Written Testimony
OREGON LEGISLATIVE ASSEMBLY
House Committee on Climate, Energy, and Environment
Hearing for HB2571 - Relating to electric bicycles
February 8, 2023

My name is John MacArthur and I am the Sustainable Transportation Program Manager for the Transportation Research and Education Center (TREC) at Portland State University.

I am submitting testimony in response to the proposed electric bicycle (e-bike) purchase incentive program in HB2571. I and other Portland State University colleagues have been researching e-bikes for over 12 years. Through this research, we have seen that e-bikes have the potential to get more people biking and more people biking more often. The adoption of e-bikes has the possibility to reduce vehicle miles traveled (VMT) and carbon emissions, while promoting transportation equity and physical activity.

In 2021, the U.S. e-bike market grew by 50%, and on unit sales alone, e-bikes outsold electric vehicles nationwide. Over 400,000 e-bikes were sold nationwide in 2021. This figure likely represents roughly one third of all units sold in the U.S., because it doesn't include online independent bicycle dealers, third party online sales, or direct-to-consumer sales.

E-bikes can play an important role in people's everyday travel needs. One of our surveys of e-bike owners in North America found that 34% used their e-bike for commuting and 29% used it for errands. Nearly half of the e-bike commutes would have been made in a private car otherwise. Some of the top motivations for getting an e-bike were to overcome typical barriers to cycling such as carrying heavier loads, going up hills and traveling longer distances, revealing that e-bikes expand the potential for cycling. In a 2020 article, we estimated that in Portland for a 15% e-bike person-miles-traveled (PMT) mode share, the car trip mode share could be reduced from 84.7% to 74.8%. Total car PMT per day could be reduced from 28.9 million to 25.5 million miles, which would reduce CO_2 by 12% after accounting for e-bike emissions from electricity generation and induced e-bike trips. Figure 1 highlights some additional research findings related to e-bike usage.
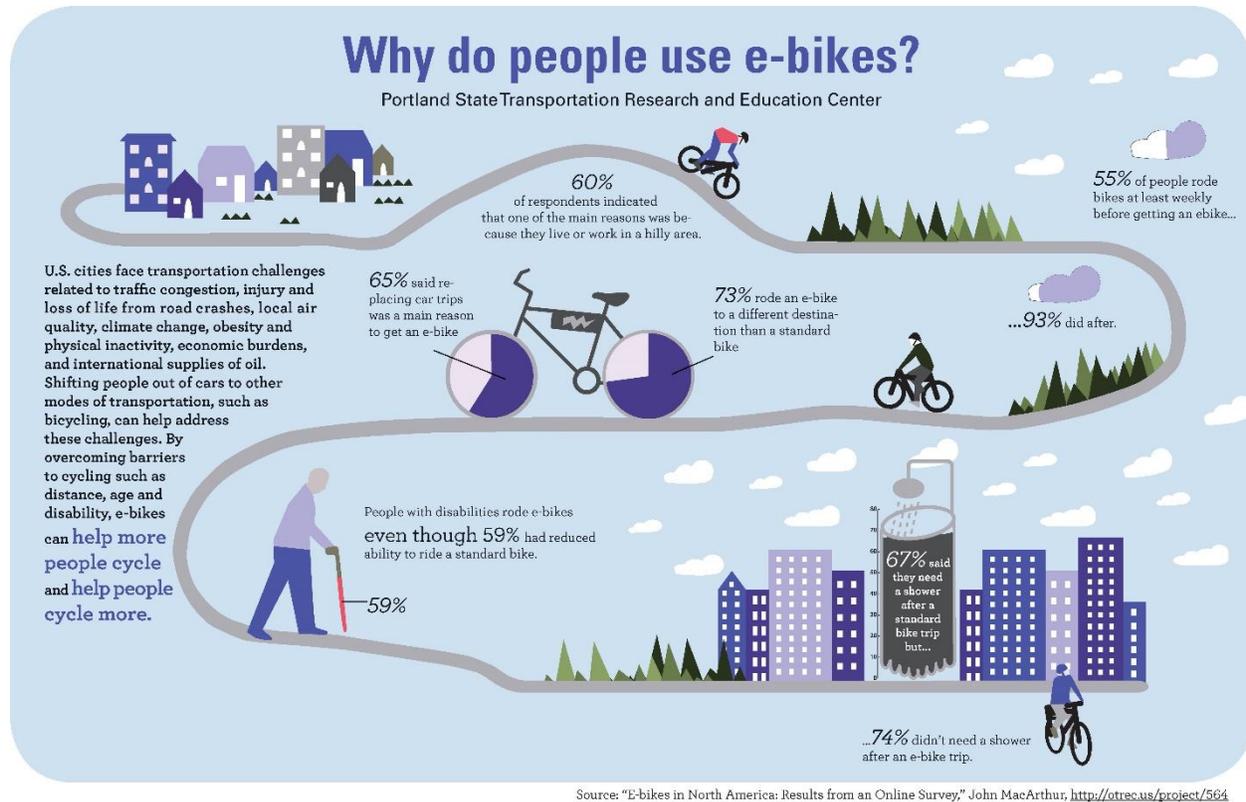
Figure 1: Infographic of research findings related to e-bike use

