

eBikes: *An Innovation in Transportation* on the brink of a boom in California

Tab 26



What's an eBike?

From 2006 to 2018



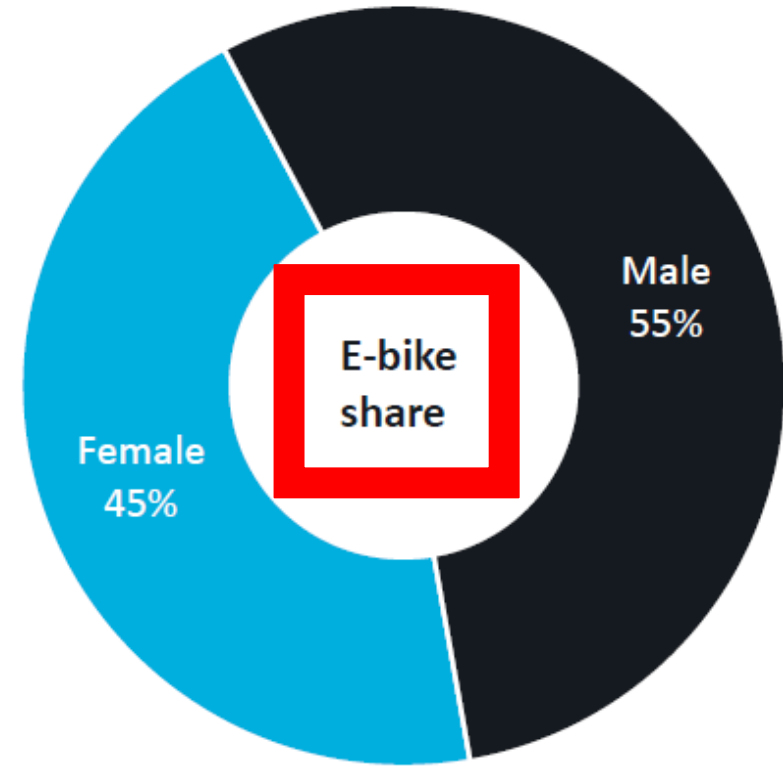
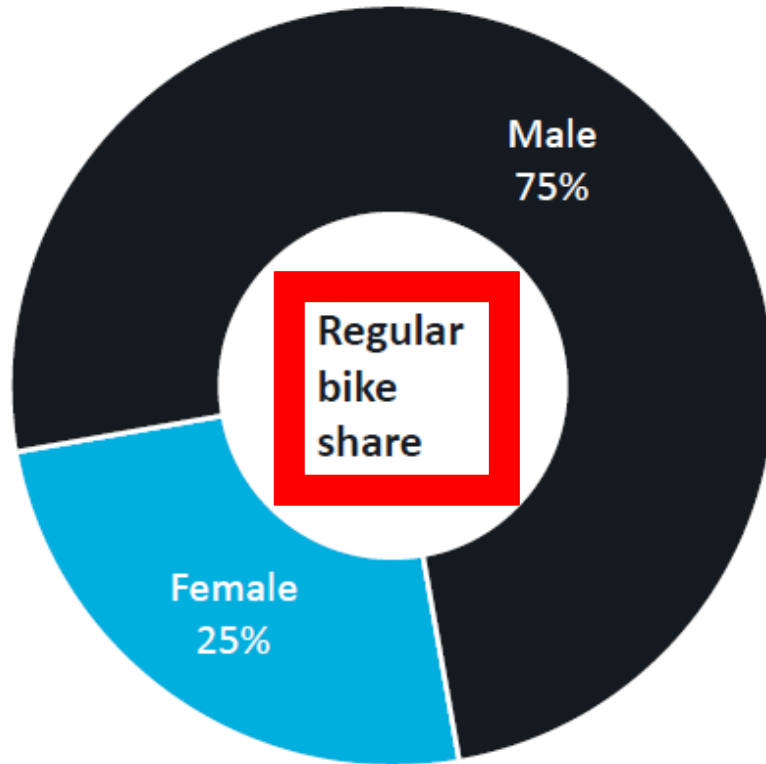
What's an eBike...today?



