



# City of Richmond




## Report to Committee

**To:** Public Works & Transportation Committee      **Date:** December 20, 2022  
**From:** Peter Russell      **File:** 10-6125-07-02/2022-  
 Director, Sustainability & District Energy      Vol 01  
**Re:** **Progress Update on Building Benchmark BC Program**

### Staff Recommendation

That the report titled “Progress Update on Building Benchmark BC Program” from the Director Sustainability and District Energy, dated December 20, 2022 be received for information.

Peter Russell  
 Director, Sustainability & District Energy  
 (604-276-4130)

REPORT CONCURRENCE		
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>
Facility Services & Project Development	<input checked="" type="checkbox"/>	
Building Approvals	<input checked="" type="checkbox"/>	
<b>SENIOR STAFF REPORT REVIEW</b>	<b>INITIALS:</b>	<b>APPROVED BY CAO</b>
		

## Staff Report

### Origin

At the Regular Council meeting of March 2020, City Council resolved that:

*“(1) That Council endorse the City’s participation in a voluntary regional building energy benchmarking program, as outlined in the report titled “City of Richmond Participation in the BC Building Energy Benchmarking Pilot Program” from the Director, Sustainability and District Energy, dated January 16, 2020, and;”*

*“(2) That staff be directed to report back to Council at the conclusion of the pilot program in 2021, on options to establish an energy benchmarking initiative and supportive policies in Richmond, as outlined in the report titled “City of Richmond Participation in the BC Building Energy Benchmarking Pilot Program” from the Director, Sustainability and District Energy, dated January 16, 2020.”*

This report responds to item (2) in the above resolution by providing a progress update on Building Benchmark BC. Richmond’s participation in this a Province-wide program.

Prior to this, Council endorsed the Building Benchmarking Challenge in 2014, inviting large building owners and/or operators to voluntarily benchmark their buildings and share data with the City. In March 2017, a Council-approved recommendation directed staff to report back on options to establish a building energy benchmarking policy for larger buildings in Richmond as a pilot measure.

Since this time, staff have been working with regional stakeholders to advocate for provincial regulation. The Province through CleanBC has not enacted such legislation to date favouring building labelling as a preferred reporting method to date.

This report supports Council’s Strategic Plan 2018-2022 Strategy #2 A Sustainable and Environmentally Conscious City:

*Environmentally conscious decision-making that demonstrates leadership in implementing innovative, sustainable practices and supports the City's unique biodiversity and island ecology.*

*2.1 Continued leadership in addressing climate change and promoting circular economic principles.*

This report supports the implementation of Community Energy and Emissions Plan 2050 and related Official Community Plan emission reduction policies through:

*Strategic Direction: Retrofit Existing Buildings*

*Action:  Advance annual building energy and emissions reporting and disclosure requirements for existing buildings*

## **Analysis**

### Energy Benchmarking Overview

Energy benchmarking is the process of regularly tracking energy use in buildings, and comparing energy consumption against historic patterns and future targets. It is considered a core energy management best practice where building owners and managers can use benchmarking results to understand their buildings' relative performance against a similar class of buildings.

The process of regularly tracking energy use in larger buildings can also make it easier to identify opportunities to reduce energy consumption and greenhouse gas emissions, and identify potential cost savings. Benchmarking data can assist decision-making when evaluating the impact of energy-related capital and operating investment decisions during lifecycle renewal of building envelope components and/or mechanical systems.

### Retrofitting Existing Buildings

Based on 2017 data, GHG emissions from Richmond's 34,000 existing buildings, representing all building types and uses, collectively emit 40% of total annual community GHG emissions, or 398,000 tonnes annually. For comparison, City-owned buildings collectively emit 3,107 tonnes of GHGs annually based on a 2020 inventory, representing approximately 0.3% of total community emissions. To achieve Richmond's 50% by 2030 GHG emission reduction target, significant progress must be achieved in retrofitting and decarbonising existing residential, commercial and industrial buildings at a scale and pace that greatly exceeds current conditions. Energy benchmarking is an important implementation action supporting and helping building operators to drive low-carbon, energy efficient retrofits in larger buildings. Related initiatives are also in play that support building retrofits, including potential regional air quality regulation, development of the BC Alteration Code, currently earmarked for implementation in 2024 per CleanBC.

In November 2022, Council approved allocation of Local Government Climate Action Program (LGCAP) funding from the Province for two new temporary full time staff positions and related annual program budget totaling \$566,000. Council subsequently endorsed the 2023 operating budget allocation of LGCAP funding, including provision for the two positions. One of these positions will create a detailed Building Retrofit Strategy to: facilitate installation of near zero emission space heating and hot water equipment; introduce energy benchmarking reporting requirements; support GHG reduction targets for existing buildings; guide engagement with building renovators and mechanical system installers; create demonstration projects with partners; and, integrate with Provincial and regional programs and funding opportunities.

### Building Benchmarking BC Progress to Date

Building Benchmark BC (BBBC) was developed in 2019, and launched January 2020, through collaborative efforts by Open Green Building Society and six municipalities including the City of Richmond, City of Surrey, City of Burnaby, City of Vancouver, Metro Vancouver Regional District and University of British Columbia. In addition to annual in-kind and contributory funding from participating municipalities, major funding was also secured from Natural Resources Canada, BC Hydro and Province of BC in 2020/21.

