# POLICY STATEMENT

ASSOCIATION OF PEDESTRIAN & BICYCLE PROFESSIONALS

*Expertise for Active Transportation*

## POLICY STATEMENT: ELECTRIC BICYCLES

**Overview of APBP Policy Statements**

The Association of Pedestrian and Bicycle Professionals (APBP) supports the community of professionals working to create more walkable, bikeable places through facilitating the exchange of professional and technical knowledge and by promoting fundamental positions that are broadly acknowledged and acted upon by APBP members.

APBP Policy Principles:

1. APBP represents the professional expertise and practical experience of its members in transportation policy discussions to advance active, healthy, and sustainable communities.
2. APBP recognizes the impacts of systemic and institutionalized racism, and we recognize our responsibility to identify and address inequities.
3. APBP endorses active transportation as an integral part of transportation systems through all stages of planning, design, funding, and implementation.
4. APBP supports connected, convenient, accessible, and safe streets and pathways in every community and planning with the input of every member of a community.
5. APBP advances a safe system approach that leverages active transportation to create equitable access for everyone in every place.

APBP believes that electric bicycles provide an innovative transportation option that should be considered as part of transportation strategies at all levels of government and advocacy groups. E-bikes have the potential to unlock significant latent demand for cycling and should be considered an integral part of a more sustainable transportation strategy in the U.S. and Canada. Changing technology, new business models, and rapid deployment are creating both opportunities and challenges for the use and regulation of these devices. APBP encourages government, advocacy, private sector transportation and planning professionals, the bicycle industry, elected officials, and policy makers to consider the following in conjunction with the deployment of electric bicycle technologies:

**What is an "electric bicycle" (often referred to as "e-bike")?**

The terms "electric bicycle," "electronic bicycle," "pedal assist," or "e-bike" neither follow a standardized technical nor legal definition in North America at present. Generally speaking, an e-bike is a bicycle that features an electric motor that may either assist a pedaling rider or propel the bicycle independent of pedaling. The absence of a standardized definition in both the United States and Canada has meant there are relatively few uniform rules concerning the

manufacture, sale and operation of e-bikes in North America.[1] Instead, most industry observers agree that a disparate and sometimes conflicting patchwork of regulations exists across states and provinces, creating confusion for government, advocates, consumers, and retailers.

**Current Federal Regulation of E-bikes in the U.S.**

Federal law defines "low-speed electric bicycle" and regulates them as bicycles, but federal regulation applies only to the manufacture and first sale - not the operation - of e-bikes that meet the definition. Congress, in 15 U.S.C. sec. 2085[2], defined a "low-speed electric bicycle" according to the following parameters:

- two- or three-wheeled vehicle
- fully operable pedals
- electric motor of less than 750 watts (1 h.p.)
- maximum speed on a paved level surface, when powered solely by such a motor while ridden by an operator who weighs 170 pounds, is less than 20 mph (≈32 kmh)

Note that while the e-bike must have operable pedals, the statute is silent on whether the bike may be pedal-assist only, throttle-controlled, or controlled by other means (such as a smartphone app). The federal definition explicitly supersedes any more stringent definition at the state level. The U.S. Consumer Product Safety Commission, in 16 CFR sec. 1512.2[3], further defined a "bicycle" as either (1) a two-wheeled vehicle having a rear drive wheel that is solely human-powered, or (2) meeting the definition of a low-speed electric bicycle.

The U.S. regulation permits e-bikes that are substantially faster and more powerful than those allowed in Europe, which are limited to 250 watts and 25 kph (about 15.5 mph) for pedal-assist e-bikes in order to be regulated as bicycles.

In 2019, the Secretary of the Interior issued Secretary's Order 3376,[4] which adopted the People for Bikes regulatory framework for e-bikes (see State Regulation section below) with immediate effect on federal properties managed by the National Park Service, the U.S. Fish and Wildlife Service, the Bureau of Land Management, and the Bureau of Reclamation. As a result, e-bikes have been allowed on some federal lands where bicycling is generally allowed, subject to the discretion of the land manager. All of these agencies have issued regulations governing the use of e-bikes.

