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ChargePoint, Inc.
254 East Hacienda Avenue | Campbell, CA 95008 USA
[redacted]

July 22nd 2020

RE: Support for proposed changes to the City of Victoria's Zoning Regulation Bylaw and Zoning Bylaw 2018 to require new buildings to provide energized electric vehicle outlets

ChargePoint is pleased to support the City of Victoria's proposed zoning regulation bylaw and zoning bylaw amendments related to electric vehicle outlets. ChargePoint is the world's largest electric vehicle charging network, featuring over 113,000 charging spots, including over 4800 ports in BC. Every 2 seconds, a driver connects to a ChargePoint station.

This proposal builds on the City's efforts to reduce GHG emissions and promote the use of electric vehicles, which can reduce emissions up to 98% relative to gasoline vehicles in BC. The proposal is well designed to address immediate and longer-term electric vehicle demand for several reasons:

- The proposal will accommodate near and long term demand with EV-ready infrastructure (i.e. "Energized Electric Vehicle Outlet" or "energized outlets") for all residential dwellings, which includes access to Level 2 energized outlets in 100% of parking spaces and consideration of energy management.
- The proposal will also accommodate EV-ready infrastructure for all new commercial, industrial and institutional buildings, which includes access to Level 2 energized outlets for 5% of all parking stalls for buildings with more than 15 parking spaces, and one to two outlets for buildings with less than 15 parking spaces.
- The proposal accounts for the growing demand for electric vehicles in the region by including provisions for all dwellings to have access to EV-ready infrastructure. Annual sales of electric vehicles have significantly increased since 2013, and these trends are anticipated to continue with the BC Government's Zero Emission Vehicle (ZEV) Act targeting 100% ZEV sales by 2040.
- The proposal addresses one of the largest barriers to electric vehicle adoption: limited access to home and workplace charging. According to data from fleetcarma's Charge the North Study, over 70% of charging occurs at home or work.
- The proposal will reduce the cost of future charging station installation significantly by preparing buildings now, at the time of construction for charging station infrastructure needs. Furthermore, the use of energy management can further reduce installation requirements and costs for new development.

ChargePoint applauds the City of Victoria for considering this proposal and demonstrating its leadership in supporting electric vehicles. Thank you for the opportunity to provide comments on this proposal. If you have any questions, please contact me at [redacted].

Respectfully,

Suzanne Goldberg
Director, Public Policy – Canada, ChargePoint

VICTORIA EV ASSOCIATION

July 23, 2020

Mayor Lisa Helps and Members of Council
City of Victoria
1 Centennial Square
Victoria BC V8W 1P6

Dear Mayor Helps and Members of Council

Re: Electric Vehicle (EV) Charging Requirements for New Construction

This letter is in support of the amendments to the Zoning Amendment Bylaws 200-001 and 20-075 to require electric vehicle infrastructure in new construction as well as support for the introduction of EV charging fees at public charging stations.

We wish to congratulate Victoria for; reaching out to all stakeholders, the comprehensive background research conducted, accommodating the needs in non-profit housing and the adoption of best practices. As EV ownership continues to grow exponentially with a corresponding need for increased charging access, it is becoming even more important to avoid building retrofitting costs in the future.

Experience in other BC municipalities in the 2012-2016 period indicated that the best way of avoiding higher retrofitting costs is to require EV infrastructure at the time of construction with a 100% requirement for residential land uses such as for multiple unit residential buildings (MURBs).

We note that the City of Victoria has already declared a climate change emergency. With up to 60% of residents living in MURBs and EV infrastructure having a significant effect on a decision to switch to an EV, resident access to EV infrastructure is particularly important in terms of reaching municipal GHG reduction goals.

We would therefore urge Council to approve the Bylaws that represent best practices and place Victoria in the company of a growing number of BC Municipalities that require residential EV infrastructure in new construction.