BBBC's primary objective is to promote reduction in energy use and emissions in larger buildings across BC, by supporting voluntary energy benchmarking and disclosure. Successful implementation

of this program is seen as helping to create a compliance pathway for future benchmarking regulation that could be implemented region-wide or province-wide. Staff view programs that encourage participation in building energy benchmarking as most effective when conducted at a regional or provincial scale.

Having just completed its third successful year of implementation, the number of participating municipalities has annually grown from six in 2019, to 20 jurisdictions in 2022. Table 1 shows the number of local governments participating and supporting in BBBC from 2019 to 2022.

**Table 1: Municipalities Participating and Supporting Building Benchmark BC**

<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Create program concept / funding	Reporting 2019 building data	Reporting 2020 building data	Reporting 2021 building data
<ul style="list-style-type: none"> <li>▪ <b>City of Richmond</b></li> <li>▪ City of Surrey</li> <li>▪ City of Burnaby</li> <li>▪ UBC</li> <li>▪ Metro Vancouver Regional District</li> <li>▪ City of Vancouver</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>City of Richmond</b></li> <li>▪ City of Surrey</li> <li>▪ City of Burnaby</li> <li>▪ UBC</li> <li>▪ Metro Vancouver Regional District</li> <li>▪ City of Vancouver</li> <li>▪ City of North Vancouver</li> <li>▪ Township of Langley</li> <li>▪ City of Victoria</li> <li>▪ City of New Westminster</li> <li>▪ City of Kelowna</li> <li>▪ District of Saanich</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>City of Richmond</b></li> <li>▪ City of Surrey</li> <li>▪ City of Burnaby</li> <li>▪ UBC</li> <li>▪ Metro Vancouver Regional District</li> <li>▪ City of Vancouver</li> <li>▪ City of North Vancouver</li> <li>▪ Township of Langley</li> <li>▪ City of Victoria</li> <li>▪ City of New Westminster</li> <li>▪ City of Kelowna</li> <li>▪ District of Saanich</li> <li>▪ District of North Vancouver</li> <li>▪ City of Kamloops</li> <li>▪ City of Abbotsford</li> <li>▪ Capital Regional District</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>City of Richmond</b></li> <li>▪ City of Surrey</li> <li>▪ City of Burnaby</li> <li>▪ UBC</li> <li>▪ Metro Vancouver Regional District</li> <li>▪ City of Vancouver</li> <li>▪ City of North Vancouver</li> <li>▪ Township of Langley</li> <li>▪ City of Victoria</li> <li>▪ City of New Westminster</li> <li>▪ City of Kelowna</li> <li>▪ District of Saanich</li> <li>▪ District of North Vancouver</li> <li>▪ City of Kamloops</li> <li>▪ City of Abbotsford</li> <li>▪ Capital Regional District</li> <li>▪ City of Port Moody</li> <li>▪ Resort Municipality of Whistler</li> <li>▪ Township of Esquimalt</li> <li>▪ City of Nanaimo</li> </ul>
<b>6</b>	<b>12</b>	<b>16</b>	<b>20</b>

Public sector buildings are an important component of voluntary benchmarking and disclosure in British Columbia, with the proportion of public-sector buildings currently occupying 73% of all participating buildings in 2022. However, over the medium to long term, the expectation is that the proportion of private sector buildings reporting their annual energy and emissions will grow in number to eventually become the majority of total reported buildings under this program.

When BBBC was launched in 2020, public sector organizations, including local government partners, were encouraged to voluntarily report their buildings’ annual energy use and emissions through this program, and lead the way as part of encouraging building owners and managers of private sector buildings to participate. Comparative results on the number of participating buildings by year and type is shown in Table 2.

**Table 2: Building Benchmarking Reporting Progress, 2020 - 2022**

Reporting Year	2019 Create program concept / funding	2020 Reporting 2019 building data	2021 Reporting 2020 building data	2022 Reporting 2021 building data
<b>Province-Wide</b>				
<b>Total Private Buildings</b>	N/A	302	350	440
<b>Total Public Buildings <sup>(1)</sup></b>	N/A	666	813	1,211
<b>Richmond</b>				
<b>Total Private Buildings</b>	N/A	60	80	74
<b>Total Public Buildings <sup>(1)</sup></b>	N/A	48 [City – 21]	50 [City – 33]	49 [City – 33]

(1) Public buildings include K-12 public schools, Health Authorities, post-secondary education institutions as well as municipal buildings and facilities.

**Financial Impact**

None.

**Conclusion**

Building benchmarking is an important tool for decarbonizing existing buildings. Since inception, the Building Benchmark BC initiative has validated the need for a coordinated approach to data collection and reporting. As a voluntary program launched in January 2020, municipal participation has grown steadily from 12 in 2020, to 20 in 2022, with leadership taken by these municipalities to annually report building energy use and emissions intensity for their facilities and encouraging wider market adoption.



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