- **<750 Watt Drive Unit:** powered by a lithium-ion battery
- **Charged in 3-4 hrs:** uses standard 110V wall outlet for 20-100 miles per charge.
- **Usually pedal-assist:** drive unit engages only when pedaling, allows assisted speeds of up to 20 or 28 mph. (Can be throttle-controlled up to 20 mph.)

Pedal-assist eBikes *preserve* the **healthy human element of cycling** with physical and social benefits.

Who eBikes?



- Large shift from 75% male to 55%
- Slightly more men than women using the e-bikes
- E-bikes normalizing bike share between men and women

Why do they eBike?

In 2017, researchers John MacArthur (Portland State University) and Chris Cherry (University of Tennessee) conducted a survey of **1,796 respondents that own or regularly operate an eBike within North America.**

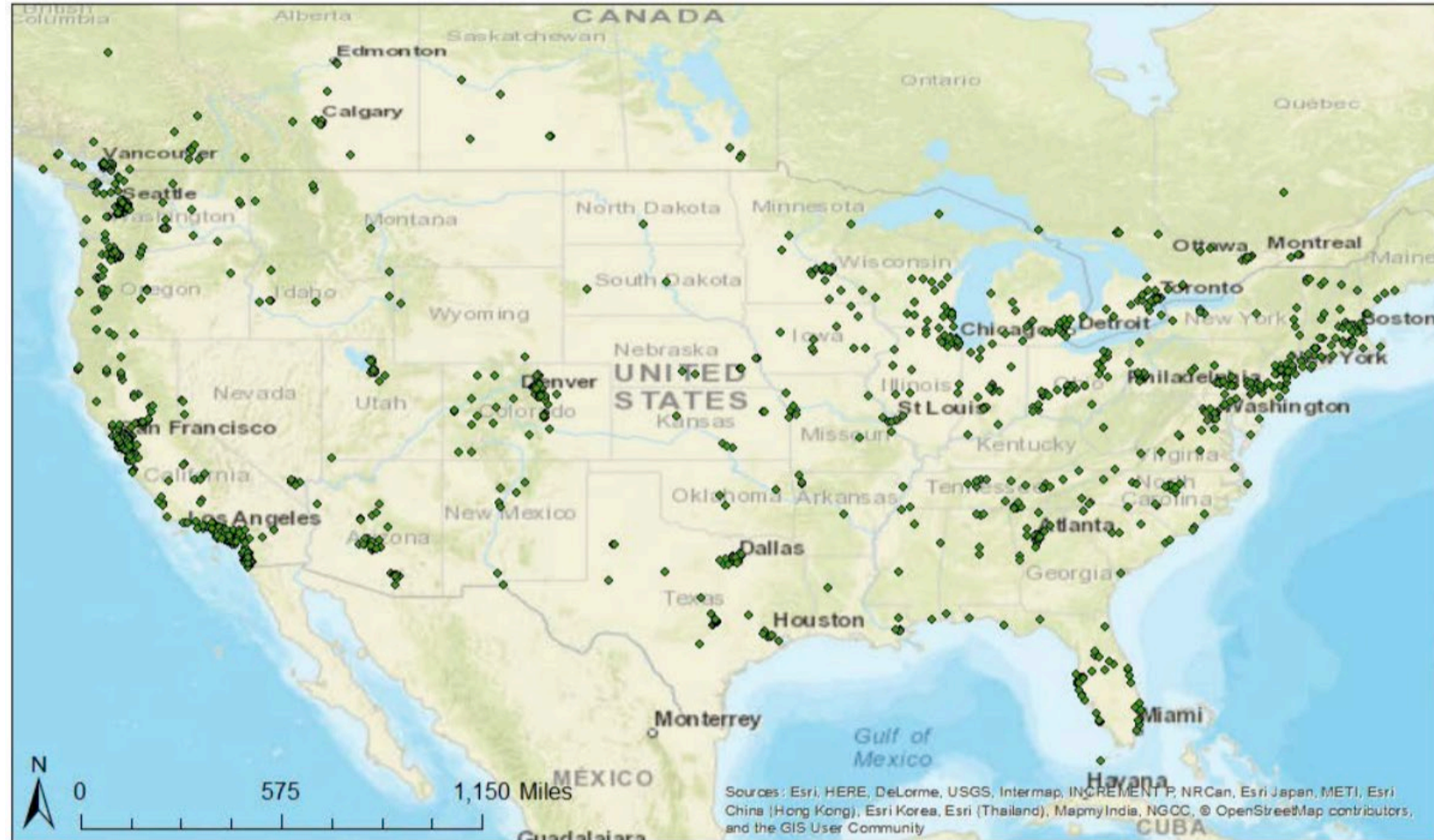
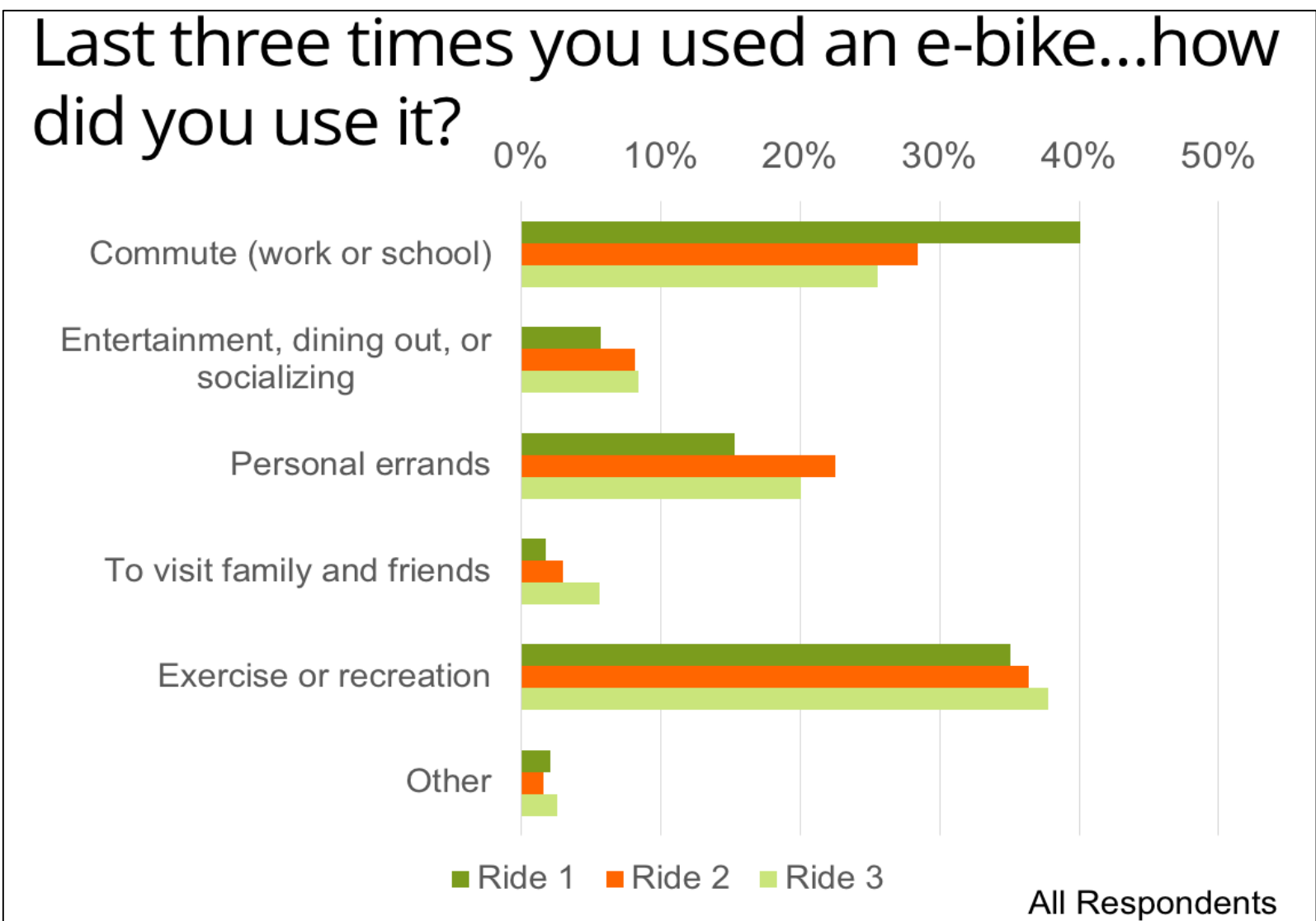


