellular metabolism. Since behavior depends upon a wide variety of nervous system functions, behavioral changes can sometimes provide early indications of adverse effects on other organ systems.

Automotive emissions can also alter behavior by stimulating sensory systems. These stimuli may be unpleasant events that alter the conduct of daily life, or may serve as important discriminative or warning stimuli.

The neurobehavioral toxicity of the chemicals involved in automotive technology is not well understood. Emissions may not produce obvious effects at concentrations commonly found in the environment; moreover, some individuals may be exposed occupationally to higher levels. Although people are exposed to the chemicals in automotive emissions environmentally as well as occupationally, and although studies of such people offer unique opportunities, it is inappropriate to rely entirely on these exposures to detect neurotoxicity, especially when suitable techniques exist using animals.

In this chapter, methods are described for the detection of adverse neurobehavioral effects of automotive emissions, and recommendations for research in this area are offered. First, ways are described of identifying, in laboratory animals, the adverse neurobehavioral effects of hazardous substances following acute exposures and repeated exposures, of characterizing subtle effects, and of determining mechanisms of toxicity.

Second, a review is provided of what is currently known about the neurobehavioral toxicity of automotive emissions and fuel constituents. Third, recommendations are offered on how to proceed with a program to address this class of health effects. Although there is reason to suspect that many emissions and fuel constituents are hazardous, little information is available for most. To address this large group of chemicals, a committee should select the substances to test and the order of testing. For the substances about which some knowledge exists, focused recommendations are offered for detailed evaluation of their hazards. These include whole emissions, carbon monoxide (CO), petroleum hydrocarbons, methanol, and metals and their compounds.

NEUROTOXICITY OF TRAFFIC-RELATED AIR POLLUTION

[Lucio G. Costa](#),^{1,2} [Toby B. Cole](#),^{1,3} [Jacki Coburn](#),¹ [Yu-Chi Chang](#),¹ [Khoi Dao](#),¹ and [Pamela J. Roqué](#)¹

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Abstract

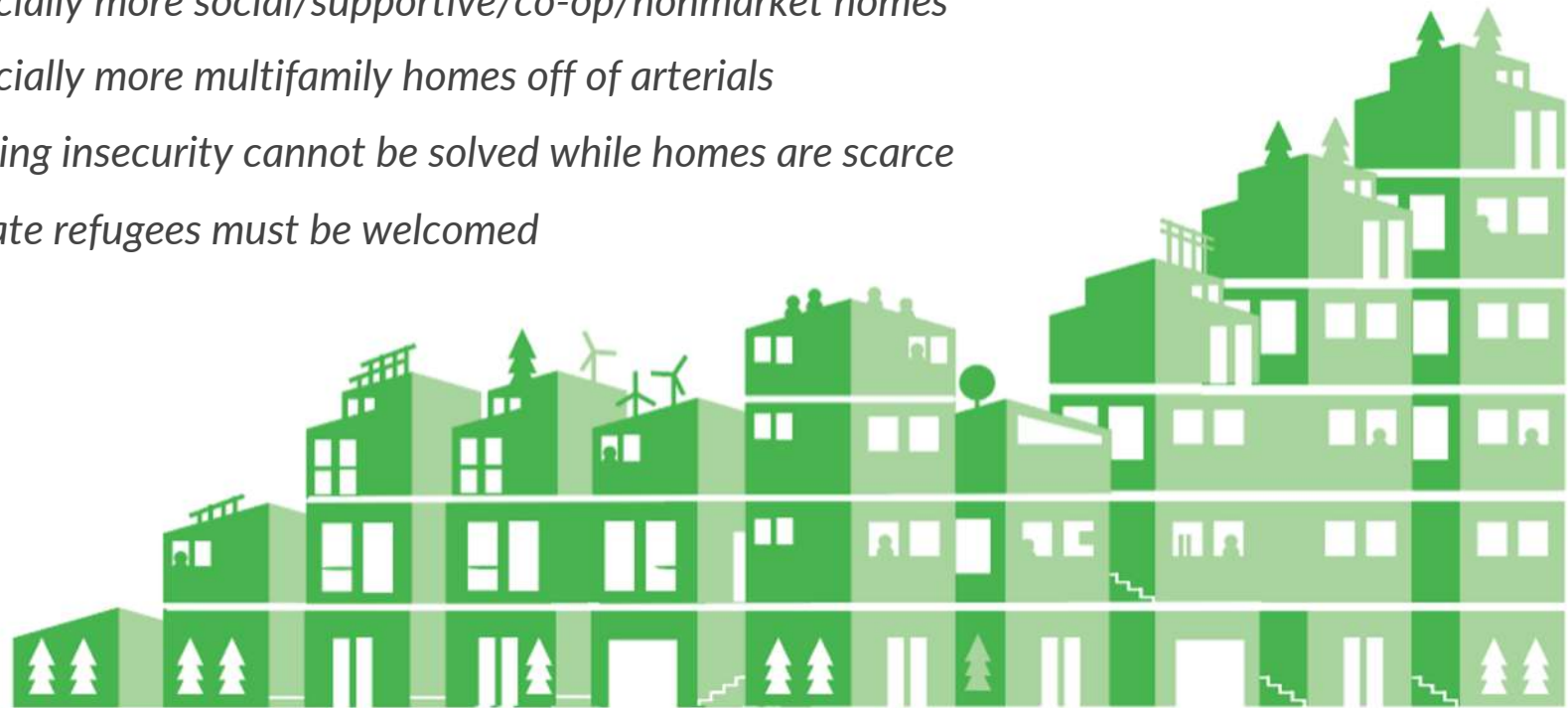
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The central nervous system is emerging as an important target for adverse health effects of air pollution, where it may contribute to neurodevelopmental and neurodegenerative disorders. Air pollution comprises several components, including particulate matter (PM) and ultrafine particulate matter (UFP), gases, organic compounds, and metals. An important source of ambient PM and UFP is represented by traffic-related air pollution, primarily diesel exhaust (DE). Human epidemiological studies and controlled animal studies have shown that exposure to air pollution, and to traffic-related air pollution or DE in particular, may lead to neurotoxicity. In particular, air pollution is emerging as a possible etiological factor in neurodevelopmental (e.g. autism spectrum disorders) and neurodegenerative (e.g. Alzheimer's disease) disorders. The most prominent effects caused by air pollution in both humans and animals are oxidative stress and neuro-inflammation. Studies in mice acutely exposed to DE (250-300 $\mu\text{g}/\text{m}^3$ for six hours) have shown microglia activation, increased lipid peroxidation, and neuro-inflammation in various brain regions, particularly the hippocampus and the olfactory bulb. An impairment of adult neurogenesis was also found. In most cases, the effects of DE were more pronounced in male mice, possibly because of lower antioxidant abilities due to lower expression of paraoxonase 2.

