

**Item - 2. Encouraging EV Charging at Gas Stations and Parking Lots – Climate Emergency Action Plan - Support**

Date Received	Time Created	Subject	Position	Content	Name	Organization	Contact Info	Neighbourhood	Attachment
05/09/2022	22:05	PH2 - 2. Encouraging EV Charging at Gas Stations and Parking Lots – Climate Emergency Action Plan	Support	<p>I support this but suggest modification: 1. Increasing the attractiveness of battery-electric vehicles is a win/win/win for the city, the environment, and those who need cars. I strongly support the City's intent and the general thrust of this program. 2. Urban gas stations are a terrible place to put chargers. I suggest dropping this requirement. 3. Requiring chargers in parking lots is an excellent idea, but operators should have the option of Level 2 or L3 chargers, with the goal of having a mix available. 4. In the case of L2 chargers, consideration should be given to increasing the requirement from 3 to some fixed proportion of the number of parking spots. 5. Expand the range of parking lots where this requirement applies. Chargers at malls, entertainment venues, and offices would be very helpful. 6. 50kW isn't an appropriate floor in 2022; the City should require 100kW minimum for L3 chargers. I offer background on my (considerable) experience in this space and supporting arguments for each suggestion in the attached 3-page Word document.</p>	Tim Bray		s22(1) Personal and Confidential	Riley Park	Appendix A

### Submission to Vancouver City Council for May 19, 2022 discussion of action aimed at “Encouraging EV Charging at Gas Stations and Parking Lots”

From [Tim Bray](#).

Thank you for taking the time to read this. I am a long-time Vancouver resident currently located in Riley Park. Let me qualify myself on this subject:

1. I have owned an electric car since January 2019. I use it like most people use cars, to drive a kid around, go shopping, and move stuff. I have a remote workspace in Kitsilano which I usually reach by e-bike but occasionally by car.
2. My car is not a Tesla so, like an increasing proportion of EV drivers, I do not have access to those charging facilities.
3. Until May 2020 I was employed by Amazon in Vancouver and regularly drove back and forth to Seattle, 230km each way.
4. In the summer of 2021, I drove to Regina, Saskatchewan to visit my mother, a distance of 1,725km each way.
5. I have published extensively, with thousands of impressions, [on my blog](#) and [on Twitter](#) (45K followers) on the subject of electric-car ownership, and was [interviewed by Electric Autonomy Canada](#) on the subject.
6. I have a Level 2 charger at my residence, but for the first few months of EV ownership, relied on public chargers while waiting for its installation to complete.

### My recommendations to the City:

1. Increasing the attractiveness of battery-electric vehicles is a win/win/win for the city, the environment, and those who need cars. I strongly support the City’s intent and the general thrust of this program.
2. Urban gas stations are a terrible place to put chargers. I suggest dropping this requirement.
3. Requiring chargers in parking lots is an excellent idea, but operators should have the option of Level 2 **or** L3 chargers, with the goal of having a mix available.
4. In the case of L2 chargers, consideration should be given to increasing the requirement from 3 to some fixed proportion of the number of parking spots.
5. Expand the range of parking lots where this requirement applies. Chargers at malls, entertainment venues, and offices would be very helpful.
6. 50kW isn’t an appropriate floor in 2022; the City should require 100kW minimum for L3 chargers.

### Background: How long do you need to charge?

The relevant statistic here is “how many km added per charging hour?” For L2, it’s somewhere in the range of 20-40km per charging-hour. For L3, it’s complicated, depending on how fully

charged you are, the power of the charger, your car's ability to accept high wattages, and so on. But we're talking somewhere in the range of 100km-300km per charging-hour.

There are two scenarios to think about here:

1. My charge is worryingly low and I need enough to finish up my errands and get home. So, let's say an hour or so on L2 and as little as 15 minutes on L3.
2. I don't have a charger at home or at work and I need to charge up for a few days' normal driving around. Note that in this case there's no real need for a full charge. Still, this will take several hours on L2 and probably the best part of an hour on L3.

## Recommendation justifications

### **"1. Increasing the attractiveness of battery-electric vehicles is a win/win/win..."**

City staff have done a good job of providing background on this. I'd only add that with every increase in the percentage of electric vehicles on the road, City street-life becomes increasingly pleasant, as the levels of pollution and noise fall. It is highly appropriate for the City to be pursuing this goal.

### **"2. Urban gas stations are a terrible place to put chargers..."**

It is hard to imagine a charging scenario that lasts less than fifteen minutes. Gas stations are designed for stays of less than five minutes, and nobody would call them pleasant places to spend time. Your EV should be charged while you're doing something or enjoying yourself, not waiting.

L3 chargers are noisy and vent hot air. Their presence is going to make the gas-station experience even less pleasant.

Note that an L3 charger requires considerable investment of space, not just money. I have bitter personal experience with **big** gas stations out on the Trans-Canada where the charging station is awkwardly stuffed into the back of the lot, making it hard to position your car so the cable reaches the charging port.

### **"3. ... parking-lot operators should have the option of L2 or L3 chargers"**

During the period when I did not have a charger at home, my best charging options were an L2 in Telus Garden where I worked and the BC Hydro 50kW L3 charger at 44<sup>th</sup> and Fraser, less than 10 minutes' drive from home. Both of these made good sense, depending on the particulars of my schedule on any given day and my driving plans for the following days.

L3s are going to be easier to install in parking lots than in gas stations, and most such lots in Vancouver are near shopping or coffee or sushi or a park, so you can relax or do something useful for that hour.

### **"4. In the case of L2 chargers, consideration should be given to increasing the requirement from 3 to some fixed proportion of the number of parking spots."**

As EVs become ubiquitous, we'll develop an understanding of the appropriate ratio of chargers to parking spots in various contexts. It is obviously much less than 1:1 – my own L2 charger gets used for a few hours every week or two.

We don't know what that number is, yet. But the notion that some one-block downtown lot should offer the same number of chargers as the Canada Place parkade seems questionable.

**“5. Expand the range of parking lots where this requirement applies...”**

If I read the staff recommendations correctly, they apply to commercial pay-by-the-hour parking lots. I personally spend much more time parked at malls and entertainment venues. I'd much rather charge while I watch a film at International Village then go for dim sum, or do a week's worth of shopping at Super Store.

**“6. 50kW isn't an appropriate floor in 2022...”**

It is true that in 2022 there are quite a few EVs on the road that can't accept more than 50kW. But almost all new models can use 100kW, and we're at an inflection point: The Porsche Taycan (but also mid-range EVs from Hyundai and Kia), starting this year, can use more than 200kW. Once you've experienced charging at 100kW or more, 50kW feels sluggish and unsatisfying. 50kW chargers are yesterday's technology.

[Closing note](#)

The best time to charge your EV is while you're sleeping or working. This kind of charging also has the virtue that BC Hydro can build an intelligent electrical grid that routes power to EVs being charged when it has surplus, and throttles them back when it needs to service other peaks. This would also help Hydro dial back the (small) percentage of its power that is non-hydroelectric and thus carries a higher carbon load.

For those reasons, while this initiative is admirable and I support it, I suggest that the City seek out opportunities to incentivize the installation of L2 chargers in the large number of shared parking areas at existing multi-family dwellings and workplaces. This is a hard problem and one that the Province is also looking at, but is likely the City's best long-term chance to remove the obstacles to wider EV adoption.