

E-Bike Legislative Toolkit

2024



peopleforbikes

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Introduction

Traditional bicycles and electric bicycles (e-bikes) offer an excellent way for Americans to improve their health, reduce their car trips, and enjoy the great outdoors. Sales of electric bicycles are steadily growing: In 2023, more than 1 million e-bikes were sold in the US, and continue to out-sell electric cars and electric trucks. Many e-bike riders are new to bicycling or are returning to bicycling after many years.

As more people ride, it is important for states and municipalities to understand the best methods for keeping people safe on our shared roads and trails. PeopleForBikes is proud to launch our **E-Bike Legislative Toolkit**, compiling best practices, offering model safety-related legislation, and clearly highlighting the intersection of bike infrastructure and education. This toolkit offers a foundation to make it easier to propose and implement safety-related policies and programs while considering each community's unique needs and governmental structures.

Advocates, members of the bike industry, and policymakers across all levels of government are encouraged to utilize this resource, reach out to PeopleForBikes with questions, and borrow what works best for your community in creating effective, equitable, and proactive solutions for rider safety concerns.

PeopleForBikes is here to help activate local advocates and bike businesses, work with lobbyists, and implement other tactics to turn these principles into successful legislation and programming. For questions and partnership opportunities, please contact the [PeopleForBikes team](#).

Overview

PeopleForBikes suggests that legislators consider the following **nine priorities** when addressing safety and regulatory concerns related to electric bicycles:

1. CREATE INFRASTRUCTURE

Prioritize funding to build safe and connected bike networks that improve safety.

[Infrastructure model legislation](#)

2. ADOPT THE THREE-CLASS SYSTEM

Clearly define electric bicycles as bicycles according to the model, three-class legislation established by PeopleForBikes and the federal definition of electric bicycles set by the Consumer Product Safety Commission.

[3 Class model legislation](#)

3. TAKE ACTION ON OUT-OF-CLASS PRODUCTS + ANTI-TAMPERING

Strictly regulate producers of products that claim to be electric bicycles but that exceed power and speed capabilities set by state and federal laws.

[OCEV policy position](#) and [model legislation](#)

4. ENABLE CLASS 1 ELECTRIC MOUNTAIN BIKE (eMTB) ACCESS

Clearly define where electric bicycles can and cannot be operated and consider speed limits on shared paths.

[Electric bicycles on state parks model legislation](#) and [policy statement](#)

5. CHAMPION BATTERY AND ELECTRICAL SYSTEM SAFETY + CERTIFICATIONS

Promote electrical system and lithium-ion battery safety by ensuring all electrical systems and batteries are certified to the applicable UL or EN safety standards.

[Battery and electrical drive system safety model legislation](#) and [policy statement](#)

6. FUND E-BIKE INCENTIVES

Create effective incentive programs by making sure the programs are equitable and that electric bicycles are clearly defined.

[Electric bicycle incentives model legislation](#)

7. PROMOTE EDUCATION AND RIDER SAFETY

[E-Bike Smart rider education programming](#)

8. OPPOSE REGISTRATION AND INSURANCE

Explain that requiring registration and insurance for electric bicycles does not meaningfully address roadway fatalities.

9. PROVIDE LANDLORD GUIDANCE ON E-MOBILITY PRODUCTS

Outline how landlords should allow the storage of e-bikes that fall within the three-class system and are certified to applicable safety standards within their premises.

1. Infrastructure

Creating Great Places to Ride

In addition to promoting the use of safe, low-speed electric bicycles to encourage more people to ride more often, PeopleForBikes champions the construction of safe, fun, and connected places to ride for people of all ages and abilities as the best way to improve biking in the United States. Through our [Great Bike Infrastructure Project](#), PeopleForBikes is transforming communities nationwide by advancing pro-bike policies that get more bike infrastructure built, supporting the construction of thousands of bike infrastructure projects, and investing in local advocacy coalitions to accelerate this work.

The policy pillars that make up The Great Bike Infrastructure Project's legislative arm are outlined in the program's [Legislative Guide](#). Designed to aid policymakers and advocates in expanding bike infrastructure for transportation and recreation, this comprehensive guide outlines four highly effective legislative solutions to accelerate the construction of safe and connected biking infrastructure:

- Funding Bike Infrastructure
- Mandating Complete Streets
- Advancing Bike Infrastructure Through Climate Legislation
- Creating Safer Places to Ride

Learn more about the Great Bike Infrastructure Project's policy priorities at the link above. as Explore our interactive National Bike Project Tracker, featuring bike projects you can support in your backyard, [here](#).

