Community Electric Vehicle & E-Bike Strategy

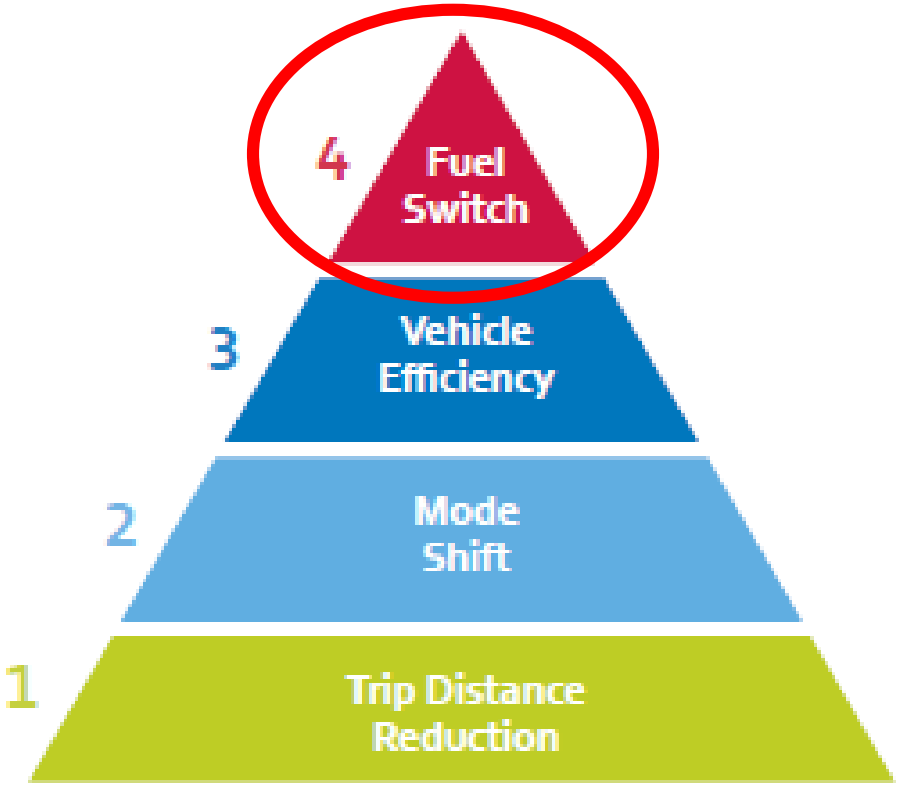
September 27, 2021

City of Kelowna

Purpose

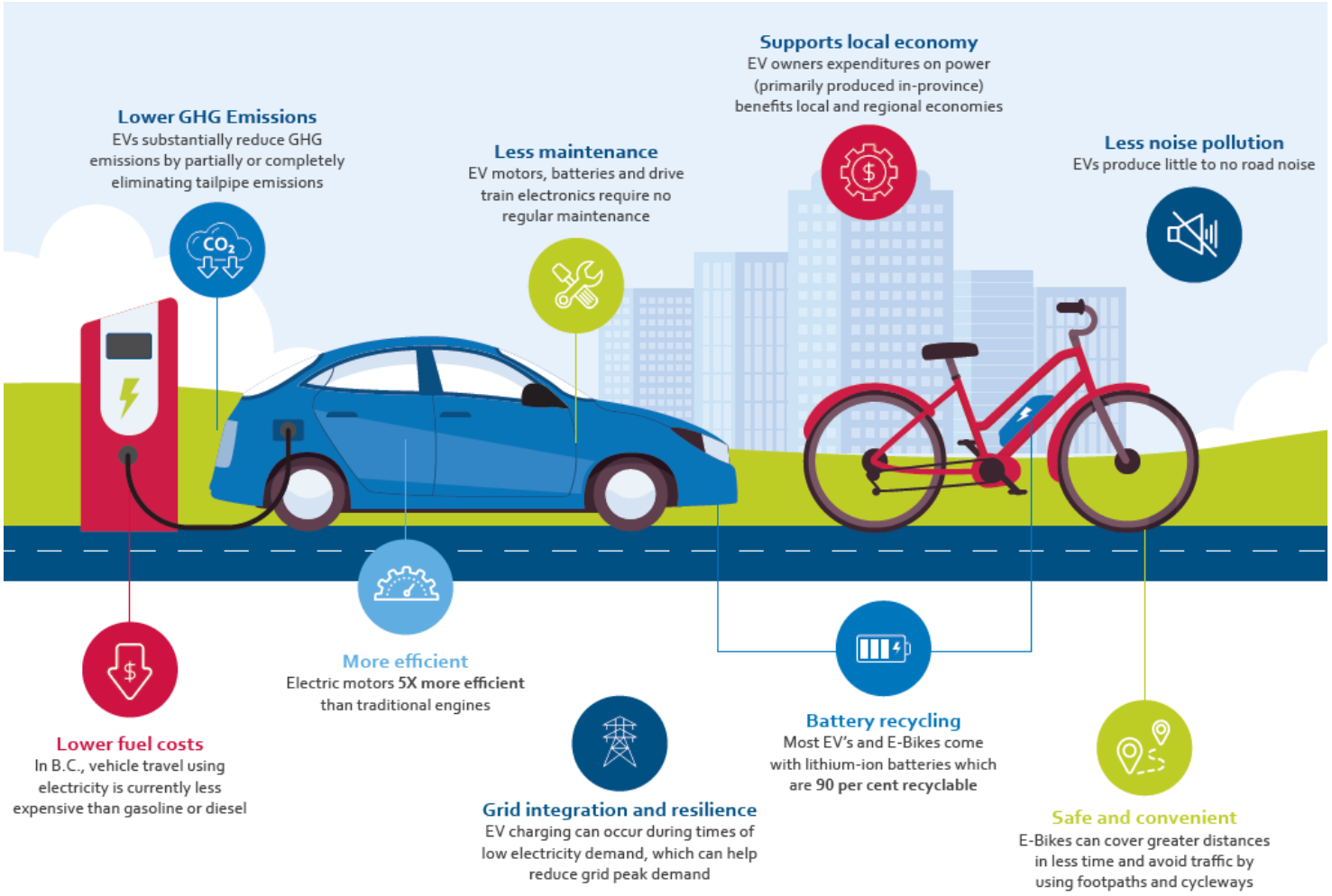
- To inform Council on the Community EV & E-Bike Strategy for Part 3 Buildings.
- To obtain Council's endorsement of the strategy, including objectives and recommended actions.
- To obtain Council direction to include EV charging infrastructure requirements for