All these findings indicate that e-bikes have great potential to address pressing policy concerns, including the climate goals and improving accessibility and mobility needs for underserved populations. But policy and investment are needed to increase the use of these modes for everyday travel, if people are given suitable support: improved paths and lanes, suitable parking and charging facilities, lower urban traffic speeds, transportation demand management (TDM) incentives, plus purchase subsidies or rebates.

Most recently, I was an advisor for the ODOT report: Electric Micromobility in Oregon. The report highlights the potential of micromobility, including e-bikes, to provide sustainable and affordable mobility and provides best practices and strategies to encourage and allow more people to safely use these vehicles. The state and cities should increase safe, connected infrastructure that includes travel lanes, secure parking, charging facilities, and integration of micromobility services into the broader transportation system. In addition to focusing on the barriers of underserved communities and providing outreach to these communities, like test rides or lending libraries, rebates, financing, and other incentives can make e-bikes more accessible to more people and an attractive travel alternative for businesses.

E-bike incentives like rebates, vouchers, tax credits, and even simple lending libraries have proliferated in recent years and have emerged as tools for policymakers and legislators, who see e-bikes' potential to decrease emissions, provide efficient mobility, make streets safer, and increase physical activity all at once. In a new white paper "Using E-Bike Incentive Programs to Expand the Market – Trends and Best Practices," we looked at more than 75 current, former, and upcoming efforts to subsidize the use of e-bikes in the U.S. and Canada, and developed a framework for how those programs might have an even

bigger impact in the future. While e-bikes are much less expensive than a car, prices still range from $1,000 to $5,500, and higher for cargo-style e-bikes. Our research on e-bike incentives found that in some cases, an incentive for e-bikes could perform better than one for electric cars in terms of cost efficiency, equity goals, number of incentives provided, and the potential of total CO_2 emissions saved. We are currently tracking programs around the U.S. to build a knowledge-base of the effectiveness of these programs.

