

Building a Sustainable Future: The Collaborative Adoption of the Zero Carbon Step Code on Southern Vancouver Island

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The conclusion of a two-year process to adopt the Zero Carbon Step Code (ZCSC) across multiple local government jurisdictions on southern Vancouver Island marks a significant milestone in advancing sustainable building practices in BC.

Between December 2021 and April 2023, the City of Victoria, the District of Saanich, the District of Central Saanich, and the Capital Regional District (CRD) collaborated closely to develop the policy and bylaw amendments required to adopt the Zero Carbon Step Code (ZCSC). The objective was to establish consistent regulations across the region and set adoption dates for the highest standards of the Energy Step Code (which focuses on energy efficiency) and the Zero Carbon Step Code (which focuses on greenhouse gas emission reductions), providing long-term predictability to the industry.

The policy development process involved three phases of regional engagement and a comprehensive technical review of permitting data and reports on low-carbon buildings in BC. The four jurisdictions worked together to align on a common adoption timeline in a collaborative approach that drew on the unique strengths of each partner while avoiding separate processes, duplication of work and engagement fatigue, and ensuring meaningful feedback from builders and developers. The effort earned recognition from the Community Energy Association, which presented the jurisdictions with a Climate and Energy Action Award from the Union of BC Municipalities.

All three municipalities adopted Emissions Level 4 for all Part 9 residential buildings (buildings smaller than 600m², such as single-detached dwellings, duplexes, and triplexes) on November 1, 2023, making them the first to reference the ZCSC in a bylaw and to have the regulation take effect. All three municipalities also adopted Emissions Level 4 for Part 3 buildings (buildings bigger than 600m² and/or commercial, office, and multi-unit residential) which will cover all buildings by November 1, 2024. The CRD adopted Emissions Level 3 on November 1, 2023, for Part 9 residential buildings, making it the first regional government to adopt the ZCSC.

This forward-looking initiative positions all four jurisdictions to meet their 2030 and 2050 reductions targets for new construction. The adoption of the ZCSC is projected to result in a four to seven percent reduction in greenhouse



Public Safety Building Under Construction

2023 Climate and Energy Action Awards Winners

Victoria Skyline (far left)



gas (GHG) emissions by 2050. By setting GHG caps for all new residential, commercial, and office buildings, the ZCSC encourages low-carbon solutions by drastically limiting the potential for fossil fuel reliance. Since there are so few emissions associated with BC's electrical grid, it is anticipated that most buildings will be built all, or nearly all, electric. As the Province and BC Hydro fulfill their CleanBC commitment to decarbonize the grid, all electric buildings will become zero-emissions buildings. For many buildings, especially Part 9 residential buildings, this will also be the most cost-effective option.

When it was first introduced in 2017, the BC Energy Step Code (BC ESC) provided local governments with an option to require performance measurement of energy in new construction. This is in contrast with previous requirements which were prescriptive and required little proof that a building performed as intended. The performance-based approach has been widely adopted across the province, requiring the submission of energy models that demonstrate compliance. Standardizing the use of energy models has laid the foundation for introducing the ZCSC. With the model already completed for energy code compliance, it is relatively simple to

determine carbon performance. Emissions Level 1, the "measure only" tier of the ZCSC, requires virtually no additional work for any builder following a performance compliance pathway.

Because the jurisdictions involved in this effort adopted the BC ESC in 2018, they had many energy models which provided data to inform the adoption of the Zero Carbon Step Code. These data showed that most new Part 9 buildings in Victoria and Saanich were already being electrically heated, primarily using heat pumps. Most fossil fuel use was for hot water; electrifying hot water typically represents a smaller barrier than electrifying heating. This was a key driver behind the adoption schedule. Similar conclusions were found for larger Part 3 buildings: nearly a quarter of Part 3 buildings built since 2018 were already meeting Emissions Level 4, the most rigorous level in the ZCSC. This is in sharp contrast with the BC ESC, where buildings meeting the highest standard are still relatively unusual.

During the engagement process, the building industry voiced a consensus favouring the adoption of the highest ZCSC levels ahead of the highest BC ESC levels, emphasizing its direct regulation of emissions and focus

on mechanical equipment. This approach was deemed effective in achieving maximum emissions reduction with minimal impact on construction practices. This process, in combination with the technical review, made it clear that adopting the highest levels of the ZCSC would be the most effective strategy to decrease emissions from new construction in the region. With this insight, the City of Victoria, the District of Saanich, the District of Central Saanich, and the Capital Regional District have incorporated adoption schedules for the ZCSC into their respective building bylaws. They have also coordinated the further adoption of the BC ESC in alignment with the provincial adoption schedule.

In these jurisdictions, the base Building Code now regulates the efficiency of buildings, while the ZCSC regulates the annual allowable carbon emissions. This approach charts a course for all four jurisdictions to meet the emissions reduction targets necessary for new construction by 2030 and 2050. Several other jurisdictions in the region have since adopted similar regulations and the hope is that more will follow suit.

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