Keywords: Traffic-related air pollution, Diesel exhaust, Neurotoxicity, Oxidative stress, Neuro-inflammation, Neurodevelopmental disorders, Neurodegenerative diseases

Do we need more housing?

- *Yes - especially more homes by and for Indigenous people*
- *Yes - especially more social/supportive/co-op/nonmarket homes*
- *Yes - especially more multifamily homes off of arterials*
- *Yes - housing insecurity cannot be solved while homes are scarce*
- *Yes - climate refugees must be welcomed*



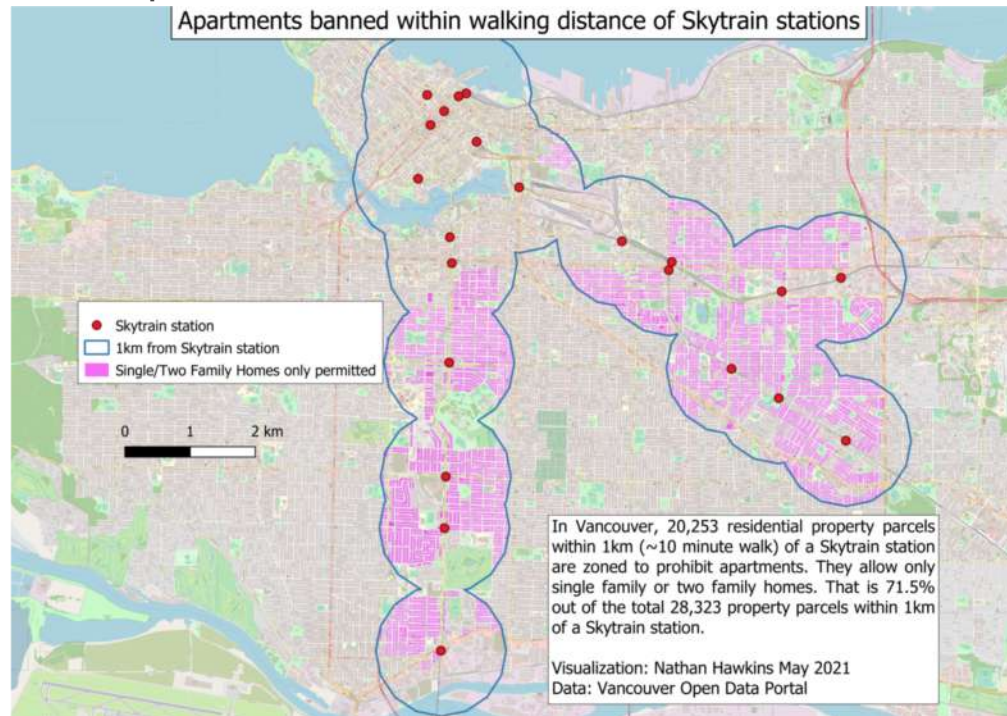
Looking forward

- *Where do we go from here?*

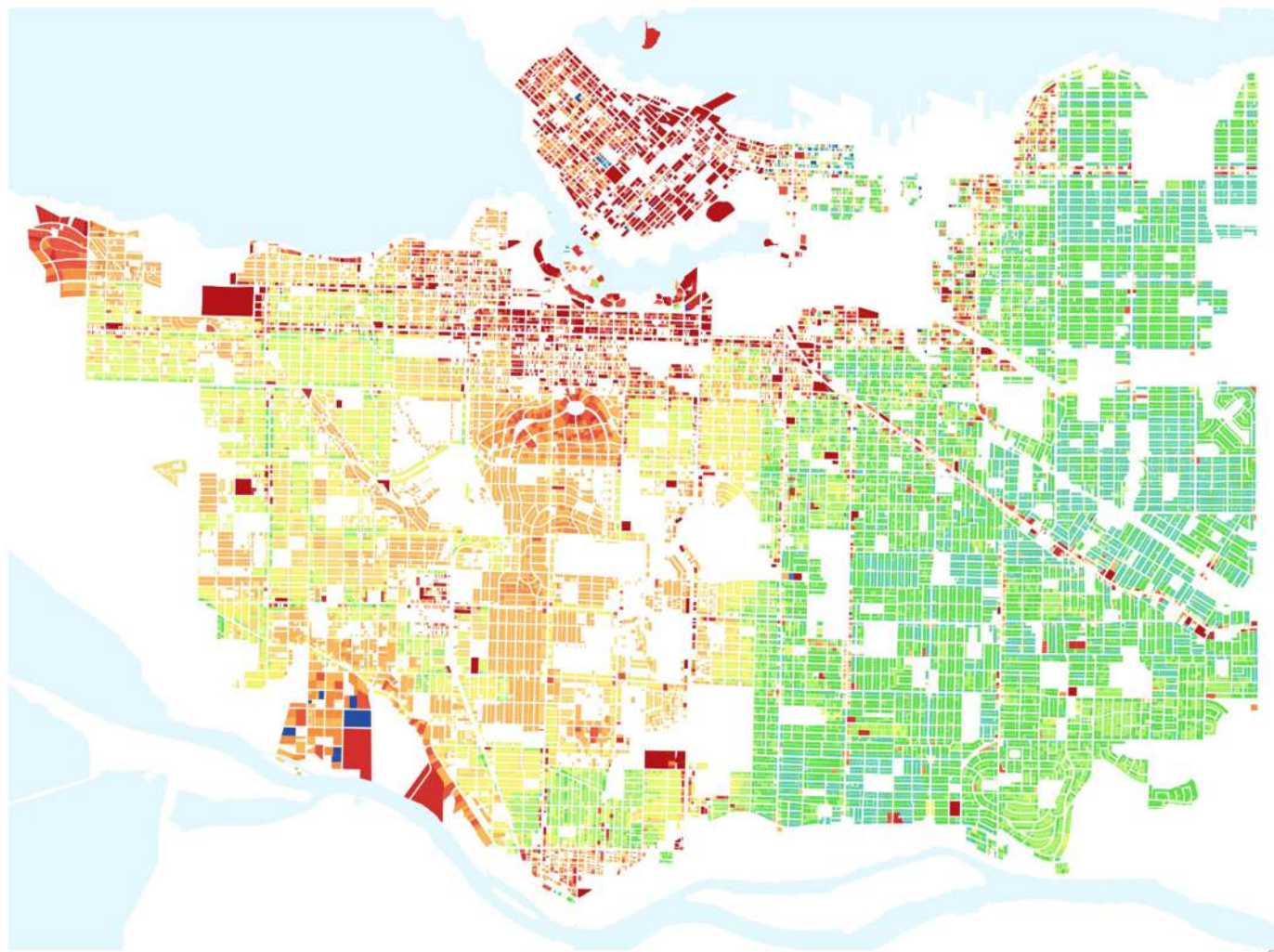


Unban Apartments

- Especially around rapid transit!



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Number of housing units that would need to be allowed to make a lot available to families with median income in the City of Vancouver

Number of Housing Units



Formula: $\lceil \text{Land value} / (5 \times \text{median family income}) \rceil$
 Median family income, 2019: \$62,900*

*Median after-tax income, economic families and persons not in an economic family

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○ Senákw and Land Back

- Returning more land to the local First Nations is a top priority for reconciliation
- Senákw is a Squamish reserve that is not bound by our colonial government's regressive zoning bylaws and fees - we need more of this!

