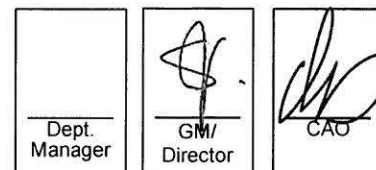


AGENDA INFORMATION	
<input type="checkbox"/> Regular Meeting	Date: _____
<input type="checkbox"/> Other:	Date: _____



## The District of North Vancouver REPORT TO COUNCIL

June 22, 2022

File: 13.6770/Climate Change/File

**AUTHOR:** Adam Wright, Sustainability Planner, Climate & Biodiversity

**SUBJECT:** Climate Action Policy Update: Climate Ready Rezoning Policy for New Part 3 Buildings

### RECOMMENDATION:

THAT Council approve the Climate Ready Rezoning Policy as set out in Attachment A to account for the embodied carbon of new construction and to provide minimum levels of mechanical cooling and air filtration in Part 3 buildings, effective August 1, 2022.

### REASON FOR REPORT:

To obtain approval for a proposed rezoning policy applicable to new Part 3 buildings to account for the embodied carbon of materials used in construction, to provide minimum levels of air filtration, and to provide mechanical cooling for residential dwelling units.

### SUMMARY:

Embodied emissions in buildings are greenhouse gas emissions associated with the production of materials used in building construction, such as concrete. This is in contrast to operational emissions which are associated with the energy used to heat a building. Embodied emissions are not accounted for under current regulations.

Increasing extreme heat events such as the 2021 heat dome have highlighted the need to provide a minimum level of cooling for residential dwellings, while increased frequency of poor air quality advisories due to wildfire smoke has indicated the need for a minimum level of air filtration.

The proposed Climate Ready Rezoning Policy responds to policy direction in the District's Climate Adaptation Plan, Community Energy and Emissions Plan and OCP Action Plan. The policy, which applies to new Part 3 building applications seeking rezoning, is designed to

- Account for embodied emissions of proposed buildings and encourage design measures to reduce embodied emissions,
- Provide minimum filtration performance to reduce impacts to indoor air quality from wildfire smoke and traffic pollution, and
- Provide mechanical cooling for residential dwelling units.

**BACKGROUND:**

On June 15, 2020, Council directed staff to report back with policy recommendations to account for embodied emissions in new construction. Staff have since completed research and stakeholder engagement on a proposed rezoning policy for new Part 3 buildings that would account for embodied emissions. Recognizing the increasing frequency of extreme heat events and poor air quality impacts from wildfire smoke, measures to improve climate resilience have also been incorporated into the proposed policy.

**EXISTING POLICY:**

In 2019, Council declared a climate and ecological emergency and subsequently adopted a Community Energy and Emissions Plan (CEEP) which set a target of 45% emissions reduction by 2030 and net zero emissions by 2050. The District's Official Community Plan (OCP) - Action Plan provides direction to reduce emissions related to buildings and envisions new buildings to be constructed with low embodied carbon materials. The District's Climate Change Adaptation Strategy provides direction to strengthen building policies to require the consideration of climate change over the life cycle of a structure.

**ANALYSIS:**

Building Types: Part 9 vs Part 3

The British Columbia Building Code regulates buildings in two main categories: Smaller simple (Part 9) buildings, for example single family homes or duplexes, and larger more complex (Part 3) buildings, for example multi-family residential, mixed-use, or commercial buildings. The proposed updates would apply to new rezoning applications for Part 3 buildings, as defined by the BC Building Code. These buildings typically have professional design and construction teams that have greater capacity to adapt to new technologies and requirements.

Embodied Emissions

While there has been significant focus on operational carbon over the past decade, emissions associated with the rest of the life-cycle stages of the building, such as those associated with the production of materials like concrete are not currently accounted for. These emissions are commonly referred to as embodied emissions. For new buildings the embodied emissions can far exceed the lifetime operational emissions but are currently not measured. Refrigerants used in building systems also contribute emissions over a building's lifetime and are also not currently measured.



**Figure 1: Embodied Emissions (Source: Carbon Leadership Forum, Policy Resource, 2020)**

The proposed Climate Ready Rezoning Policy (Attachment A) sets the expectation that rezoning applications for new Part 3 buildings report refrigerant and embodied emissions of the proposed buildings and describe specific measures explored to reduce embodied emissions. Disclosure of embodied carbon emissions and of measures taken to help reduce these emissions will increase understanding of the impact of these emissions and provide a foundation for target setting and future performance-based regulations.