Figure 3.1: Map of Survey Respondents (excluding Alaska and Hawaii)

Note: locations on the map represent individual survey responses.

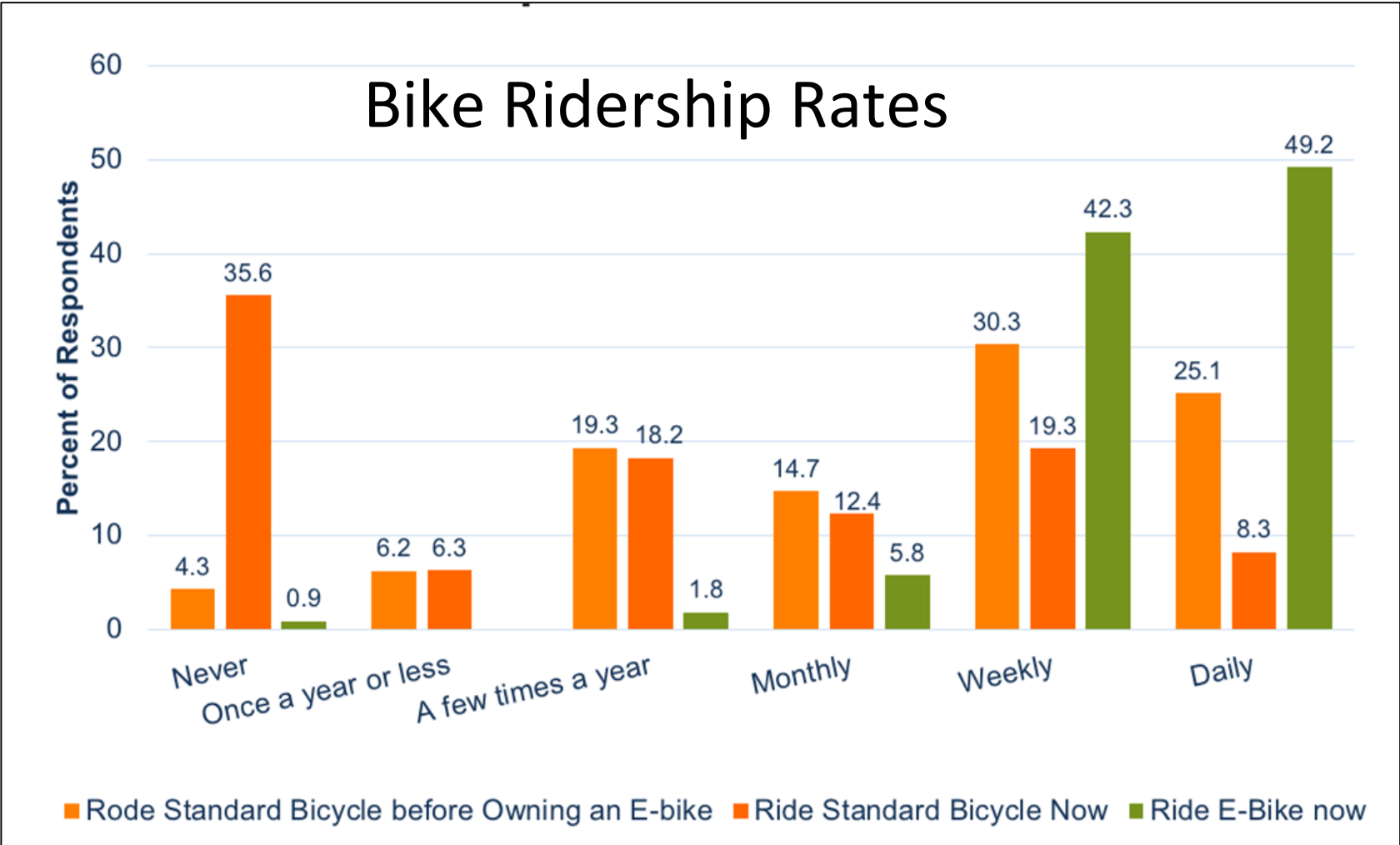
Why do they eBike?



