Travel Behaviour and Greenhouse Gas Impacts of the Saanich E-Bike Incentive Program

Final Report

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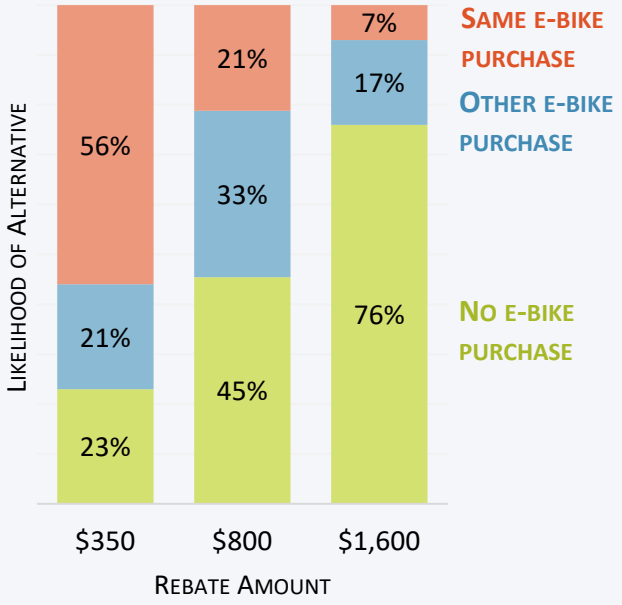
EXECUTIVE SUMMARY

This study investigates the travel behaviour and greenhouse gas (GHG) impacts of the Saanich e-bike incentive program, which distributed 389 purchase rebates of $350, $800, or $1600 (income-conditioned) to eligible residents in late 2021 and 2022. A panel of 402 study participants (164 from the incentive program and 238 non-incentivized purchasers of conventional or electric bicycles from the region) was recruited and surveyed in three waves (near purchase, and then 3 and 12 months later) to study short- and long-term impacts of incentivized bicycle purchases.



We find that the program attracted a large portion of new or marginal e-bike purchasers (23% to 76%, increasing with rebate level). These purchasers were highly satisfied with their new e-bikes, and used them regularly (3 to 4 days and 30 to 70 km per week). The incentive recipients reduced their auto use by 49 km per week a year after purchase, due to direct substitution of e-bike trips and broader shifts in their weekly travel habits. Larger incentives were associated with greater auto travel reduction due to higher pre-purchase auto use. Income-conditioned incentives likely enabled low-income households to actualize latent preferences for less auto dependence.

The long-run reduction in GHG from travel for the Saanich e-bike incentive recipients averaged 16 kg CO_2e per week, increasing with rebate amount. The calculated marginal and non-marginal GHG abatement costs are $722 and $190 per tonne CO_2e, respectively, which is cost-competitive with other types of transportation subsidies, but unlikely to be cost effective on the international carbon market. GHG reduction is one but not the only benefit of increased e-bike adoption, which can also increase physical activity, reduce local air pollutant emissions, and reduce travel costs, among other benefits. Growing interest in e-bike incentive programs creates new opportunities to investigate these co-benefits, along with program effects in various scales and settings.