

Incorporating E-Bikes into Safe Cycling in Vancouver

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Electric Bikes

The term e-bike for “electric bike” encompasses more than just a bicycle with a battery. The spectrum of e-bikes is broad; it can include bicycle style e-bikes and scooter style e-bikes, which include motorized wheelchairs or mobility scooters. E-bikes often have three main components: a battery, controller and a motor (Fishman & Cherry 2016).

Why E-bikes?

Vancouver Healthy City Strategies Goals:

- “Being and Feeling Safe and Included”
- “Active Living and Getting Outside”
- “Getting Around”
- “Environments to Thrive In”

E-Bikes are better for the environment than a car.

E-Bikes allow older populations or those with other limitations participate in active transportation.

E-Bikes are gaining popularity across the world.

Methods

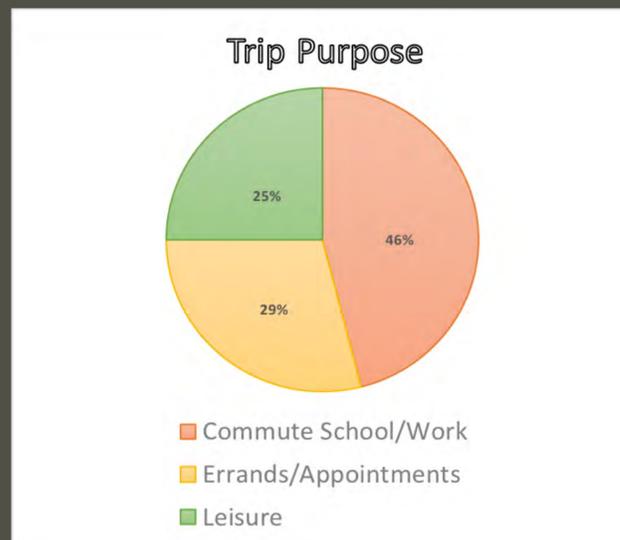
We identified participants by contacting the e-bike community, clinics and hospitals in the Vancouver area. Additionally we advertised the study with posters. After recruitment we had successfully conducted 7 interviews.

The participants were asked a series of questions about cycling habits, route preference, comfort and safety.

Results and Trends:

There are many reasons one might choose to use an e-bike.

- The participants appreciate the ecological advantages of e-bike usage.
- Average **length of trip was 51 minutes** but ranged between 30 – 60 minutes.
- **Almost half** of the participants use their e-bike for commuting.
- The most **common barriers** to e-bike cycling were traffic issues such as...
 - Dangerous intersections and roundabouts
 - Speed of traffic
 - Motor vehicles not abiding to traffic rules
- Clear cycling infrastructure was considered only to be part of the solution for safety and comfort, the other part of the solution is compulsory **education for all cyclists and motor vehicle users to promote safety.**
- E-cyclists were passionate about e-bike promotion.

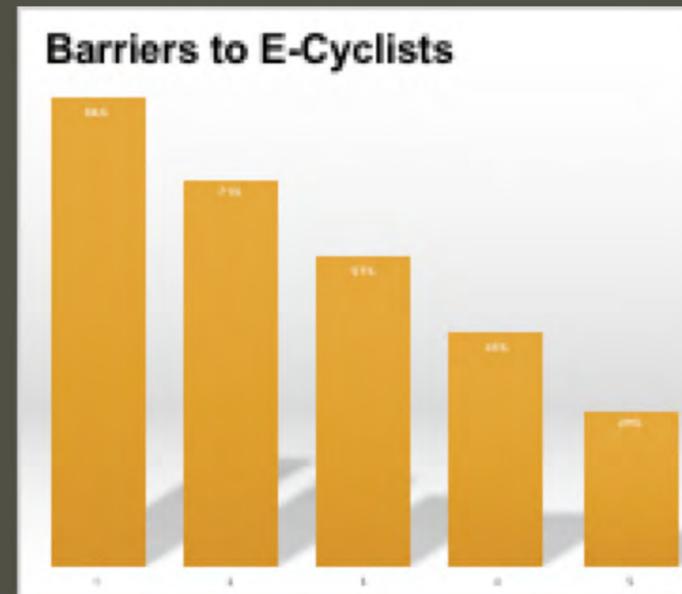


Comfort and Safety

Very important	Somewhat important
<ul style="list-style-type: none"> - Paved smooth surface - Protection from traffic by physical barrier - Continuous lane - Reasonable lane width 	<ul style="list-style-type: none"> - Adequate lighting - Maintained and clean route - Clear signage

Accessibility

1. Dangerous intersections/roundabouts Speed of traffic Traffic rules not followed by motor vehicles	86% agree this is a barrier
2. Volume of traffic Part of the route is unsafe	71% agree this is a barrier
3. Too many transitions between different types of cycling routes Lack of connecting infrastructure	57% agree this is a barrier
4. Hills/ gradients Lack of secure bike storage Too many traffic lights Uncertainty about traffic rules Traffic rules not followed by other cyclists	43% agree this is a barrier
5. Inconsistent traffic rules Rules not followed by pedestrians	29% agree this is a barrier



Recommendations

- **Separate bicycle paths from motor vehicles and pedestrians with a physical barrier**
- **Aim to design continuous routes**
- **Recognize that no single cycling route will feel safe and comfortable for every cyclist**
- **Educate both cyclists and motor vehicles about rules, bike route design and safety**

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