National Park Service final regulations on e-bikes, effective December 2, 2020:

- https://www.federalregister.gov/documents/2020/11/02/2020-22129/general-provisions-electric-bicycles

U.S. Fish and Wildlife Service final regulations on e-bikes, effective December 2, 2020:

- https://www.federalregister.gov/documents/2020/11/02/2020-22107/national-wildlife-refuge-system-use-of-electric-bicycles

Bureau of Land Management final regulations on e-bikes, effective December 2, 2020:

- https://www.federalregister.gov/documents/2020/11/02/2020-22239/increasing-recreational-opportunities-through-the-use-of-electric-bikes

Bureau of Reclamation final regulations on e-bikes, effective November 23, 2020:

- https://www.federalregister.gov/documents/2020/10/22/2020-22108/off-road-vehicle-use

[1] https://en.wikipedia.org/wiki/Electric_bicycle

[2] https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title15-section2085&num=0&edition=prelim

[3] https://www.ecfr.gov/current/title-16/chapter-II/subchapter-C/part-1512

[4]https://www.doi.gov/sites/doi.gov/files/elips/documents/so_3376_-_increasing_recreational_opportunities_through_the_use_of_electric_bikes_-508_0.pdf

As of September 2021, there is pending litigation over the National Park Service e-bike regulations, which has resulted in park supervisors being ordered to reassess prior decisions to permit the operation of e-bikes in parks.[5]

**Current State Regulation of E-bikes in the U.S.**

The bicycle industry has lobbied state and local governments for uniform requirements in an attempt to standardize regulations and assist manufacturers, suppliers and retailers with the sale of e-bikes. This does not necessarily result in uniform cycling laws. As of October 2022, 40 U.S. states have adopted e-bike laws based on the People for Bike model legislation.[6]

- Class 1 Electric Bicycle- is a bicycle equipped with a motor that provides assistance only when the rider is pedaling, and that ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour.
- Class 2 Electric Bicycle- is a bicycle equipped with a throttle that may be used exclusively to propel the bicycle, and that is not capable of providing assistance when the bicycle reaches the speed of 20 miles per hour.
- Class 3 Electric Bicycle- is a bicycle equipped with a motor that provides assistance only when the rider is pedaling, and that ceases to provide assistance when the bicycle reaches the speed of 28 miles per hour.

States have the authority to regulate the operation of e-bikes within the U.S. They may adopt the federal definition for this purpose, but the absence of a binding definition at a federal level means that states may choose to broaden the definition of e-bikes as they see fit. This means that states may pass legislation to allow for e-bikes that have more powerful motors and can go faster than allowed under the federal definition. A state may change the name in state law to "motorized bicycle" or by creating a new classification of e-bike. For example, there is now a Class 4 e-bike that is defined as having a motor over 750W and a top speed over 28 mph. These speeds are dangerous for multi-use trail use and should not be treated with the same rules and regulations as Class 1-3 e-bikes. It is suggested that Class 4 e-bikes be treated as motorcycles or mopeds, depending on how the state defines the speed and wattage of these two forms of transportation. Another discrepancy that can cause confusion among advocacy groups and policy makers is the definition of a Class 3 e-bike, supported by People for Bikes, can provide assistance up to 28 mph. This is in contradiction to 15 USC 2085: Low-speed electric bicycles.

State regulation of e-bike use varies widely and remains inconsistent among states. Some states neither define nor regulate the operation of e-bikes, and other states regulate mopeds or motorized bicycles, which may be gas-powered and can reach the same speeds as that of other types of motorized vehicles. This can be confusing as it is not always clear whether motorized and e-bikes follow the same laws that apply to traditional bicycles. Perhaps most significantly, state and local laws and regulations vary as to whether e-bikes may operate on shared use paths or sidewalks. Several state and local park agencies currently prohibit e-bike operation on shared use paths and natural surface trails, but some are considering how to accommodate e-bike use.

This patchwork of regulation results in inconsistent outcomes across the U.S. in terms of safety, knowledge of applicable rules, and consumer uptake.

