3

BIG MOVE 3

ZERO-EMISSIONS TRANSPORTATION

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ZERO-EMISSIONS TRANSPORTATION

Two-thirds of Kamloops' community GHG emissions in 2017 were from the use of gas- and diesel-powered vehicles.

Reliance on personal vehicles will eventually be reduced through the changes in neighbourhood design and improvements to transit and active transportation that are prioritized in this plan. In the meantime, ZEVs do not produce tailpipe emissions as they have electric motors that are powered by batteries or hydrogen-based fuel cells. While electric vehicles (EVs) require electricity for battery recharging, BC's electrical grid is mostly supplied by low-carbon hydroelectricity. The number of ZEVs in Kamloops is rising rapidly, and they are supported by provincial sales targets regulations that require that by 2040, all new passenger vehicles sold in BC be zero emissions. Other initiatives, such as BC Transit's commitment to buying only electric buses starting in 2023, will help to drive innovation and demand for zero-emissions medium- and heavy-duty vehicles.

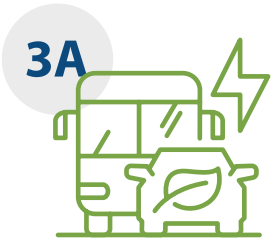
This Big Move outlines strategies to facilitate the transition to zero-emissions light-, medium-, and heavy-duty vehicles. There is still a purchase cost premium for EVs compared to their gas-powered counterparts; therefore, incentives may be important until cost parity is reached, which is anticipated within the next few years. Increasing access to charging amenities and outreach on the benefits of EVs (e.g. reduced operating and maintenance costs) could encourage faster uptake. While technologies for electrification of medium- and heavy-duty vehicles currently lag behind passenger vehicles, there are opportunities to support their adoption (e.g. through encouraging the use of electric delivery vans and E-cargo bikes for urban freight delivery). These strategies will result in reduced carbon and noise pollution, which will improve our air quality and health.

CO-BENEFITS

- Improved Air Quality
- Improved Public Health
- Green Economy and Innovation

TARGET

By 2050, 85% of kilometres driven by Kamloops-registered passenger vehicles will be by zero-emissions vehicles.



3A - Zero-Emissions Light-Duty Vehicles

GOAL:

To support the transition to zero-emissions transportation choices.

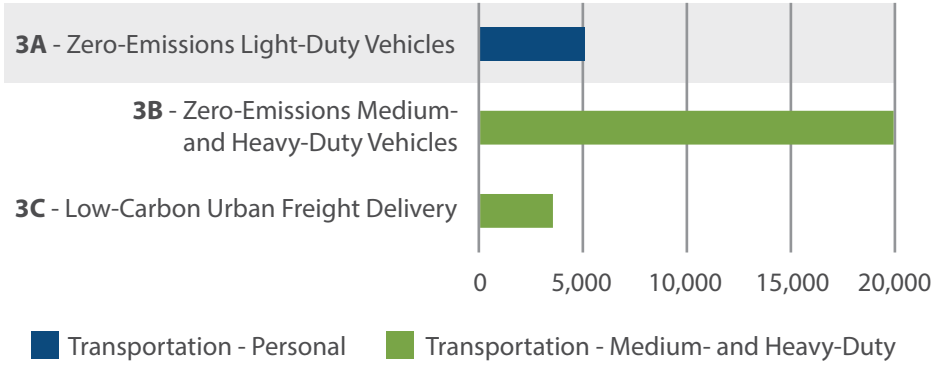
ECONOMIC CONSIDERATIONS:

- City investments in community-based EV and E-Bikes initiatives are estimated at $240,000/year and help address barriers such as access to home charging.[i]
- To establish an EV charging network would cost $20,000/year ($600,000 amortized over 30 years; City-owned and/or private sector incentives).[ii]
- Currently, there is a cost premium to purchase an EV over a comparable gas-powered vehicle (approximately 9% for light-duty vehicles). Electric versions of light-duty vehicles are projected to reach cost parity by as early as 2026. Used EVs will also increase in availability.
- Being more efficient and having fewer moving parts, the cost to maintain EVs is up to 40% lower than for gas-powered vehicles.
- In 2050, the average household cost to operate and maintain a vehicle will be nearly $3,000 less than it is in 2020, as a result of increased EV ownership.[iii]

ACTIONS:

- ❑ Implement the City's EV and E-bike Strategy, prioritizing support for home, workplace and public EV charging infrastructure.
- ❑ Encourage private sector investment in new EV charging infrastructure.

PROJECTED ANNUAL GHG REDUCTIONS BY 2050:



5,000 tCO_2e
(Moderate)

3B - Zero-Emissions Medium- and Heavy-Duty Vehicles

GOAL:

To support institutional, commercial and industrial fleets' transition to zero-emissions vehicles and equipment.

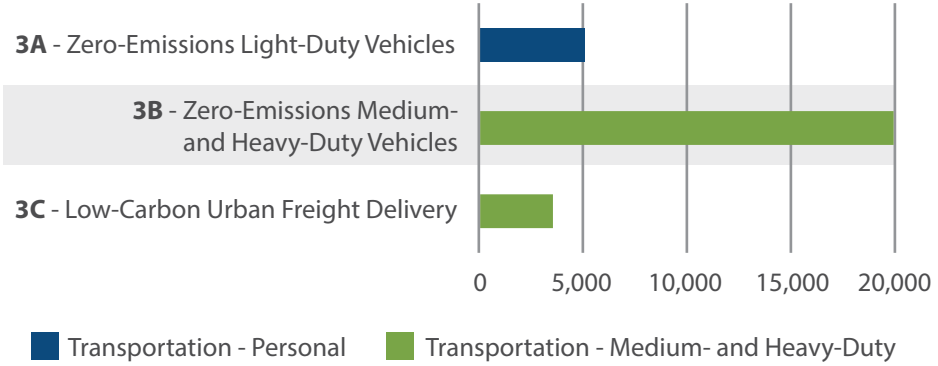
ECONOMIC CONSIDERATIONS:

