

E-Bikes:

More Options for People on the Move

E-bikes are a growing mode of active transportation. Their unique characteristics suit a wide range of uses: commuting, recreation, and tourism. With their electric motor assistance, e-bikes make it easier for new riders to get into active transportation, and they provide yet another option to replace vehicle trips with their added distance and load carrying capabilities.

In North America, e-bike sales are growing rapidly. This trend is expected to result in an increase in active transportation mode shares furthering the goals and pathways of Move. Commute. Connect., the province's active transportation strategy. The strategy aims to double the trips taken by human-powered travel by 2030 and e-bike are a significant opportunity to achieve this target.



E-bikes provide benefits for different user groups:

- Aging adults
- Individuals with physical disabilities
- Commuters who live beyond a comfortable cycling distance or live in hilly areas that may deter standard cycle use
- Individuals in less dense areas who must travel greater distances for services
- Individuals who need a vehicle that can transport children or cargo

Common Considerations with E-Bikes



Targeting less effort to travel to work usually means the assist is engaged to a high setting.

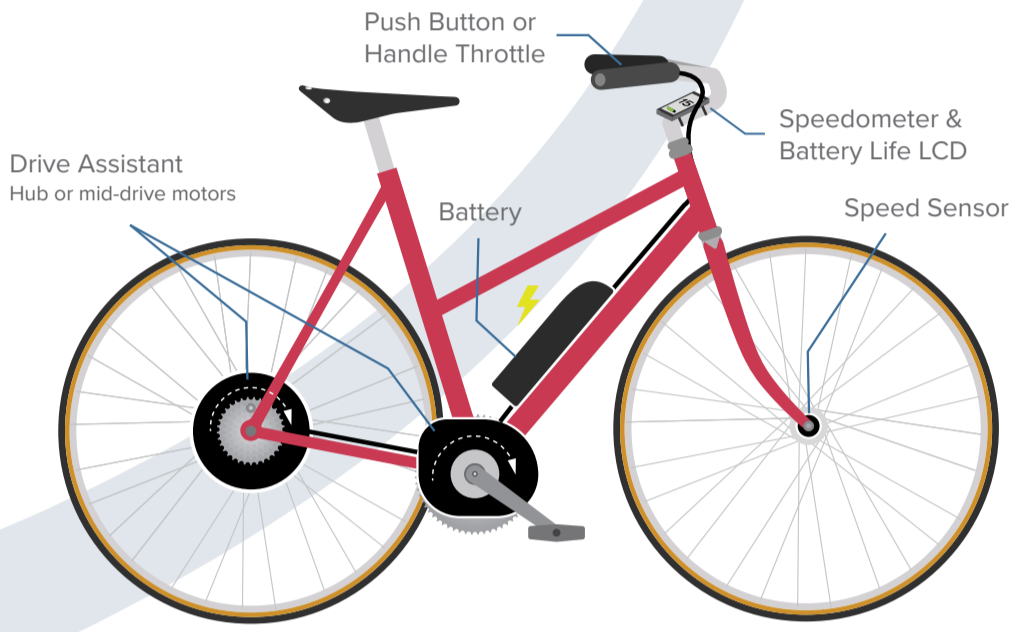


Charging can occur at home or at work, particularly with removable batteries, but commuters typically charge over night to ensure battery life.



Size and weight of e-bikes are less relevant while riding because assist is on, but weight may be an issue for storing bikes at destinations if secured bike storage facilities are not accessible at ground level.

E-Bike Breakdown



E-Bike Styles

As e-bikes are an evolving technology, there is variance across jurisdictions in the definition of an e-bike. This introduces a range of styles: with such variety, there's a style to suit everyone. The key characteristics are pedal requirements, motor size, and speed restrictions.



City Bike



Mountain Bike



Road Bike



Trike



Low Step Bike



Longtail Cargo Bike



Long John Cargo Bike

Cargo e-bikes increase the range and load capabilities of a standard cargo cycle. These styles can be up to 2.6m long and .9m wide, such as in the long john configuration (a standard cycle is 1.8m long and .7m wide), with the weight of the bike alone being up to 50kg. With the different configurations available, users are able to move both goods and family members. The larger size and weight do influence design of storage facilities and may ultimately impact the design of bike lanes.

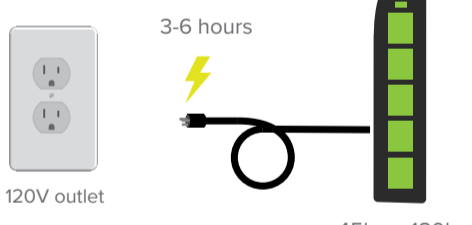
Business Opportunities with E-Bikes

E-bikes, particularly cargo bikes, create an opportunity for a new business model. E-bike business opportunities are growing. These include delivery riders, service providers and food bikes. E-bike businesses will continue to grow as the bikes become more available to entrepreneurs. E-bikes provide a significantly lower entry cost point than food trucks. They allow entrepreneurs to complete most of the work themselves. And that they provide services through environmentally conscious transportation is also a major positive cited for using e-bikes. E-bikes also present an opportunity for guided tour companies as they allow tourists to access places previously inaccessible using standard cycles due to distance or grades.

In Europe, trades are moving to e-bikes for small repairs for both cost and sustainability purposes. Considering the growing prevalence of e-bike businesses in B.C., different types of businesses can be expected to enter the market in the future.



Keep on Biking: Charging your E-Bike



E-bikes vary in range and charge type. Range is affected by battery size, weight of bike, how often the assist is used, and what type of terrain the cyclists are travelling. Depending on these factors, the range of a full charge varies from 45 kilometers to 180 kilometers.

Although en route public charging facilities are currently limited, these facilitated are not considered essential in further supporting e-bike use for the following reasons:

- Battery charging involves significant downtime, typically two hours for a 'fast' charge.
- Concerns related to how chargers, batteries, and bikes will be secured to prevent theft.
- Carrying chargers is cumbersome and there is no existing universal charging connector at charging stations.
- Commuters typically have access to electrical outlets at the end of their commute.
- Tourists and recreational users typically have access to electrical outlets at tourist accommodation facilities.
- For battery charging stations to be helpful along bike routes, cyclists would currently need to bring their own charging systems.

You've Arrived! End-of-Trip Facilities for E-Bikes

Endpoint infrastructure includes secure cycle storage that protects the e-bike from theft, while being located suitably close to the user's destination. Given the higher cost of e-bikes, protection from theft is a concern for riders. Appropriately secured end-of-trip facilities will encourage users to travel with their e-bikes and should be considered an essential element of any infrastructure strategy.



Opportunities to Increase E-Bike Use



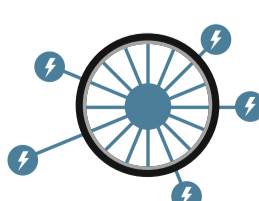
Provide standard electrical voltage outlets at end-of-trip facilities that enables flexibility to adapt to future charging needs.



Ensure secure bicycle parking facilities are designed to accommodate the additional weight of e-bikes and cargo e-bikes and address the greater potential for theft given their higher cost over standard bicycles.



Given e-bikes "flatten hills" and make longer cycling trips feasible, evaluate existing suburban and regional trails for opportunities to improve infrastructure and develop longer distance trail systems.



Charging infrastructure may be beneficial during periods of substantial non-use time, such as lunch breaks of a multi-day bike tour along the trail at picnic areas, at cafes or restaurants.



Help mitigate the high cost of e-bikes for consumers.