**Current Federal Regulation of E-bikes in Canada**

Until recently, e-bikes had been defined federally in the *Motor Vehicle Safety Regulations*. In February 2021, Transport Canada repealed their definition and downloaded the responsibility to the provinces and territories.

The former federal definition, outlined below, required e-bikes to be equipped with pedals, travel on no more than

[5]https://www.nationalparkstraveler.org/2021/07/updated-national-park-service-gives-park-superintendents-authority-ban-e-bikes
[6] https://www.peopleforbikes.org/topics/electric-bikes

three wheels, have a maximum power output of 500 watts, a maximum speed of 32km/h and be capable of being propelled by muscular power. Many provinces and territories used this federal definition in their own traffic acts and applied additional requirements around age, weight of the bike, helmet use, and where they could travel. Municipalities could legislate additional rules of the road through local by-laws. The federal definition was criticized for being broad enough to include both bicycles with an electric assist (e-bikes) and low speed motorcycles with pedals attached (often called mopeds). Ongoing advocacy to have the federal definition updated included an official 2018 petition, which the government responded to by highlighting their proposal to repeal the definition and download responsibility.

In the now absence of a federal definition, the previous federal definition continues to apply until provinces and territories develop their own to replace it. Municipalities continue to be able to pass additional local rules of the road for e-bikes.

To date, few provinces and territories have updated their e-bike definitions to reflect federal changes and there continues to be a patchwork of rules and regulations for e-bikes across the country. This patchwork is creating uncertainty about e-bikes amongst policy makers, elected officials, and industry, as well as e-bike riders and potential riders, on issues such as importing e-bikes, e-bike speed, and where e-bikes are permitted to ride. As individual provinces and territories develop their own definitions and regulations, it is likely to exacerbate the issue. Unlike in the United States with the People for Bikes model legislation, there is no common approach being proposed for provinces and territories to adopt.

For a more detailed report about the state of e-bikes in Canada, see https://jamiestuckless.ca/e-bikes/.

The legislative and regulatory patchwork in Canada includes:

- Proposed definitions in Ontario that categorize e-bikes into three "types": bicycle-style e-bikes (type 1), motor scooter-style e-bikes (type 2) and motorcycle-style e-bikes (type 3). It is important to note that while these definitions received royal assent, they have not yet been proclaimed and are not yet in effect. Ontario also has a five-year cargo e-bike pilot underway for larger, heavier e-cargo bikes.
- The adoption of the US-based 3 class system within British Columbia Provincial Parks, but not across British Columbia as a whole.
- The adoption of the US-based 3 class system in the municipality of Whitehorse, but not across the Yukon Territory.
- Local by-laws that prohibit the use of e-bikes on trails when the trails are a broader cross-jurisdictional trail network that does permit e-bikes.

**Safety Benefits and Challenges**

Adding a new user group into the existing built environment opens up the possibility of new safety benefits and challenges. This is clear from existing interactions among bicyclists, pedestrians, and motorists. E-bikes have the potential to increase the number of people bicycling, which can increase safety through the principle of "safety in numbers;" however, additional bicyclists may also increase the frequency of conflicts. E-bikes may bring new challenges into the mix, as they can accelerate more quickly and achieve higher speeds than a rider may be able to achieve unassisted.

Areas of concern include:

- conflict with pedestrians on sidewalks and shared use paths
- conflict with non-motorized bicyclists in bicycle facilities (particularly as it relates to speed differential)
- higher-speed conflicts with motorists at intersections and driveways (particularly on side paths and separated

bike lanes)
- fire hazard of the battery and battery charger
- bike parking facilities with charging stations

While the potential for conflict between motorists and e-bike riders is not fundamentally different from non-motorized bicyclists, it is possible that e-bike riders may more easily mix with traffic flow due to their higher speed and faster acceleration, though those same factors may increase the danger at conflict points like intersections.

Municipalities should consider e-bike usage when designing bicycle and pedestrian infrastructure. Anticipated growth in e-bike use may indicate assigning a higher priority to facilities that better accommodate bicyclists of varying speeds and degrees of skill, as well as facilities that better separate user groups.

