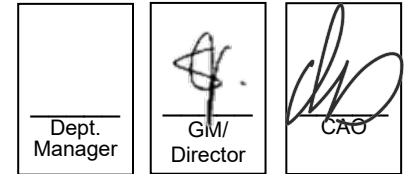


AGENDA INFORMATION	
<input type="checkbox"/> Regular Meeting	Date: _____
<input type="checkbox"/> Other:	Date: _____



The District of North Vancouver REPORT TO COUNCIL

April 20, 2023

File: 13.6770/Climate Change/File

AUTHOR: Adam Wright, Sustainability Planner, Climate Action, Natural Systems and Biodiversity

SUBJECT: Electric Vehicle Initiatives: Update and Strategy Development

RECOMMENDATION:

THAT staff is directed to proceed with the development of an Electric Vehicle Strategy as detailed in the April 20, 2023, report of the Sustainability Planner entitled Electric Vehicle Initiatives: Update and Strategy Development.

SUMMARY:

The purpose of this report is to provide an update on initiatives that support the transition to electric vehicles in the District of North Vancouver and to seek direction from Council to initiate the development of an Electric Vehicle (EV) Strategy to guide the municipality in supporting the accelerated transition to low carbon electric mobility.

BACKGROUND:

In 2019, Council declared a climate and ecological emergency and subsequently adopted the Community Energy and Emissions Plan which set a target of 45% emissions reduction by 2030 and net zero emissions by 2050. The District has subsequently identified six key directions to reduce greenhouse gas emissions, protect and enhance ecosystem health and biodiversity, and improve our resilience to climate change. Accelerating the transition to electric mobility advances the Low Carbon Transportation direction (Figure 1).



Figure 1: Climate action & environment key directions

Reducing emissions from transportation

Transportation represents the single largest source of emissions in the District (52%) and the majority of transportation emissions are from personal vehicles (96%). While supporting mobility options such as walking, cycling, and transit remains a priority, electrification of the passenger vehicle sector provides another key step towards achieving the District’s 2030 and 2050 emissions reduction targets.

Electric vehicles reduce emissions in two ways. First, electric motors are more energy efficient than internal combustion engines, resulting in less energy needed to travel the same distance. Second, the vast majority of electrical power delivered in BC comes from renewable hydroelectric facilities in the Province. Thus overall, electric vehicles in B.C. emit 90% fewer emissions than fossil fuel vehicles¹. The Province’s Clean BC Roadmap emphasizes adoption of zero emission vehicles as a key strategy towards reducing emissions from transportation (Figure 2).

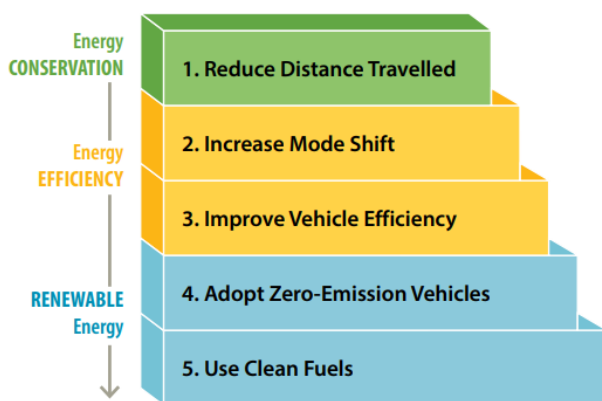


Figure 2. Reducing Transportation Emissions ([Clean BC Roadmap to 2030](#))

¹ [‘EV Ready’ Requirements for New Buildings: A Best Practice Guide for Local Governments](#)

In addition to reducing greenhouse gas emissions, electric vehicles improve air quality by reducing tailpipe emissions (e.g. fine particulate matter, nitrogen oxides), and also reduce general noise pollution due to the quiet electric drivetrain.

Accelerating EV adoption

New educational programs, rebate incentives, and technology across B.C. are contributing to a significant shift towards EVs. In 2022, EVs in B.C. grew to 18% of new passenger vehicle sales, the highest sales rate in Canada² (Figure 3). The transition to EVs is expected to continue as the Province has committed to a 100% EV sales target by 2035 and supportive programs and charging infrastructure continue to expand.