Source: Cherry & MacArthur 2017

eBikes used as both tool (for commuting) and toy (exercise & recreation).

How *often* do they eBike?



Source: Cherry & MacArthur 2017

eBike owners ride more often after converting from bicycle.

Trips *Replaced* by E-Bikes

	Percentage of Trips by Mode That Would Have Been Used Instead of E-Bike			
	Walk, standard bike, transit	Automobile*	Would Not Have Taken this Trip	Other**
Commute (work or school)	40	46	1	36
Entertainment	8	9	4	6
Recreation or Exercise	29	9	89	39
Personal Errands	19	30	3	12
Visit Friends or Family	3	5	1	1
Other	1	1	2	6
Number of Trips	1063	1778	987	69
Percentage of Trips	27%	46%	25%	2%
Mileage per Trip	9	9	14	11
Percentage of VMT replaced	24%	40%	34%	2%

* includes drive alone, carpool, and taxi

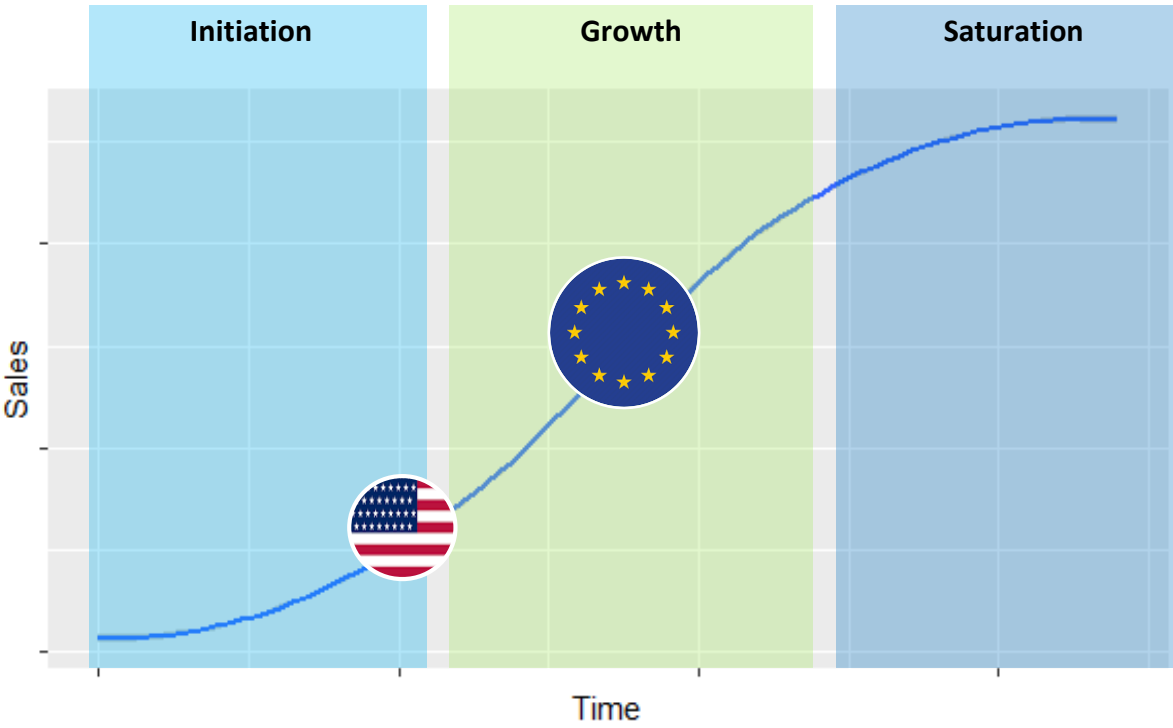
** Includes Other or Not Specified

Source: Cherry & MacArthur 2017

eBike trips replace car trips most often.

Where is the U.S. eBike Market?

On the brink of a boom...



EU

**eBike Market
(sales/yr)**

~2 million pcs

**Share of Bicycle
Market**

9%



US

0.2 million pcs

2%



Confederation of the European
Bicycle Industry

eBike sales are still far behind Europe, but catching up.

