

Date of Hearing: July 5, 2023

ASSEMBLY COMMITTEE ON TRANSPORTATION

Laura Friedman, Chair

SB 381 (Min) – As Amended June 19, 2023

**SENATE VOTE:** 38-0

**SUBJECT:** Electric bicycles: study

**SUMMARY:** Requires the Mineta Transportation Institute at San Jose State University, in consultation with relevant stakeholders, to conduct a study on electric bicycles and the safety of riders and pedestrians by January 1, 2026. **Specifically, this bill:**

- 1) Requires the Mineta Transportation Institute at San Jose State University (MTI), in consultation with relevant stakeholders, to conduct a study on electric bicycles to inform of efforts to improve the safety of all users of the transportation system and submit a report to the Legislature by January 1, 2026. The study shall examine, identify, and analyze information and data on:
  - a) Injuries, crashes, emergency room visits, and deaths related to bicycles and e-bikes;
  - b) Factors and circumstances that are correlated with the crashes of bicycles and e-bikes;
  - c) Best practices for policy to promote safe use of e-bikes;
  - d) Laws in other state vehicle codes pertaining to e-bikes;
  - e) The safety impacts from e-bike components and accessories such as headlights, speedometers, brakes, tires, bells, and reflectors;
  - f) The safety performance of e-bike batteries;
  - g) The manufacturing of e-bikes including the market, manufacture information, sales patterns, and the number of e-bikes on California roads, including usage by city and the reasons behind the usage;
  - h) Policies that other countries with high e-bike ridership use to promote the safe use of e-bikes including cyclist and driver training, street infrastructure policy, and insurance or licensing requirements; and,
  - i) Recommendations for state policy to support the expanded use of e-bikes that protects the safety of riders and other road users.

**EXISTING LAW:**

- 1) Defines an electric bicycle as a bicycle with fully operable pedals and an electric motor of less than 750 watts. Creates three classifications of electric bicycles (e-bikes) based on the ability for motors to achieve high speeds and replace pedaling. Class 1 and 2 electric bicycles have a maximum pedal assist speed of 20 miles per hour (mph), while Class 2 electric bicycles can have throttle assistance up to 20 mph. Class 3 electric bicycles have a maximum pedal assist of 28 mph. (Vehicle Code Section (VEH) 312.5)
- 2) Requires riders of Class 3 electric bicycles to be 16 years of age or older and requires riders to wear a helmet regardless of age. Requires Class 3 electric bicycles to be equipped with a speedometer. (VEH 34016 and 312.5)

- 3) Specifies that a person operating an electric bicycle is not subject to the provisions of the vehicle code related to financial responsibility, driver's licenses, registration, and license plate requirements, and that electric bicycles are not a motor vehicle. (VEH 34016)
- 4) Prohibits a person from changing the speed capability of the electric bicycle. (VEH 34016)
- 5) Defines "bicycle" to include electric bicycles. (VEH 231)
- 6) Permits a transit development board, or a public agency, including the Regents of the University of California and the Trustees of the California State University, to adopt rules or regulations to restrict the use of electric bicycles. (VEH 21113).
- 7) Authorizes local authorities, by ordinance, from regulating the parking and operation of bicycles on pedestrian or bicycle facilities, provided such regulations are not in conflict with the provisions of the vehicle code. (VEH 21206).
- 8) Requires an operator of a bicycle to obey all the provisions of traffic control devices that are applicable to the driver of a vehicle, except starting in 2024 may proceed through an intersection when the "walk" sign is on or if there is an official traffic control device signal for bicycles. (VEH 21456.2)
- 9) Provides that all of the rules of the road apply to bicycles, except those provisions which by their very nature cannot apply to a bicycle. (VC 21200).