2. Adopt the Three Class System

PeopleForBikes believes updating state laws governing the use of electric bicycles is important for several important reasons. Our goal is to clearly define electric bicycles and provide sensible roles for their use.

PeopleForBikes developed the [three-class system](#) to better define electric bicycles as bicycles and provide e-bike riders with similar rights and duties as traditional bicycle riders. 43 states and the federal government have adopted the use of this system to define and regulate electric bicycles throughout the U.S. The definitions of the three-class system can be found below. Each legally categorized e-bike is required to have a label clearly defining its classification. Learn more at peopleforbikes.org/topics/electric-bikes.

Class 1	A bicycle equipped with a motor that provides assistance only when the rider is pedaling and ceases to provide assistance when the bicycle reaches the speed of 20 mph.
Class 2	a bicycle equipped with a motor that may be used exclusively to propel the bicycle and is not capable of providing assistance when the bicycle reaches the speed of 20 mph.
Class 3	A bicycle equipped with a motor that provides assistance only when the rider is pedaling and ceases to provide assistance when the bicycle reaches the speed of 28 mph. It is also equipped with a speedometer.

The objective of our three-class model legislation is to ensure:

- Outdated vehicle regulations are updated to reflect technological advances
- Low-speed electric bicycles are regulated similarly to traditional bicycles and are not subject to the registration, licensing, or insurance requirements that apply to motor vehicles
- The same rules of the road apply to both electric bicycles and human-powered bicycles when it comes to speed, proper passing, local traffic laws, speed limits, equipment, and other ordinances
- Consumers and retailers are not confused about their state's electric bicycle laws
- The public is encouraged to take advantage of the benefits that electric bicycles offer

PeopleForBikes does not support the alteration of the three classes of low-speed electric bicycles to include other types of devices. The three-class system and its accompanying model legislation were specifically designed to facilitate the regulation of low-speed electric bicycles that closely resemble traditional bicycles in their equipment, handling characteristics, size, and speed. As such, it is not appropriate to insert other types of devices into this bicycle regulatory structure. PeopleForBikes does not support the modification of the low-speed electric bicycle three-class system to regulate devices that: 1) are dissimilar to bikes in their functionality (for example, products that lack two or three wheels, a seat, or pedals), 2) exceed the motor-assisted speed limitations of the class system or federal law, or 3) exceed the power limitations of the three-class system or federal law.

3. Out-of-Class Products + Anti-Tampering

PeopleForBikes' work on electric bicycle policy is focused on the recognition of the three classes of low-speed electric bicycles as a type of bicycle. U.S. laws should permit reasonable access to bicycle infrastructure for the three classes of low-speed electric bicycles; ensure riders of electric bicycles can enjoy the same duties, protections, and rights as riders of traditional bicycles; and clarify that e-bike owners are not subject to vehicle laws that might apply to more powerful devices. This strategy — and public safety — are threatened by devices that may be sold as “e-bikes” but are actually motor vehicles, not electric bicycles

Definitions of Out-of-Class Electric Vehicles (OCEVs)

The following vehicles do not meet the definition of a low-speed electric bicycle and are not “electric bicycles” under CPSC regulations and most state laws:

- Any vehicle with a motor that exceeds 750W of power, that can travel at a speed in excess of 20 mph on motor power alone, or that lacks operable pedals.
- Any vehicle originally sold as a compliant electric bicycle but has since been tuned, modified, or tampered with so that it no longer meets the CPSC definition or the Class 1, 2, or 3 electric bicycle definitions.

In general, the rules and regulations that apply to electric bicycles in each state do not apply to out-of-class electric vehicles (OCEVs). OCEVs may be defined as mopeds, motorized bicycles, scooters, motorcycles, off-road vehicles, or other types of motor vehicles depending on vehicle laws in each state. OCEVs may be legitimately marketed, sold, and used if accurately described and compliant with all applicable requirements for that type of *motorized vehicle* as defined by such state laws, but should not be sold or operated as electric bicycles. More information on what is and is not an electric bicycle can be found in PeopleForBikes' [model legislation on OCEVs](#). Manufacturers, distributors, and retailers of OCEVs that are represented or marketed as electric bicycles should be aware that such products could be reported to the Consumer Product Safety Commission at www.saferproducts.gov. Utah, Minnesota and California now have state-level laws regulating the advertising and sale of OCEV devices.

Challenges Associated with OCEVs and Tampering

Consumer safety and protection are the top priorities of PeopleForBikes and the bicycle industry. The accurate labeling of electric bicycles is critical to maintaining a proper regulatory environment for these products and their use. Inaccurately labeled products or tampering with electric bicycles will create confusion for both users and regulators.