#### Air Filtration (Indoor Air Quality)

Wildfire risk will become more severe under future climate conditions. The smoke from these wildfires can travel hundreds of kilometres and have significant health impacts. There are currently no explicit air filtration requirements for new buildings in the National Building Code or the British Columbia Building Code. However, ventilation systems with a Minimum Efficiency Reporting Value (MERV) of 13 or greater is emerging as a typical industry practice for outdoor air filtration in new buildings, particularly in urban contexts.

The proposed Climate Ready Rezoning Policy establishes minimum MERV 13 filtration levels for new Part 3 buildings to reduce impacts to indoor air quality. MERV 13 filters have been shown to offer a degree of protection from particulate matter associated with wildfire smoke and traffic pollution.

#### Mechanical Cooling

The record-breaking heat dome in June and July 2021 caused 619 premature heat-related deaths across the Province. The risks inherent in these increasing temperatures have led to increasing calls to create long-term more proactive solutions addressing extreme indoor air temperatures.

The proposed Climate Ready Rezoning Policy sets the expectation that all residential dwelling units within new Part 3 buildings will be equipped with mechanical cooling capable of maintaining an indoor temperature of 26°C or less, with windows closed. Applicants are

encouraged to maximize passive design strategies such as exterior shading to minimize energy consumption and to provide a degree of protection from overheating during power outage events.

**Consultation and Industry Engagement**

The proposed approach was reviewed by the District's Climate Action Advisory Committee at the April 2022 meeting. Staff have engaged with industry stakeholders on the Climate Ready Rezoning Policy for new buildings. Outreach included Urban Development Institute (UDI), Homebuilders Association of Vancouver (HAVAN), contractors and professionals with active building permits in the District including general contractors, architects and mechanical (Heating Ventilation and Air Conditioning) engineers. The District sought feedback on the proposed approach from staff from other municipalities in the region, as well as from North Shore Emergency Management, BC Housing, the Community Energy Association, and Vancouver Coastal Health.

Engagement activities involved email and phone correspondence with industry groups, contractors, and professionals. Feedback received from industry stakeholders included a preference for exempting instream development applications. Exemptions for instream applications have been incorporated into the proposed policy.

Staff anticipate ongoing outreach with industry stakeholders and guidance documentation will be developed to support applicants in meeting the proposed updates.

**Regional Policy Alignment**

The District is striving to align the approach with existing similar policies in the region. Embodied carbon reporting has been included in larger rezoning applications in the City of Vancouver since 2017, and District embodied carbon reporting guidelines are consistent with the existing Vancouver guidelines. The City of Vancouver recently approved a similar MERV 13 minimum filtration standard and mechanical cooling requirement in May, 2022. The proposed changes have been reviewed with staff from the City of North Vancouver and the District of West Vancouver, and staff from the three North Shore municipalities continue to collaborate on potential approaches to support buildings that are both low carbon and resilient to the impacts of climate change.

**Timing/Approval Process:**

The proposed Climate Ready Rezoning Policy would apply to new detailed rezoning applications submitted on or after August 1, 2022, however, exemptions would be permitted for in-stream applications as described in the policy.

**Environmental Impact:**

The proposed updates are designed to provide for energy efficient buildings and low embodied carbon construction and will assist the District in reaching climate resilience and GHG emissions reduction targets.



**Options:**

1. Approve the Climate Ready Rezoning Policy (staff recommendation);
2. Provide alternative direction to staff;
3. Take no action at this time.

Respectfully submitted,



Adam Wright  
Sustainability Planner

**Attachment A: Climate Ready Rezoning Policy for new Part 3 Buildings**

REVIEWED WITH:					
<input type="checkbox"/> Community Planning	_____	<input type="checkbox"/> Clerk's Office	_____	External Agencies:	
<input type="checkbox"/> Development Planning	_____	<input type="checkbox"/> Communications	_____	<input type="checkbox"/> Library Board	_____
<input type="checkbox"/> Development Engineering	_____	<input type="checkbox"/> Finance	_____	<input type="checkbox"/> NS Health	_____
<input type="checkbox"/> Utilities	_____	<input type="checkbox"/> Fire Services	_____	<input type="checkbox"/> RCMP	_____
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<input type="checkbox"/> Facilities	_____	<input type="checkbox"/> Real Estate	_____		
<input type="checkbox"/> Human Resources	_____	<input type="checkbox"/> Bylaw Services	_____		
<input type="checkbox"/> Review and Compliance	X	<input type="checkbox"/> Planning	X		
<input type="checkbox"/> Climate and Biodiversity	_____				

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