

# Identification of Current and Future Infrastructure Deployment Gaps

Provided to Natural Resources Canada



By Mogile Technologies Inc.

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*About Mogile Technologies Inc :*

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Mogile Technologies Inc. maintains the ChargeHub database, the only independent, curated, user-enriched and commercially available database of public electric vehicle (EV) charging stations in North America. This unique perspective on public EV charging serves our commercial and institutional customers—public utilities, governments and automakers—with the necessary EV charging and driver insights and analytics solutions to apply a data-driven approach to public charging development, including the ChargeHub Central EV Charging Management System.

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## Summary

This report identifies three categories in the Canadian electric vehicle (EV) charging infrastructure in which gaps occur: cities, highways, and customer experience. It is based on data in the ChargeHub database, an independent, curated, user-enriched and commercially available database of public EV charging stations in North America, augmented by data from stakeholder interviews and demographic census data and geographic data.

Generally, cities in British Columbia and Quebec have more public charging ports relative to their population than cities in other provinces, and city EV drivers use them more than drivers outside cities. As for major highways, coverage is at 61%, with most of the gaps in the Prairies. For customer experience, EV drivers consider range anxiety (a vehicle issue: “Will I be able to get where I am going?”) a less serious concern than charging anxiety (an infrastructure issue: “Will I be able to charge at this site?”).

Although the geographic coverage of the EV charging infrastructure is relatively good, the charging capacity is stretched in many areas, resulting in a suboptimal customer experience. Fast charging sites tend to be larger in cities, and Tesla fast charging sites are, on average, four times larger than non-Tesla sites. Meeting the increasing charging needs of EV drivers and promoting adoption of EVs will need to account for existing capacity utilization in the immediate area where new sites are considered, especially at peak driving times such as Fridays before a long weekend.

Interviewees stated that public charging sites generally have a challenging intrinsic economic case for their operators and site owners, which is constraining expansion. A large portion of charging sites is currently only financially undertaken when subsidized in some way, whether by governments, by utilities, by automakers or by site owners. Business owners likely justify supporting public charging sites based on the possible indirect benefits they may bring, such as attracting drivers and customers or improving public image. In this context, stakeholders see the financial support from NRCan’s infrastructure deployment programs as essential.

Optimizing future EV charging infrastructure deployment will need to account for not only coverage but also capacity needs. For example, adding ports to an existing site, or adding a new site in the vicinity, may be highly beneficial for EV drivers if there is regular congestion and if the new capacity can be demonstrated to relieve current or upcoming congestion. Furthermore, due to the low levels of satisfaction with customer experience for public charging, we recommend that NRCan make the driver experience a key measure in assessing the performance of the EV charging infrastructure.