4. Class 1 Electric Mountain Bike (eMTB) Access

Many state resource agencies lack updated regulations governing electric bicycle use on natural surface trails, especially trails already open to traditional mountain bikes. This can create confusion for land managers, public safety officials, retailers, and riders.

Electric Bicycles on Trails

PeopleForBikes encourages state parks and natural resource agencies to align electric bicycle regulations with those of traditional bicycles and afford local land managers the authority to allow electric bicycles on trails and in areas where non-motorized bicycles are allowed. These changes would harmonize state land management policies with the products people are actively riding, proactively manage the desired experiences of electric bicycle riders, and support the safe operation, consistent regulation, and reasonable use of electric bicycles.

The three classes of electric bicycles were established to regulate issues around speed, wattage, and motor engagement, and allow for the regulation of different types of electric bicycles on trails. The three distinct classes allow land managers the flexibility to regulate various classes depending on local conditions.

According to research from the [Federal Highway Administration](#) and precedent set through [federal environmental assessments](#), Class 1 pedal-assist electric mountain bikes (eMTBs) are a similar mode of recreation to traditional mountain bikes in terms of their speed and trail impacts. Current research shows no significant difference between Class 1 eMTBs and analog mountain bikes on trails. By focusing on these recent studies regarding pedal-assist Class 1 eMTBs, PeopleForBikes hopes to allow sensible access for Class 1 eMTBs on trails where bicycles are currently allowed across the U.S. Learn more about this topic in [PeopleForBikes' model legislation on Class 1 electric bicycle access](#).

5. Lithium Ion Battery and Electrical Drive System Safety

PeopleForBikes believes that all lithium-ion traction batteries for e-mobility products should be tested and certified for compliance with an appropriate safety standard created by a national (UL, ASTM, ANSI) or international (IEC, ISO, EN) standards body. Testing and certification should be done by an independent, third-party laboratory accredited in accordance with standards set by the International Standards Organization (ISO).

What Test Standards Should Be Required?

There are several national and international standards that may be used by manufacturers and regulatory authorities to ensure the safety of electric bicycles sold across global markets. The regulation of batteries for electric bicycles should broadly incorporate all of these existing applicable standards as options for companies to demonstrate the safety of their products. In our [model legislation on lithium-ion battery and electrical drive system safety](#), PeopleForBikes recommends the following recognized test standards for electric bicycle batteries:

- ANSI/CAN/UL/ULC 2271
- ANSI/CAN/UL/ULC 2272
- ANSI/CAN/UL/ULC 2580
- IEC/EN/UL 62133-2
- BS/EN 50604-1:2016 + A1:2021

With respect to complete electric bicycles, the following test standards are effective in the production of safe electrical drive systems and batteries for e-bikes. PeopleForBikes recommends their inclusion in any regulatory requirement related to electric bicycles:

- ANSI/CAN/UL 2849 (e-bike drive system only standard)
- EN 15194 (complete e-bike electrical and mechanical standard)

Who Should Test and Certify Electrical Drive Systems of E-Bikes and Batteries?

Independent, third-party laboratories accredited by the International Standards Organization (ISO) should test electric bicycles and batteries to the above standards. Manufacturers, importers, and distributors should then certify that such testing was performed.

PeopleForBikes opposes suggestions that only Nationally Recognized Testing Laboratories (NRTLs) should be allowed to test and certify these products, or that e-bikes should be listed and labeled by NRTLs. These OSHA-specific regulations requiring use of NRTLs **do not apply** to consumer products, which are under the jurisdiction of the U.S. Consumer Product Safety Commission (CPSC). Some manufacturers of consumer products may voluntarily use NRTLs to test their products and opt to pay laboratories a license fee for use of their proprietary listing and labeling programs, but this is not legally required for consumer products including e-bikes.

6. E-Bike Incentives

Electric bicycle incentive programs are gaining popularity in cities and states nationwide. These innovative programs are a useful tool to reduce greenhouse emissions and can fundamentally change travel patterns in urban and suburban communities. These changes can make travel easier and more convenient while providing greater access to jobs, healthcare, and other essential services.

PeopleForBikes tracks, advocates for, consults on, and learns from e-bike incentive programs across the country. After compiling top lessons and best practices, PeopleForBikes launched our [Electric Bicycle Incentive Toolkit](#) in 2022. Since this time, dozens of states and municipalities have implemented their own e-bike incentives, with Denver's [electric bicycle rebate program](#) serving as a model for communities nationwide. The toolkit offers a foundation to make it easier to propose, design, and implement incentive programs while considering each communities' unique needs and governmental structures. PeopleForBikes also created [model e-bike incentive legislation](#) to aid communities interested in creating their own programs.