If Oregon passes an e-bike incentive program, they will join California, Colorado, Connecticut, Hawaii, Massachusetts, Rhode Island and Vermont, in providing this innovative policy measure to encourage active transportation.
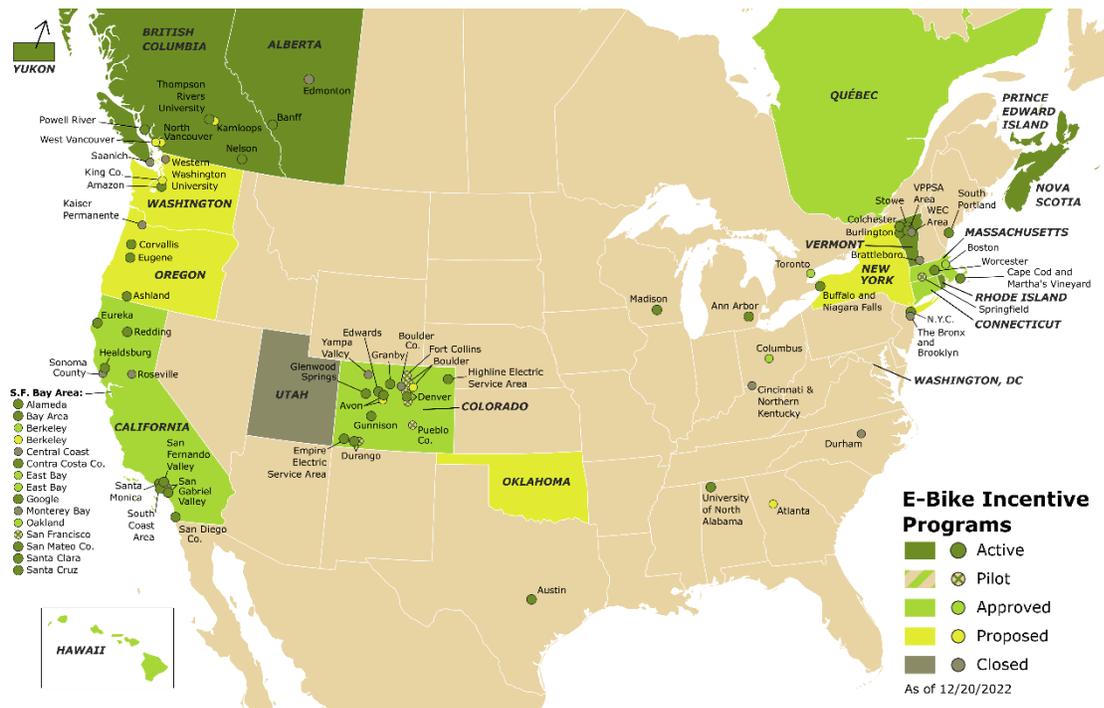
Figure 2: Existing and proposed e-bike incentive programs in the US.

Specific comments related to bill language
After reading over the bill, I wanted to provide some findings from our research relevant to the bill.
- **SUGGESTION 1: Tiered Income Benefits**
  Given the extreme popularity of the 2022 e-bike rebate program in Denver, Colorado, it is expected a $6M budget will be quickly subscribed, particularly without any income restrictions on who can receive it. Many other programs around the U.S. are structuring their programs around tiered benefits based on income thresholds and/or focused on people in certain historically-disadvantaged areas. A possible income verification technique is the participation in an existing statewide low-income program, which could be proven at the point-of-purchase. There are issues and costs around how these programs are administered. The states of Colorado and California are currently developing their programs, which will have income thresholds.
- **SUGGESTION 2: Enhanced Program Evaluation**

Program evaluation is an important component in understanding how incentive programs are helping to achieve VMT and GHG reduction goals. The bill does require collection of demographic information of the people receiving rebates (Section 1 (7)). Understanding what type of e-bike is purchased is also important in estimating the program benefits. Some outcome measures, such as mode shift, trip purpose, increased mobility, and reductions in VMT and GHGs, are dependent on both the type of e-bike and the demographics of the users. Portland State University's Transportation Research and Education Center (TREC) has conducted such evaluation and analyses of e-bike usage and benefits and is currently assisting other U.S. programs in their evaluations.

- **SUGGESTION 3: Methods to Prevent Misuse**
  The bill requires that the rebate recipient must maintain ownership of the e-bike for at least one year. Though we understand the concern that some individuals may sell their bike to benefit from the rebate, there is little evidence of this activity from other programs around the U.S. Programs in Cincinnati and Denver have a requirement of only one rebate per person, which can minimize individuals purchasing multiple bikes with an intention to sell the bikes. This ownership element in the bill will create a challenging requirement to verify and enforce by either DEQ or retailers. I am not aware of any similar limitations or monitoring requirements in other state or city programs. This concern could be studied under the evaluation of the proposed Oregon program to determine the extent of the problem and to determine if measures need to be put in place.

I hope this information helps the committee in the development of the bill. Please let me know if you need any more information related to other rebate programs in the U.S. or research related to the use of e-bikes. Most of our e-bike research is linked from this page: https://trec.pdx.edu/e-bike-research.

This testimony was prepared by John MacArthur of TREC at Portland State University.