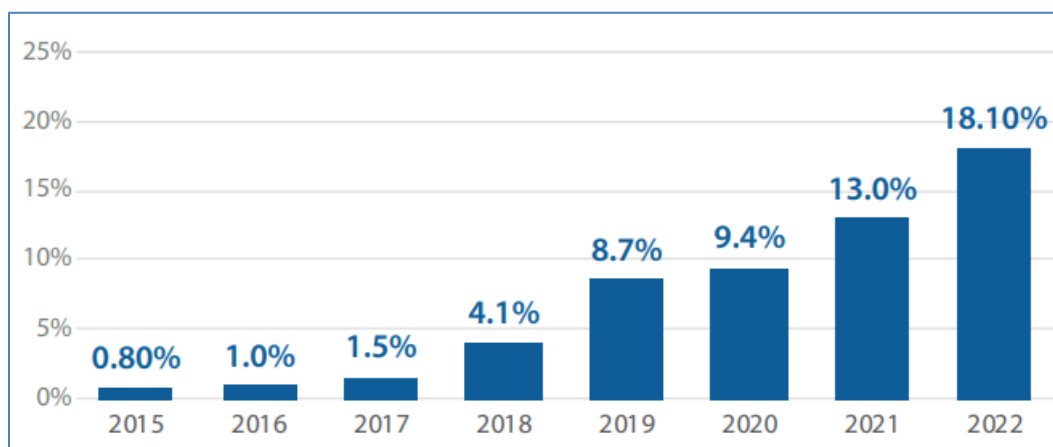


Figure 3: Increasing Zero Emission Vehicles sales rates in BC

Unlike the traditional gas station model, the majority of EV charging occurs at home. Additional charging may occur at work or on the go using public charging stations.

Research demonstrates that early adopters of electric vehicles typically live in single-family dwellings, and that multi-family residents can face challenges in finding a place to charge.

While the District has progressively amended its electric vehicle charging infrastructure policies for new construction (new multifamily projects are now supplying electrical infrastructure to allow charging in 100% of all new residential parking spaces), many District residents in existing buildings face barriers to charging. Reliable and equitable access to charging is critical to enable residents to choose to purchase and operate an electric vehicle.

EXISTING POLICY:

Supporting electric vehicle adoption by increasing the availability of electric vehicle charging infrastructure is one of the key strategies identified in the District's Community Energy and Emissions Plan (Transportation & Land Use Strategy 7). The District's 2021 OCP Action Plan indicates the need to 'develop an EV Strategy to accelerate the transition for passenger vehicle trips' to help reduce emissions from transportation (Priority Action #8, Implementation Activity F).

² Data source: [Zero-Emission Vehicle Update](#), Province of British Columbia, 2022.

ANALYSIS:

EV initiatives to date

The District has advanced a range of initiatives in both corporate operations and in the broader community in recent years. These initiatives have included electric vehicle charging infrastructure policies for new construction, securing senior government funding for public charging stations, and transitioning the District's fleet and associated infrastructure. A comprehensive list of District EV initiatives is provided (Attachment 1).

A barrier to EV adoption: access to charging

A key barrier to EV adoption is access to charging, particularly for residents living in multifamily buildings where retrofits are costly and complex. The Province has recently proposed amendments to the Strata Property Act that will improve access to EV charging by lowering the voting threshold from 75% to 50% for expenditures and changes to common property needed to install EV charging stations, and also requiring strata corporations to approve owners' requests to install stations at the owners' expense when reasonable criteria are met. While these "right to charge" improvements will assist in increasing access to charging, significant costs and barriers remain. Thus, increasing access to public charging as a bridging strategy over the coming years will assist in overcoming these barriers.

Types of EV charging

The length of time to charge an electric vehicle depends on both the vehicle's battery and the charger being used. For some vehicles, plugging into a standard 120V electrical outlet (Level 1) overnight can deliver sufficient charge. However, most charging occurs using Level 2 (208-240V) chargers. Level 2 chargers can charge a vehicle in 4 to 8 hours and are typically used in homes, workplaces, and public spaces. Level 3 or Direct Current Fast Chargers (DCFCs) provide the fastest charge, charging most vehicles to 80% in 15-25 minutes and are typically used in public spaces and major transportation routes.

Of note, B.C. Hydro is currently designing a new optional time of use rate to help shift peak load to times when system capacity is more available. A resident could choose to charge their electric vehicle overnight to take advantage of this reduced rate.

Electric Vehicle Strategy Development

The landscape for electric mobility is rapidly evolving as we shift how we move around, how and where we charge our vehicles, and how best to leverage supportive policy. While the District is advancing several EV initiatives, more coordinated planning and engagement is needed to better understand this evolving landscape to guide decision-making and priority-setting in the coming years.

An overarching EV strategy will help determine the District's role in accelerating the transition to electric mobility, i.e. to what extent can (and should) the District provide EV municipally owned public EV charging infrastructure. The strategy will help determine what amount and type of infrastructure anticipated to meet any gaps in current and future demand, what investment is needed, how best to recover capital and operating costs, and how best to support equitable access to clean transportation to ensure the District is on track towards achieving our emissions reduction targets.