Advocates, members of the bike industry, and policymakers across all levels of government are encouraged to utilize this resource, reach out to PeopleForBikes with questions, and borrow what works best for your community in creating an effective, equitable, and popular e-bike incentive program.

PeopleForBikes suggests that program administrators consider the following five priorities when designing an incentive program:

- 1. Make the program voucher-based at point of sale**
- 2. Include in-store and online retailers**
- 3. Prioritize dedicated outreach and incentives for low-income residents**
- 4. Include all forms of electric bicycles within the three-class system**
- 5. Partner with local nonprofits and bike retailers as you develop your program**

7. Education + Rider Safety

E-Bike Smart: Free, Simple, and Actionable Rider Education

Studies show that many e-bike riders are new to bicycling, making convenient and easy-to-understand guidance on responsible ownership and safe riding of key importance. As more people discover the joys of riding electric bicycles, communities across the country are grappling with best practices for rider safety and consumer education.

PeopleForBikes worked with the League of American Bicyclists and Bicycle Colorado to create [E-Bike Smart](#), a program that offers clear, simple, and actionable steps anyone can take to increase their knowledge and confidence ahead of their next e-bike trip. E-Bike Smart is supported by more than 20 bike industry brands and dozens of state and local advocacy organizations. This free and easily accessible program can help riders of all ages and abilities better understand how to best enjoy their e-bike.

The program contains best practices for many aspects of e-bike ownership, including the different classes of electric bicycles, how to charge and store e-bike batteries, and proper helmet fitting techniques. Once riders understand the basics of e-bike ownership, E-Bike Smart shares tips for safely and responsibly riding an e-bike, including signaling, lane position, collision awareness, etiquette for the road and trail, and key parts of your bicycle to check before heading out on a ride.

E-Bike Age Guidance + Youth Rider Safety

Given that some devices being marketed to youth as “e-bikes” are designed to have their electronic speed governors easily deactivated, it is reasonable for states to consider whether additional regulation may be needed. Without active speed governors, these tampered devices can easily exceed 20 mph without pedaling and are no longer electric bicycles.

PeopleForBikes suggests that additional regulation of these devices may be more effective than imposing age restrictions on the use of true electric bicycles.

The U.S. Consumer Product Safety Commission’s [Age Determination Guidelines](#) recommend that children under the age of 13 should not operate powered vehicles that can travel more than 10 mph. Parents should also consider a manufacturer’s recommendations for the electric bicycle they are considering purchasing for their child.

Whether or not age requirements do change, there is still a critical need for safer streets for pedestrians, cyclists, and e-mobility users. Fatalities for all road users overwhelmingly occur in crashes involving larger, faster, and heavier motor vehicles. Ultimately, needless traffic violence will only be addressed through lower speed limits, changes to vehicle design, and safer transportation infrastructure for all.

8. Registration and Insurance

Concerns around rider and pedestrian safety are rising as reports of collisions increased in recent years. Some states are considering introducing legislation that would require registration and insurance for micromobility products, including electric bicycles. This approach is problematic for multiple reasons listed below. ***PeopleForBikes suggests that legislators focus instead on funding and implementing connected and protected bike infrastructure, which can keep pedestrians, cyclists, and automobile drivers safe simultaneously.***

Requiring Registration and Insurance Will Not Meaningfully Address Roadway Fatalities

Micromobility devices move more slowly and weigh far less than a car, meaning crashes are less severe. By focusing on low-speed e-bikes and e-scooters, registration and insurance arguments distract from the number one source of fatal and serious injury crashes in our country: large, heavy, and fast motor vehicles. Motor vehicles already require registration and insurance. These regulations could make traffic safety worse by pushing more people to continue driving rather than replacing short car trips with an e-bike. Further, there are no insurance products currently available to address these concerns.

Increasing Fees for Micromobility Devices Exacerbate Equitable Mobility Issues

Low-speed e-bikes and e-scooters are far less expensive than owning and operating a car, and individuals who rely on micromobility devices for primary transportation are more likely to be from low-income communities. Requiring insurance and registration will make those devices less affordable and may also lead to an increase in unwarranted police stops.

E-bikes are also a more accessible and increasingly popular mobility option for many Americans, all of whom deserve mobility independence, including seniors who benefit greatly from pedal assist, young people under the age of 16, families transporting children without a car (or second car), and people with disabilities that prevent them from driving or using a traditional bicycle.