Respectfully

David Grove, President,
The Victoria Electric Vehicle Association
[redacted]

City of Victoria
Attn: Mayor and Council
One Centennial Square
Victoria, BC V8W 1P6

July 22, 2020

RE: EV Ready Zoning Bylaw

Dear Mayor & Council,

AES Engineering provides electrical engineering services for building construction and infrastructure projects. We have a particular focus on electrical engineering services for electric vehicle (EV) charging; our clients for such services include BC Hydro; FortisBC; Translink; Tesla; BCIT; UBC; the City of Vancouver; and various other local governments, developers, residential stratas, real estate owners, post-secondary institutions, and EV charging networks. AES has also actively engaged in the development of Canadian Electrical Code (CSA C22.1) amendments supporting EV charging. And we are involved in the design of EV charging systems in multiple new and existing residential and commercial buildings, including projects with 100% EV Ready parking.

AES has supported multiple BC local governments in developing 100% EV Ready residential parking requirements. Notably, we recently served the Capital Regional District by developing performance requirements for EV charging that may be referenced in member municipalities' EV Ready requirements (and are reflected in the City of Victoria's proposed requirements). Together, the communities that have adopted 100% EV Ready requirements represent most of the new development in BC.

I wanted to write to express my support for the recommendations in the staff report "Electric Vehicle (EV) Ready Requirements for New Construction". Given that most charging occurs at home, EV Ready residential parking ensures that occupants will have access to EV charging in the future, enabling them to adopt an EV. EV costs are declining, and their initial costs are expected to reach parity with gasoline vehicles in approximately five years[1]. EVs' operating costs are much less – charging an EV is equivalent to approximately $0.20 per litre gasoline, and EVs have lower maintenance costs. Given EVs' declining first costs and very low operating costs, it is in the financial interests of residents of

[1] The International Council on Clean Transportation. 2019. "Update on electric vehicle costs in the United States through 2030"; Bloomberg New Energy Finance. 2020. "Electric Vehicle Outlook 2020" https://about.bnef.com/electric-vehicle-outlook/

multifamily buildings to have access to EV Ready parking. Lack of future-proofing with EV Ready parking necessitates significantly more costly and complicated retrofits.

Providing the choice to drive electric is also critical to mitigating climate change. EVs have approximately 80-90% lower life cycle GHG emissions when charging on BC's relatively clean electrical grid[2]. If parking is included in new developments, it is important to ensure that drivers can access convenient charging to enable them to adopt EVs.

I also wanted to note that 100% EV Ready parking can be achieved at reasonable cost, particularly at time of new construction. AES has designed multiple 100% EV Ready projects, and also completed costing studies of 100% EV Ready parking for municipal and utility clients. In multifamily and other forms of developments, EV energy management system (EVEMS) technologies can be implemented to significantly lower buildings' electrical capacity requirements and associated costs. The staff report notes costs from a study AES prepared for the City of Richmond, demonstrating substantially lower cost when using commercially available EVEMSs. Similar design strategies are certainly applicable in Victoria, and can achieve similar savings relative to designs for dedicated circuits with no EVEMS.

It is sometimes suggested that less than 100% EV Ready infrastructure be required in residential buildings. However, we do not recommend less than 100% EV Ready residential parking. Notably, under most forms of parking tenure in condominiums (e.g. long-term leases; common property; limited common property; stratified; etc.) it is very difficult or impossible to swap parking stalls. Thus, housing units that are not assigned an EV Ready parking space will have major challenges accessing home charging. Moreover, the cost of 20% EV Ready parking with dedicated unmanaged circuits (as the City of Vancouver required before adopting 100% requirements) is comparable to 100% EV Ready with load management using EVEMS. Lastly, the cost of retrofitting to provide additional access to EV charging is typically substantially more than would be required in new construction.

We congratulate the City of Victoria for its leadership on climate action and hope to engage with all stakeholders to support effective implementation of 100% EV Ready requirements in Victoria.

Kind regards,

BMcE

Brendan McEwen, MCP
Director of Electric Mobility & Low Carbon Strategies
AES Engineering Ltd.
BMc/BMc

[2] http://carboncounter.com/