new residential, institutional, commercial, industrial, and service station developments in the forthcoming Zoning Bylaw update.
- To obtain Council direction to pursue stakeholder engagement for the EV charging infrastructure requirements, as part of the Zoning bylaw update engagement.

EVs part of broader sustainable transportation system



Background

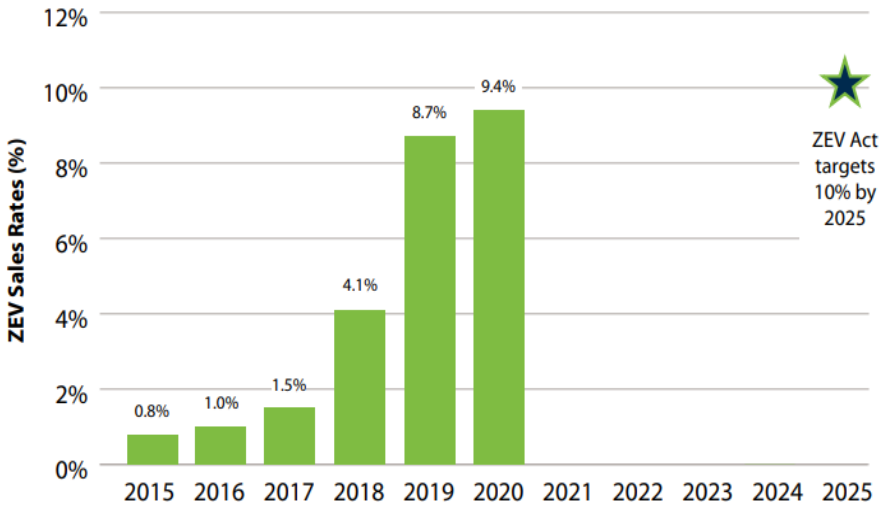
What is driving the shift to EVs?