Timing/Approval Process:

Following Council direction, staff will initiate stakeholder engagement and planning and report back to Council with a draft strategy for consideration.

Concurrence:

The Electric Vehicle Strategy is anticipated to involve direct engagement with District of North Vancouver staff from relevant departments, such as Transportation, Development Engineering, Facilities, Parks, and Planning, Properties, and Permits.

Financial Impact:

Development of the Electric Vehicle Strategy will be completed using existing staff and budget resources.

Environmental Impact:

Supporting the transition to electric mobility will reduce emissions from the transportation sector. EVs are more energy-efficient than combustion engines, resulting in less energy being needed to travel an equivalent distance compared to an internal combustion vehicle. Electricity is almost 100% renewable in BC, resulting in far fewer emissions, even when considering the lifecycle impacts from manufacturing vehicle components.³ EVs also improve air quality by reducing the air pollutants through the elimination of tailpipe emissions (fine particulate matter, nitrogen oxides).

Public Input:

The District undertook a two-year public engagement process to develop the Community Energy and Emissions Plan, which feedback showed 68% of respondents were supportive or strongly supportive of actions to increase EV uptake.

Participants engaged through the OCP Action Plan Climate Emergency Stakeholder Workshop highlighted 'Zero Carbon Mobility' as one of the three highest ranked options for the District to consider in addressing the climate emergency.

Options:

1. Provide staff with direction to proceed with the development of an Electric Vehicle Strategy (staff recommendation).
2. Provide alternative direction to staff.
3. Take no action at this time.

³ See e.g. (www.carboncounter.com)

Respectfully submitted,



Adam Wright
Sustainability Planner,
Climate Action, Natural Systems and
Biodiversity

Attachment 1: EV Initiatives in the District of North Vancouver

REVIEWED WITH:					
<input type="checkbox"/> Community Planning	_____	<input type="checkbox"/> Clerk's Office	_____	External Agencies:	
<input type="checkbox"/> Development Planning	_____	<input type="checkbox"/> Communications	_____	<input type="checkbox"/> Library Board	_____
<input type="checkbox"/> Development Engineering	_____	<input type="checkbox"/> Finance	_____	<input type="checkbox"/> NS Health	_____
<input type="checkbox"/> Utilities	_____	<input type="checkbox"/> Fire Services	_____	<input type="checkbox"/> RCMP	_____
<input type="checkbox"/> Engineering Operations	_____	<input type="checkbox"/> ITS	_____	<input type="checkbox"/> NVRC	_____
<input type="checkbox"/> Parks	_____	<input type="checkbox"/> Solicitor	_____	<input type="checkbox"/> Museum & Arch.	_____
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<input type="checkbox"/> Facilities	_____	<input type="checkbox"/> Real Estate	_____		
<input type="checkbox"/> Human Resources	_____	<input type="checkbox"/> Bylaw Services	_____		
<input type="checkbox"/> Review and Compliance	_____	<input type="checkbox"/> Planning	_____		
<input type="checkbox"/> Climate and Biodiversity	_____				

ATTACHMENT 1

EV Initiatives in the District of North Vancouver

EV Initiative	Category	Description
Fleet electrification	Fleet	Replaced 24 fossil gas-powered light duty District fleet vehicles with electric alternatives with another 18 on order in 2023 including trucks and vans; piloting larger electric vehicles and equipment on a trial basis.
Charging infrastructure	Public	Installed 16 EV charging stations for public use at District Facilities (District Hall, Delbrook Community Recreation Centre, Lions Gate Community Recreation Centre)
	Workplace	Designated a dedicated staff EV charger at District Hall for personal vehicles. A fee system was implemented to help manage demand.
EV-Ready policy	Home	New requirements for ‘EV-ready’ parking stalls in new private (multi-family residential, commercial, industrial, and mixed-use) developments.
Grant funding	Public (Federal)	Secured funding for future installation of two public DCFC (fast charging) stations and 8 public Level 2 (medium charging) stations through Natural Resources Canada’s Zero Emissions Vehicle Infrastructure Program
	Public (Federal & Provincial)	Applied for funding for future installation of public EV charging stations installations through the CleanBC Communities Fund – Investing in Canada Infrastructure Program
Low carbon credits	All	Applied for credits as a supplier of low-carbon fuel (EV charging) through the BC Low Carbon Fuel Standard. Revenue from the sale of these credits on an annual basis offsets the cost of operating the District’s charging infrastructure.
Resources & information	Public & Home	Added information, guidance, and resources to DNV.org website about EVs and EV incentive programs offered by other levels of government.