**FISCAL EFFECT:** According to the Senate Appropriations Committee, MTI estimates costs in the range of \$125,000 to \$150,000 to conduct the e-bike research project and report study findings to the Legislature. (special funds, federal funds, see Staff Comments)

**COMMENTS:**

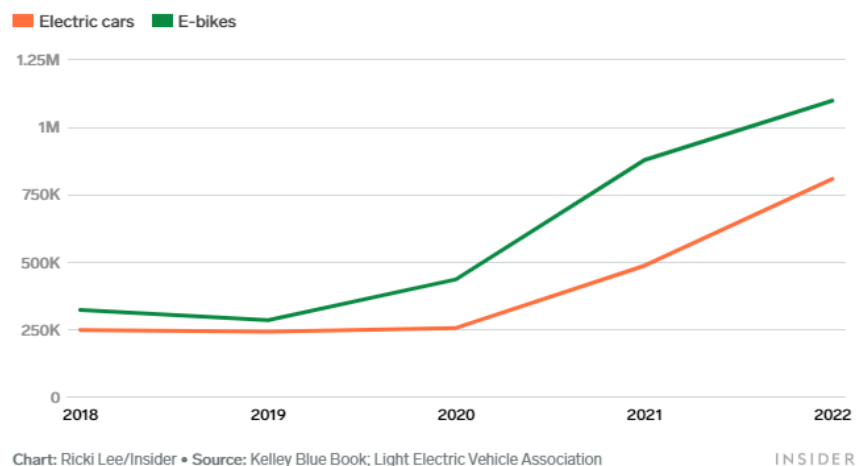
In California, the transportation sector is the largest contributor of greenhouse gas (GHG) emissions and is responsible for about 40% of the state's emissions with light duty passenger vehicles being the single largest contributor. The Legislature has set a number of goals to reduce greenhouse (GHG) emissions and address climate change. The Global Warming Solutions Act of 2006 [AB 32 (Nunez), Chapter 488, Statutes of 2006] and subsequent companion legislation SB 32 (Pavley), Chapter 249, Statutes of 2016, requires California to reduce statewide GHG emissions to 40% below the 1990 level by 2030.

Reducing the number of miles that people drive everyday can have a significant impact on reducing GHG emissions. Providing alternative modes of transportation such as public transportation using buses and light rail or other shared ride approaches could significantly reduce the number of vehicle miles traveled (VMT) in California. California has targeted a 15% reduction in VMT by 2050 as part of its larger strategy to reduce GHG emissions 80% from 1990 levels by 2050.

Electric bicycles have become an increasingly popular mode of travel around the world and are increasingly a popular option to reduce personal car trips. According to the US Bureau of Transportation statistics, more than half of all trips in the US are under three miles. According to the University of Oxford study, *The Climate Change Mitigation Effects of Daily Active Travel in Cities*, choosing to use a bike just once a day can slash an individual's transportation emissions by 67%.

Electric bicycles are outselling electric cars. According to Kelly Blue Book, 800,000 electric cars were purchased in the United States in 2022. Electric bicycle imports, meanwhile, were 1.1 million.

### Electric car vs. E-bike sales, 2018–2022



According to the author, “E-bikes are rising in popularity and play an important role in helping to reduce carbon emissions. However, the increase in the popularity and use of e-bikes also creates new challenges, which requires us to rethink the rules that keep all users of the transportation system safe. The MTI is a respected authority that can study e-bicycles, and offer concrete solutions to reduce accidents and emergency room visits. It is imperative that we get this right for e-bike enthusiasts of all ages, as well as for the local communities looking to the state for guidance.”

As electric bicycle popularity has gone up, so have injuries. The Los Angeles Times reported in January of this year that during the first 10 months of 2022, staffers at Providence Mission Hospital in Mission Viejo documented 198 electric bike injuries, up from just 34 in 2020. To put that in perspective, According to the Office of Traffic Safety (OTS) Crash Rankings, 12,798 people were seriously injured or killed in 2020 by cars in Orange County. 2,866 of those collisions were related to the speed cars were traveling.