City of **Kelowna**

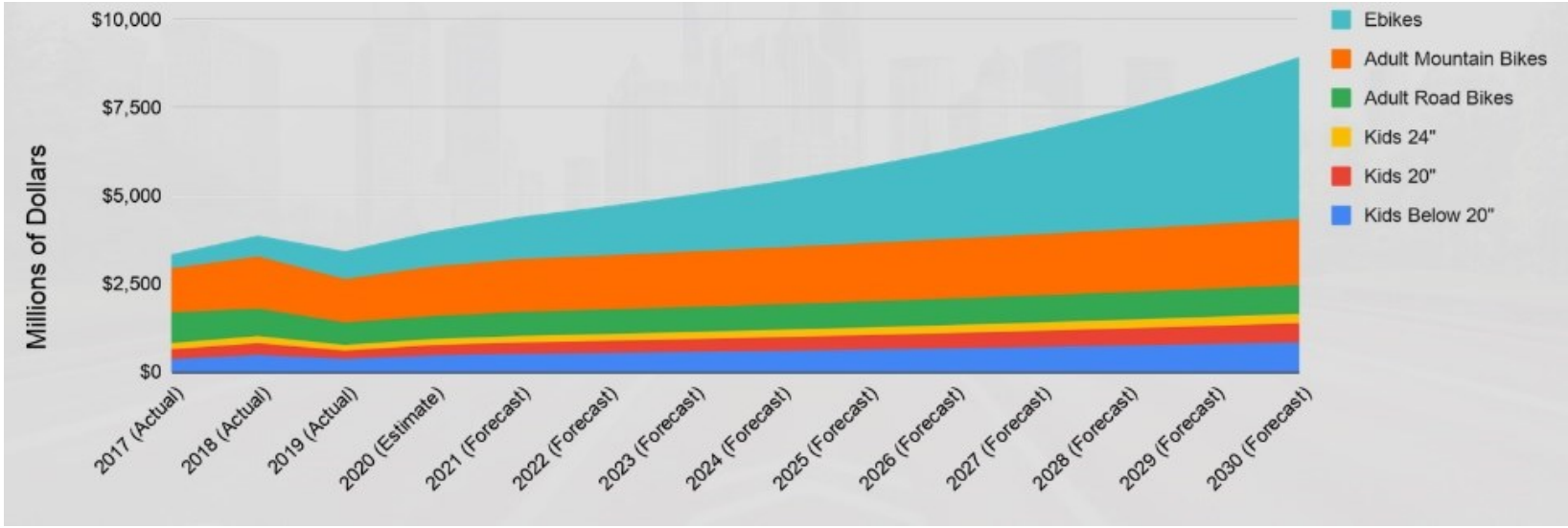
Why do we need a strategy?
EV Market growth

- Light-duty EV sales increasing quickly
- BC leading the charge
  - 9.4% of new light-duty vehicle sales in 2020
  - Over 2,500 public chargers
- EV ownership in Kelowna nearly tripled between 2018 and 2020



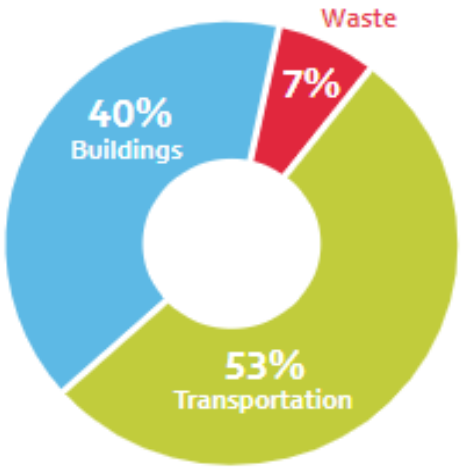
Why do we need a strategy?
E-Bike Market growth

Estimated gross retail sales of various types of bikes (North America)