Where is the U.S. eBike Industry *Predominantly?*

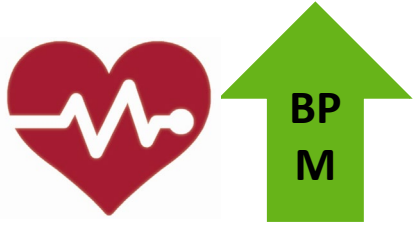
Bosch	Irvine
Specialized	Morgan Hill
Giant	Thousand Oaks
Uber / Jump	San Francisco
Lime	San Mateo
Shimano	Irvine
Yamaha	Cypress
Electra	Encinitas
Accell (Haibike, iZip)	Simi Valley
Pedego	Fountain Valley
Pure Cycles	Burbank
Tempo	Long Beach
Genze	Fremont
XtraCycle	Oakland
Benno Bikes	San Diego



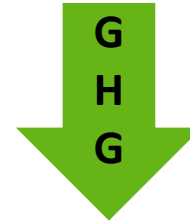
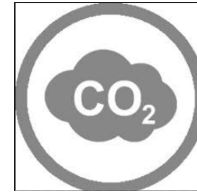
... in California!

California is on the leading edge for both eBike use, and eBike innovation.

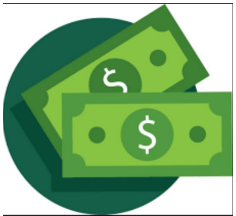
Why are eBikes *important* to California?



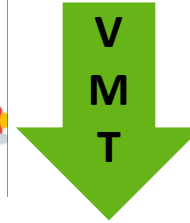
Increase in physical activity for more people more of the time



Reduction of GHG emissions by getting more people out of their cars



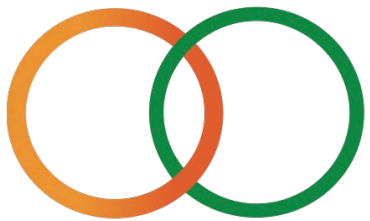
Economic impact of growing industry



Reduced barriers to cycling means more biking, less VMT, less congestion

eBikes: low-cost solution for fighting obesity, climate change, and congestion.

Thank You!



CALIFORNIA
BICYCLE
COALITION



peopleforbikes.org™



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE



Portland State
UNIVERSITY