Background: Based on the role of transportation on the environment, cycling is being advocated as an alternative to fossil-fuel-dependent modes of transportation (United Nations Environment Programme [UNEP], 2010). Unlike other global regions, North America still has a relatively low rate of cycling, especially for utilitarian purposes (Oke, Bhalla, Love, & Siddiqui, 2015; Pucher, Dill, & Handy, 2010; Zhang, Shaheen, & Chen, 2014). Nanaimo, BC currently has a 1% share of trips made by bike but is aiming to "double our sustainable travel mode share for trips made by walking, cycling and transit from 12 to 24% by 2041" (City of Nanaimo, 2014, p.17). Cycling, both on traditional bikes as well as electric bikes (e-bikes), will play a key role if the municipality intends to reach its goal. Promoting cycling or e-biking requires both a cultural understanding of motivations and providing appropriate infrastructure (Aldred & Jungnickel, 2014; Gossling, 2013; McCarthy, 2011; Pucher & Buehler, 2008; Pucher et al., 2010). However, it is important to acknowledge the differences between traditional cycling and e-biking, especially in uses and infrastructure needs (Huertas-Leyva, Dozza, & Baldanzini, 2018; Ling, Cherry, MacArthur, & Weinert, 2017).

Objectives: The objective of this research is to study the feasibility of e-bikes as an alternative mode of transportation in Nanaimo. Two questions will be asked: 1) what are the current perceptions of e-biking in Nanaimo?; and 2) does Nanaimo's infrastructure currently support e-bike use? Based on Nanaimo's varied topography, low population density, and sprawled development, I hypothesise that cycling perceptions across all demographic cohorts will favour e-biking as an alternative mode of transportation, and that Nanaimo's current infrastructure does not support safe and comfortable e-biking.

Theoretical framework: In order to analyze my data, I will use grounded theory (Corbin, 2017), whereby the data collected will inform a theory of e-bike use. While other frameworks inform this research, such as the importance of attitude in e-bike use (Haustein & Moller, 2016) and the impact of risk on cyclist use of infrastructure (Schepers, Hagenzieker, Methorst, van Wee, & Wegman, 2014), grounded theory will allow themes and patterns to emerge which can then be synthesized into theory.

Methods and procedures: In order to determine attitudes towards e-bikes, three populations will be identified and surveyed: cyclists, e-bikers, and non-cyclists/non-e-bikers. Individuals will be identified via social media by posting on the Facebook pages/other platforms of local bicycle shops and through posters placed on campus at Vancouver Island University and neighborhood shops. The survey questions will be adapted from Haustein & Moller (2016), to address not only e-bike user attitudes, but non-users' attitudes. Questions will also be developed regarding users' needs for infrastructure and how it might differ from traditional bicycle infrastructure, as there is a gap in the literature on this topic. Responses will be coded for an overall statistical analysis, where common themes can be evaluated and discussed. **Conversely,** the evaluation of e-bike infrastructure in Nanaimo will be a qualitative/ quantitative analysis. Both e-bikers and cyclists experience similar risks on roads, except for a higher risk for e-bikers at intersections (Petzoldt, Schleinitz, Heilmann, & Gehlert, 2017). Additionally, e-bikes travel faster than traditional bicycles, thereby increasing the potential risk for injury from collisions or accidents (Haustein & Møller, 2016; Huertas-Leyva, et al., 2018; Petzoldt, et al., 2017). Current cycling infrastructure will be evaluated quantitively, with metrics provided on kilometers of bike paths, kilometers of bike lanes, width of roads and bike paths, and traffic counts on key roads. These data will be compared to survey results to indicate if the infrastructure meets the perceived needs of users.

Significance: Ground transportation in North America is dominated by private automobiles, contributing to climate change, congestion, and a crisis of public health. There is an urgent need to encourage alternative modes of transportation, and e-biking is one important alternative. In order to successfully shift peoples' travel habits, it is necessary to understand their current views and attitudes towards various modes of transportation, and to understand the infrastructure needs for the new mode of transportation. Understanding attitudes towards e-bike use can help planners and councils take appropriate measures to encourage modal shifts, whether through infrastructure or education. The potential for e-bike use to replace car use is especially relevant in smaller, sprawled suburban communities where traditional biking may not be as desirable. Therefore, I will make my report available to Nanaimo's city council and any other planning group that may be interested.

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