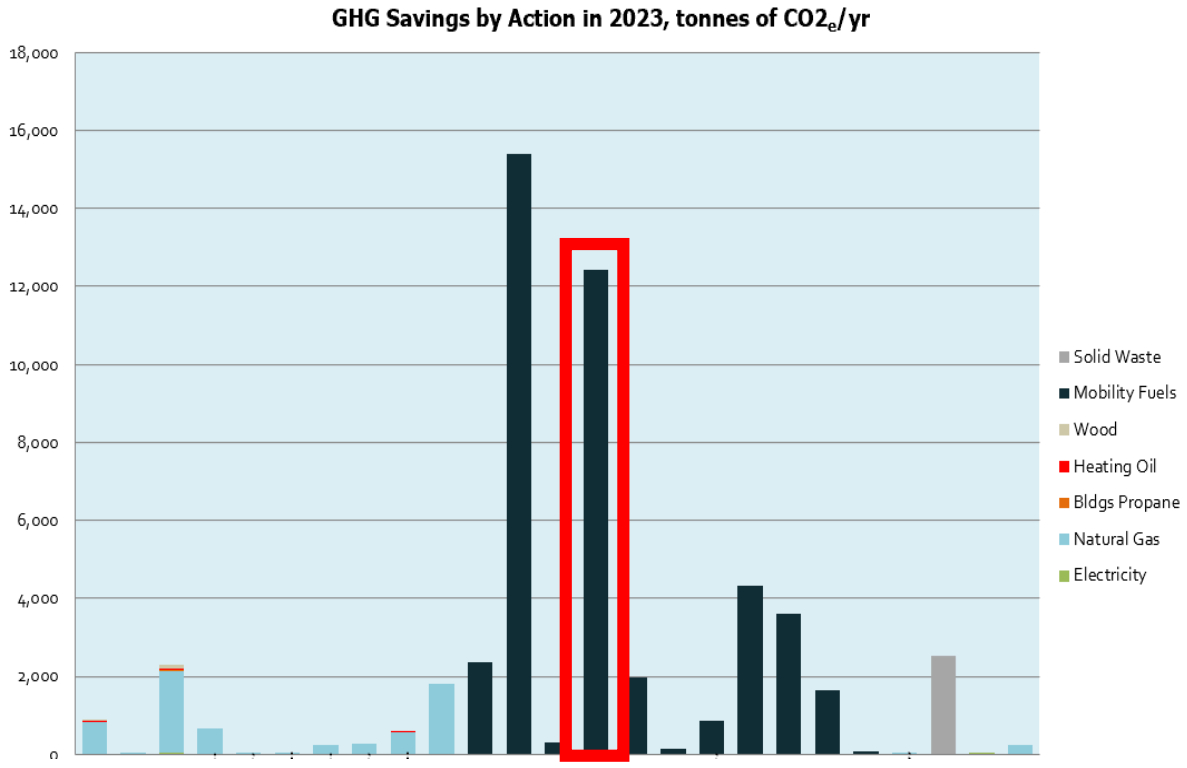


https://www.bike-eu.com/market/nieuws/2020/12/e-bike-industry-needs-to-invest-to-meet-projected-growth-10139332

Why do we need a strategy?
Reduce GHG Emissions



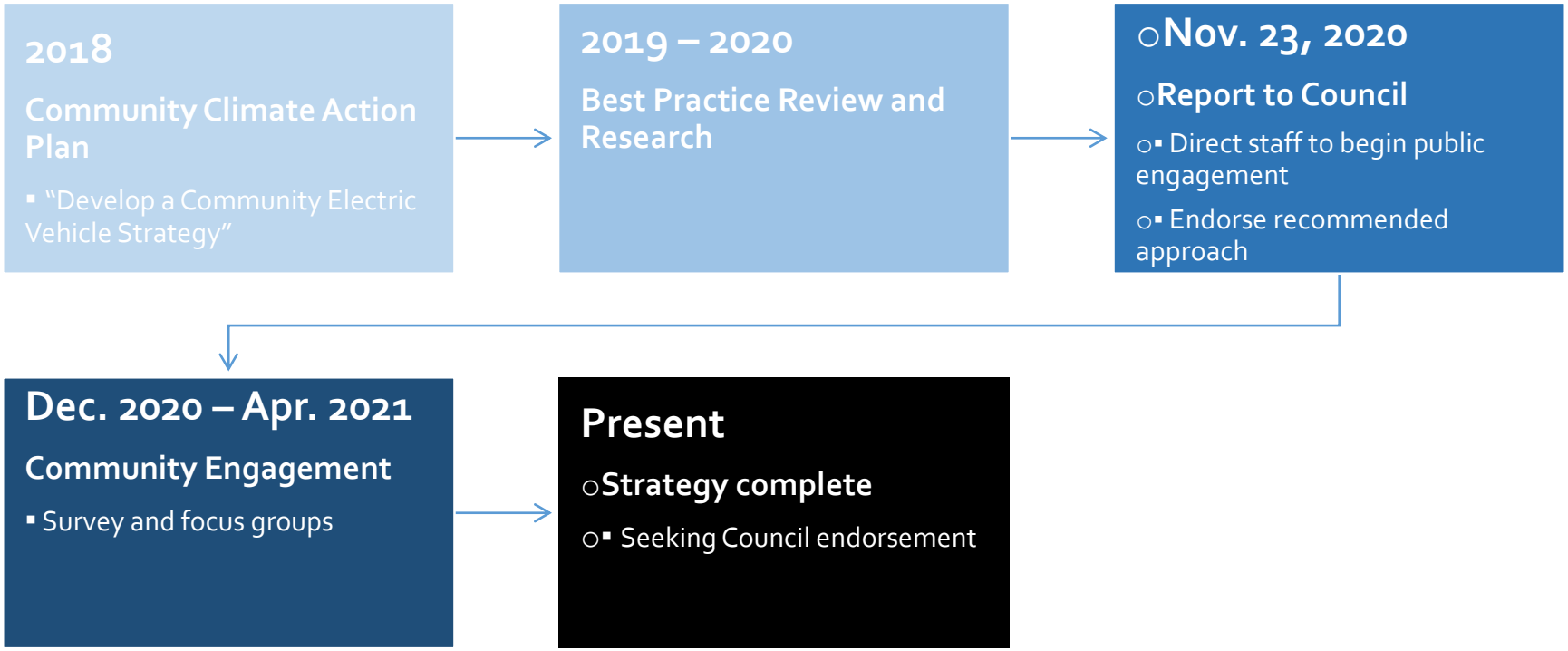
Kelowna GHG Emissions Profile (2017)



