



British Columbia Hydrogen Fuelling Network Infrastructure Study

March 2021



Current Status of B.C. Hydrogen Network

- 6 stations funded by CleanBC Go Electric Program
- Locations:
 - Victoria (x 1)
 - Kelowna (x 1)
 - Lower Mainland (x 4)
- New funding of \$10 million(min. 10 stations) available





Network Study Overview

- Ministry commissioned a study to inform and guide the approach to building out a hydrogen fuelling network in B.C.
- Focus on light-duty vehicles
- Time periods of 2025 (10%), 2030 (30%), and 2040 (100%) in support of the Zero-Emission Vehicles Act targets
- Study utilized an energy modelling tool for vehicle distance (2019 Mirai)



Overview

Core network to allow safe travel throughout B.C.'s primary and secondary highways, and major roads.

Network design principles:

1. Prioritize initial station clusters in areas with high FCEV adoption potential to align with vehicle OEM deployment plans. Deploy a minimum of 2 stations per cluster for redundancy and availability when a new cluster is initiated
2. Connect clusters through travel corridors across the province, where commuter traffic, cross jurisdictional travel or tourism is heaviest.
3. Maximize population areas served.
4. Locate stations at existing gas/diesel fueling stations where possible; otherwise, near a source of electricity and/or natural gas with access to service and maintenance parts and labour.
5. Ensure infrastructure deployment allows for safe and convenient travel in the province, whereby stations are planned at a frequency that allows travel under challenging conditions, such as inclement winter weather, for the most limited vehicle models available.



Overview

Four station types identified:

- Major Clusters 7-8 stations: Examples such the Lower Mainland, the Greater Victoria area, and the Central Okanagan.
- Minor Clusters 2-4 stations: Examples such as Nanaimo, Kamloops, Prince George, Vernon, Penticton and Campbell River.
- Connectors: Examples such as Hope, Merritt, and Williams Lake.
- Destination: Examples such as Whistler and Tofino and transportation hubs such as ferry terminals and airports.





Results

- Roughly 82 HRS sites are required to provide a minimum core network by 2040.
- Actual number of stations deployed will likely be 150-250 (need for clustering, capacity and redundancy)

Type	Name	2025	2030	2040
Major Cluster	Lower Mainland	7	12	15
	Greater Victoria	2	7	10
	Central Okanagan	2	7	10
	Fraser Valley	2	7	10
Minor Clusters	Nanaimo	1	2	4
	Kamloops	0	2	4
	Prince George	0	2	4
	Vernon	0	2	3
	Penticton	0	2	3
	Campbell River	0	2	3
Connector		2	8	67
Destination		1	2	8
Total Stations		17	55	141

2030 – Hydrogen Station Network



2040 – Hydrogen Station Network





Questions for Discussion

Key Questions:

- For the next ~ 10 stations, is a daily station capacity of 100-200 kg/day sufficient?
- Should 350 bar fuelling be included? (ex. yes, no, at specific stations only)
- Which clusters should be prioritized first?
- Does the target station numbers for 2025 (17 stations) and 2030 (55 stations) seem reasonable? Ex. is this too slow or too fast
- Do the Network Design Principals make sense? Is there anything missing?
- Should the Ministry support funding mobile/containerized solutions at the beginning of building out major and minor clusters or connector gaps?
- Should a % of renewable H2 be required to be supplied to a station?