- Presently, electric medium- and heavy-duty vehicles have a much higher cost premium than light-duty electric vehicles, and electric options for some heavy-duty uses are not available. However, a wide range of electric options are projected to be cost competitive within 5–10 years, depending upon vehicle type, due to declining battery costs, lower fuel and maintenance costs, and improved functionality.[iv]

ACTIONS:

- ❑ Implement EV and E-bike Strategy actions that encourage the electrification of commercial fleets.
- ❑ Promote the use of renewable, low-carbon fuels (e.g. biofuel, hydrogen, and fuel cell technology) in municipal or commercial fleets, where electrification options are not available or feasible.

PROJECTED ANNUAL GHG REDUCTIONS BY 2050:



20,000 tCO_2e
(Very High)

3C - Low-Carbon Urban Freight Delivery

GOAL:

To encourage the shift to zero-emissions delivery vehicles within the urban core and neighbourhood town centres as the demand for home deliveries increases.

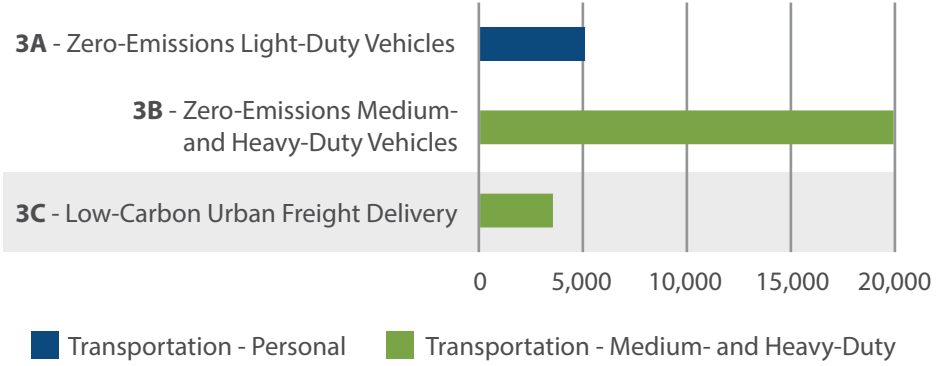
ECONOMIC CONSIDERATIONS:

- City incentives or support in establishing an urban freight logistics hub may make the adoption of low-carbon delivery modes more feasible for freight companies.
- Private companies that invest in electric delivery vehicles and/or cargo bikes will have lower operational and maintenance costs.

ACTIONS:

- ❑ Identify low-carbon urban freight and last-mile delivery logistics opportunities as part of the proposed Truck Route Study to reduce traffic and encourage the adoption of smaller and cleaner delivery vehicles, including electric cargo vans and cargo bikes.
- ❑ Develop zero-emissions delivery zones in select commercial areas of the city and incentivize the use of smaller, cleaner vehicles (e.g. e-cargo bikes, electric delivery vans) for last-mile delivery.

PROJECTED ANNUAL GHG REDUCTIONS BY 2050:

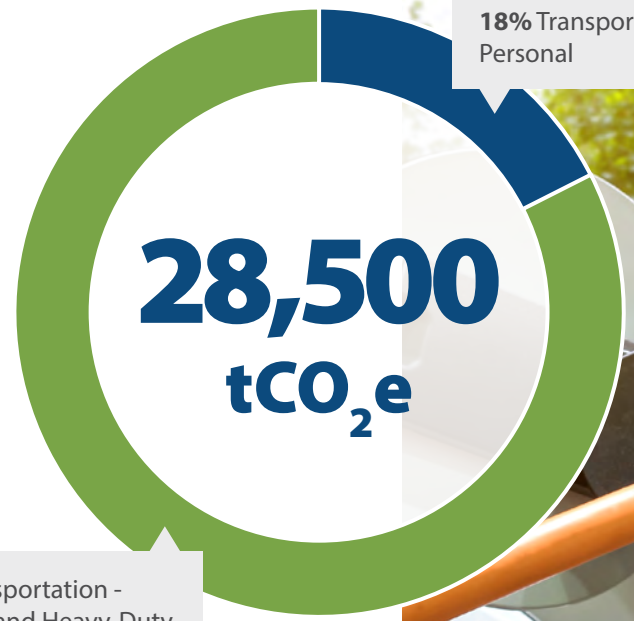


3,500 tCO_2e (Moderate)

TOTAL BIG MOVE 3

PROJECTED ANNUAL EMISSIONS REDUCTIONS

(tCO_2e) BY 2050, BY SECTOR



For emissions modelling purposes, it was assumed that the majority of light-duty vehicles would be for personal transportation use. Substantial emissions reductions are to be achieved from residents transitioning to electric vehicles. Although much of this will be facilitated through provincial and federal policies, actions in this Big Move will speed up the scale of EV adoption. Medium- and heavy-duty vehicles emissions will also decrease, although the technological challenges of electrification and lack of alternatives for some heavy-duty vehicle types mean that it will likely be more difficult to transition the majority of these vehicles by 2050.

[i] "CCAP Economic Analysis Summary," City of Kamloops.
[ii] Ibid.
[iii] Ibid.
[iv] "Race to zero: How manufacturers are positioned for zero-emission commercial trucks and buses in North America," The International Council on Clean Transportation, October 29, 2020, https://theicct.org/publications/canada-race-to-zero-oct2020.