"Develop a Community EV Strategy"

Strategy Development

Strategy Development



Engagement Findings: **Survey**

Survey live for **60** days

223 responses received

95% of respondents live within the City of Kelowna boundaries

20% of respondents own an EV

Despite keen interest, by far the biggest challenge to EV adoption for non-EV owners was the high cost to purchase an EV.

Non-EV owners are hesitant to buy an EV due to, among other things: limited or no access to charging for longer trips, limited vehicle range, and limited or no access to charging at home.

Current EV drivers want predictable charging experiences. This is likely why a large proportion of EV owners prefer to charge at home.

Non-EV owners similarly envision charging at home most often. However, many non-EV owners live in either a MURB without charging facilities, or they only have access to on-street parking.

About one third of non-EV owners surveyed plan to purchase a new vehicle within two years, and another one third within two to five years. Almost all these vehicles will be replacement vehicles rather than additional ones. BEVs and PHEVs were the most popular choices for new vehicle purchases.

Engagement Findings: **Focus Groups**

# of attendees:	19	20	20	6

Large Fleet Operators

- #1 motivator for EV transition is carbon neutrality mandate
- Want guaranteed access to charging infrastructure without having to invest on their own

Non-EV Drivers

- Lack of at-home charging is a major barrier for MURB residents
- Secure E-Bike locking and storage is a major barrier

Local EV Drivers

- Mostly charging at home (Almost exclusively live in SFDs)
- Would use Level 2 public chargers if there were more

Strata and MURB Owners

- Adding EV charging infrastructure to existing MURBs can be costly
- High usage of bike/E-Bike storage in existing buildings

Elements of the Strategy

Scope of the Strategy

In-Scope for Community Low-Carbon Mobility Strategy	Out-of-Scope of Community Low-Carbon Mobility Strategy		
	Corporate Green Fleet Strategy	**Provincial or Federal Government**	**Technology/Sector not Within Scope**

• Plug-in EVs: BEVs, EREVs, and PHEVs
• E-bikes
• Charging Infrastructure
  • At home
  • At work
  • Public
• EV charger incentive top-ups
• Parking pricing
• Education and awareness
	• Charging Infrastructure for City Fleet
	• EV purchasing for City Fleet
		• New EV purchase incentives
		• EV charger incentives
		• Fuel pricing
		• Fuel standards
		• Utility pricing and regulation
		• EV supply
			• Electrification of public transit or heavy-duty vehicles
			• Hydrogen fuel cell
			• Conventional Hybrid electric vehicles (HEVs) (i.e., not plug-in)
			• Other forms of e-mobility (e.g., e-scooters, e-mopeds)

Vision and **Objectives**

VISION

Kelowna is a city where charging an EV and riding an E-Bike is easy, convenient, and affordable.

OBJECTIVES/PRIORITIES

Increase access to EV charging on private property.

Expand the public EV charging network.