9. Landlord Guidance on E-Mobility Products

Many e-bikes are made by reputable manufacturers and certified to the highest national and international safety standards. Recently, concerns about lithium-ion batteries have prompted some landlords to consider limiting the storage and charging of e-bikes on the properties they manage. We recognize that it can be difficult for building managers and landlords to determine the difference between high-quality, certified products and low-quality, uncertified, and potentially dangerous products. PeopleForBikes created these best practices to help landlords feel confident that e-bikes owned by their tenants are safe and that tenants are using responsible battery charging and storage practices.

Allow The Storage Of Electric Bicycles That Fall Within the Three-Class System and Are Certified to Applicable Safety Standards

Responsible e-bike electrical system and battery manufacturers certify their products to recognized and stringent safety standards. These safety standards all largely cover the same aspects of safe design of drive systems and batteries. California passed a [law](#) requiring landlords to allow these safe, tested electric bicycles and other mobility devices to be stored on leased premises. Please see our [Lithium-Ion Battery and Electrical System Safety](#) document for a description of acceptable safety standards for e-bike batteries and electrical systems.

Provide Materials to Educate Tenants on Safely Storing and Charging Their Electric Bicycle Battery

In addition to verifying safety certifications, landlords should encourage their tenants to practice safe charging and storage of their e-bike batteries to reduce the risk of fires. [Call2Recycle](#) and PeopleForBikes compiled a list of best practices for e-bike owners to ensure they are safely and responsibly handling their e-bike batteries:

- Follow the manufacturer's guide for charging, storing, and handling your e-bike battery and battery system.
- Only use the original equipment manufacturer's charger to charge your e-bike battery and battery system.
- Charge your e-bike battery plugged directly into a wall outlet. Never use charging strips or extension cords.
- Never charge an e-bike battery unattended or overnight. Never leave it plugged in when it is not charging.
- Avoid charging or storing your e-bike battery in extreme temperatures.
- Do not place the charger or the battery near flammable materials.
- Handle your e-bike battery and battery system with care — do not drop or submerge it in water.
- Do not modify or attempt to repair your e-bike battery or battery system.

To learn more about responsible e-bike battery storage and charging, as well as best practices for riding e-bikes, visit ebikesmart.org.

Additional Resources

PeopleForBikes Resources

- [PeopleForBikes's Policy Statement on E-Bike and E-Mobility Battery Testing](#)
- [PeopleForBikes' Policy Statement on Out-of-Class Electric Vehicles](#)
- [PeopleForBikes' Policy Statement on Class 1 eMTB Access](#)
- [E-Bike Battery Safety FAQ](#)
- [UL Certification Terminology Overview](#)
- [E-Bike Smart: Rider Education and Safety Program](#)

Studies Referenced

- **eMTB:** USDA Forest Service. "[East Zone Connectivity and Restoration Project Decision Notice & FONSI.](#)" (2021).
- **eMTB:** US Department of Transportation Federal Highway Administration. "E-Bikes in Public Lands: A Human Factors Field Study." (August 2023).
- **eMTB:** Cherry, C. & MacArthur, J., E-bike safety, A review of Empirical European and North American Studies (Oct. 15, 2019)
- **eMTB:** Langford, B. et al, "Risky riding: Naturalistic methods comparing safety behavior from conventional bicycle riders and electric bike riders, Accident Analysis & Prevention." (Sept. 2015)

Model Legislative Language

To further assist policymakers in proposing rider safety solutions for their communities, PeopleForBikes crafted model legislation that can be adapted to fit any community's needs. These legislative examples were created in response to PeopleForBikes' engagement in rider safety legislation in states across the country. Outlined below are the key components essential to successful e-bike legislation.

1. [Three-Class Electric Bicycle Model Legislation](#)
2. [Out-of-Class Electric Vehicle Model Legislation](#)
3. [E-Bike Incentive Model Legislation](#)
4. [Lithium-Ion Battery Safety Model Legislation](#)
5. [Electric Bicycle Anti-Tampering Model Legislation](#)
6. [Electric Bicycles on State Park Lands Model Legislation](#)
7. [California's Personal Micromobility Storage Legislation](#)



OUR MISSION

**To get more people riding bikes more often.
To make biking better for everyone.**

Since 1999, PeopleForBikes has created a prominent place for bikes in transportation, mobility, and recreation decisions at all levels of government. We ensure bikes are prioritized and positioned as a real solution to improve Americans' health, connect communities, boost local and state economies, strengthen our nation, and protect the planet.

We accomplish this by being proactive and planning for the future, adopting a broad and inclusive vision for government affairs, and making it convenient for leaders at all levels of government to take advantage of opportunities and legislation that prioritize bikes.

Together, we work with federal, state, and local officials to make biking better for everyone.

PeopleForBikes
P.O. Box 2359
Boulder, CO 80306
peopleforbikes.org