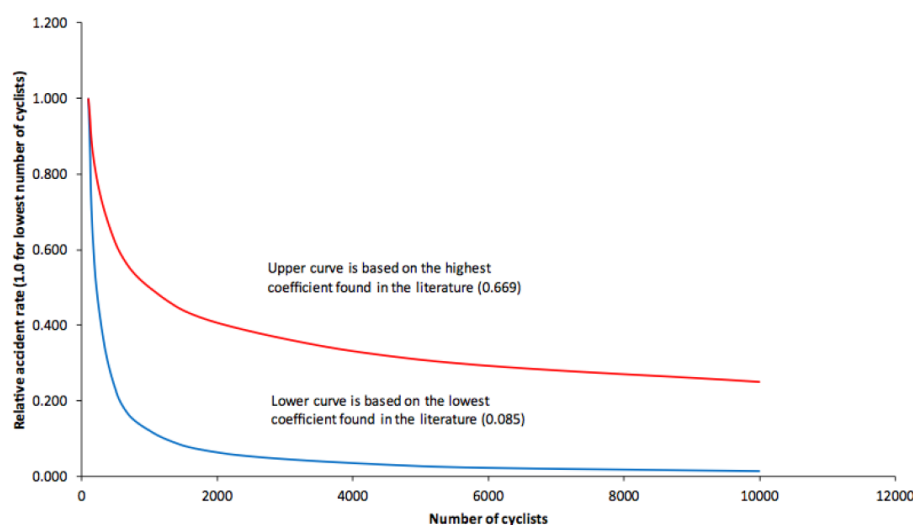
Orange County Transportation Authority (OCTA), writing in support of this bill, argues “the use of electric bicycles has been on the rise throughout Orange County. Oftentimes, this transportation mode provides great community benefits like reduction in greenhouse gas emissions, vehicle miles traveled, and overall dependency on a car for traveling. However, this relatively new transportation technology has proven to be dangerous due to the much higher speed they can achieve. The current laws surrounding electric bicycles can also be confusing, specifically on where and when someone can safely operate a specific class of electric bicycles. OCTA has been working with cities throughout the county on providing information to improve

the safe operation of electric bicycles, including attending community events, hosting city roundtable discussions, and distributing materials. SB 381 will provide more information on the impacts of operating electric bicycles and insight on other policies that can aid in safe operation.”

*Committee Comments:* Electric bicycles may provide a valuable alternative to replacing car trips and reducing GHG. Because electric bicycles are novel, the likely increase in injuries from these devices may decrease over time as riders become more experienced, In addition, when looking at these injuries, it is important to weigh them against the mode they are replacing which is primarily single-occupancy vehicles. Cars are responsible for 40% of the state’s greenhouse gas emissions, and are responsible for the death of over 40,000 Americans a year and cause countless more injuries.

Research has shown that one of the best ways to increase safety for cyclists is to increase the number of cyclists on the road. According to *Safety-in-numbers: A Systematic Review and Meta-Analysis of Evidence*, a systemic review of studies has found that the crash rate for cyclists goes down as the number of cyclists goes up. This has often been attributed to cars becoming more aware of cyclist on the roads and changing their behavior accordingly.

**Figure 1 – Range of the Safety in Numbers Effect for Cyclists**



Source: Elvik (2017)

*Previous legislation:*

AB1909 (Friedman), Chapter 343, Statutes of 2022 removed the authority for local governments to prohibit electric bicycles on bicycle paths or lanes.

AB 1946 (Boerner), Chapter 147, Statutes of 2022 required the California Highway Patrol to develop statewide safety and training programs based on evidence-based practices for uses of e-bikes.

AB 1096 (Chiu), Chapter 568, Statutes of 2015 established the definitions, classification, and requirements for the operation, sale, and manufacturing of e-bikes.

**REGISTERED SUPPORT / OPPOSITION:**

**Support**

California Association of Bicycling Organizations  
City of Carlsbad  
City of Encinitas  
City of Hermosa Beach  
City of Huntington Beach  
Orange County Transportation Authority  
Streets for All

**Opposition**

None on file

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