Increase awareness and knowledge level of EVs, EV charging options, and E-Bikes among residents.

Support and accelerate fleet and shared mobility (e.g., carshare, bikeshare, ridesharing, ride-hailing) electrification.

Expand E-Bike infrastructure and improve E-Bike affordability.

EV Charging on Private Property

Targets
By **2023** 100% of parking stalls in all new residential developments will be EV Ready.
By **2023** at least 10% of parking stalls in all new commercial developments will be EV Ready.
By **2023** all new service stations will have alternative fueling infrastructure.
By **2030** all existing multi-unit residential buildings will have adequate EV charging infrastructure.

Key Actions

- EV Ready requirements for new construction
- Support charging in existing MURBs (e.g., resources, incentives)
- Educate the public, building industry, businesses, and Strata Council's on EV charging

Expand Public EV Charging

Targets
By **2025** the majority of Kelowna EV drivers feel the public charging network is adequate in our Urban Centres.
By **2030** the City expands the public charging network in accordance with the priority locations identified in the Public EV Infrastructure Gap Analysis.

Key Actions

- Complete a Public EV Charging Infrastructure Gap Analysis
  - Expand the public charging network accordingly
- Explore new locations and use cases for public charging (e.g., on-street, supporting 'garage orphans')

Promote Local EV Adoption

Target
New ZEV sales in Kelowna meet or exceed federal and provincial targets: • 10% by 2025 (provincial target) • 30% by 2030 (provincial target • 100% by 2035 (federal target)

Key Actions

- Expand EV and E-Bike awareness
- Continue the Eco-Pass parking permit program
- Support federal and provincial programs that are vital to ensuring EV uptake

EV Fleets and Shared Mobility

Targets
By **2025** all new light-duty fleet vehicle purchases will be ZEVs.
By **2030** all shared mobility trips in light duty vehicles will be in a ZEV .

Key Actions

- Investigate opening public charging for EV fleets
- Implement an E-Bike sharing program
- Facilitate a local EV Fleet Peer Network

E-Bike Infrastructure and Affordability

Target

By **2040,** quadruple the number of trips made by bicycle.

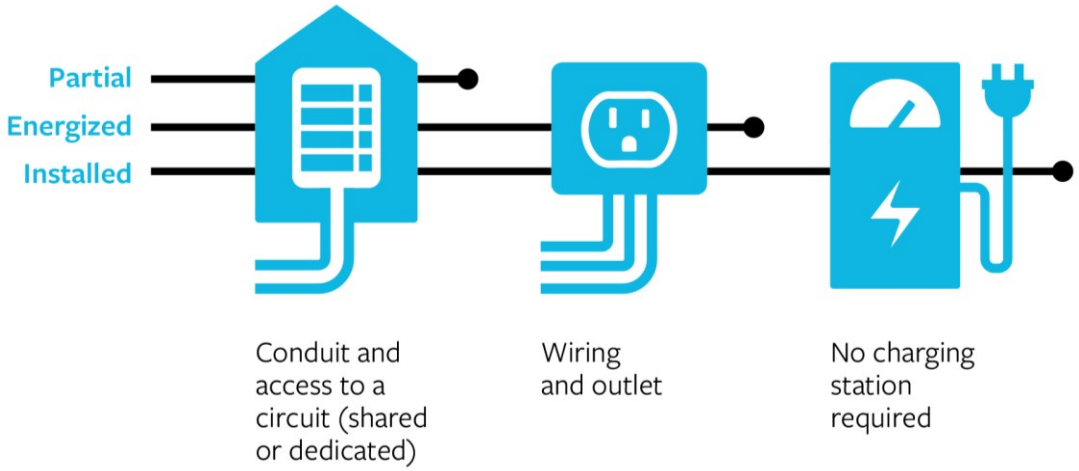
Key Actions

- Assess the feasibility of E-Bike charging requirements for new residential developments
- Explore secure public storage options for E-Bikes
- Consider E-Bike incentives for certain demographics

EVs in the Zoning Bylaw Update

Staff recommend the implementation of three actions this fall/winter to coincide with the Zoning Bylaw update:

1. Implement EV charging infrastructure requirements for new residential developments;
2. Implement EV charging infrastructure requirements for new institutional, commercial, and industrial developments; and
3. Require new gasoline service stations to have alternative fueling infrastructure.




City of
Kelowna
Questions?