With the increased popularity of e-bikes, there has been a spate of fires across the country due to the batteries starting fires. The U.S. Safety Commission stated at least 19 people in the U.S. died of fires that started from micromobility vehicle batteries overheating.[7]

Research into e-bike usage and safety is at a relatively early stage, particularly in North America. See research links at the end of this document.
- https://peopleforbikes.org/our-work/e-bikes/research-and-stats/
- https://www.levresearch.com/lev-publications.html
- https://journals.sagepub.com/doi/10.3141/2468-14
- https://www.sciencedirect.com/science/article/pii/S0966692316301934

**E-bikes on Natural Surface Trails**

One policy area that has not received sufficient attention in many U.S. states is the use of e-bikes on natural surface trails (such as mountain bike or hiking trails). While much of the attention on e-bike regulation has focused on transportation, roads, and paved paths, changes to the regulatory framework may, intentionally or unintentionally, affect the use of natural surface trails. Any discussion of changing statutes or regulations to accommodate e-bikes should include consideration of how such changes might affect the use of natural surface trails. Parks departments, mountain bike advocates, and other trails advocates should be part of those discussions. In particular, advocacy for mountain bike trail access in the United States has long depended on a clear distinction between motorized and non-motorized use, a distinction which is blurred by the introduction of e-bikes. Mountain bike advocates are not in agreement about how to address e-bikes on natural surface trails; consequently, pedestrian and bicycle professionals must exercise caution when engaging around this issue.

To better understand the differing approaches to this issue, see the following resources:
- https://www.imba.com/education/emtb
- http://www.nemba.org/news/where-can-electric-mountain-bikes-be-ridden-new-england
- http://www.nemba.org/news/dealers-guidance-regarding-issue-electric-mountain-bikes

In Canada, Parks Canada allows pedal assist e-bikes on designated bike trails at select national parks. See “Pedal assist e-bikes” under Visitor Guidelines:
- https://www.pc.gc.ca/en/voyage-travel/regles-rules

**Public Health Implications**

Public health agencies and public health advocates have been important partners in efforts to improve bicycle infrastructure and increase participation in bicycling in the United States. The public health focus on bicycling is as a

[7] https://abcnews.go.com/Technology/bike-batteries-raise-safety-concerns-amid-rise-fires/story?id=95617246; https://www.bicycling.com/news/a39826697/e-bike-batteries-fire-safety-tips/

means of increasing physical activity to reduce the incidence of chronic diseases. While there is some concern that widespread use of e-bikes may reduce physical activity relative to human-powered bicycling, research appears to show that riding e-bikes is significantly beneficial to adult health:

- https://ijbnpa.biomedcentral.com/articles/10.1186/s12966-018-0751-8
- https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0211779
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5644161/
- https://www.ncbi.nlm.nih.gov/pubmed/28446180
- https://www.ncbi.nlm.nih.gov/pubmed/29095201
- https://www.ncbi.nlm.nih.gov/pubmed/29649069

Additional research is needed regarding e-bikes and youth, including potential age restrictions for safety and data regarding the safety and health effects of e-bikes on youth.

**Enforceability**

To the extent e-bikes are to be regulated, there is not yet agreement on whether they should be classified by power, speed, or other factors. Nor is there consensus on what power capacity or speed is considered appropriate and safe. U.S. federal law includes both power (750 watts) and speed (20 mph) limits for e-bikes to be considered bicycles (500 watts and 32 kph, respectively, in Canada), but these limits are significantly higher than currently allowed in Europe.

If e-bikes are subject to different rules than non-motorized bikes, it is not clear how to effectively identify an e-bike. The People for Bikes model legislation calls for stickers with 9-point type. This form of identification is clearly not visible without close examination.

It is increasingly difficult to distinguish an e-bike from a non-motorized bicycle, or different types of e-bikes from each other. While many e-bikes are visually distinguishable from non-motorized bicycles to a person with a modest amount of knowledge about bicycles, e-bikes already exist that are virtually indistinguishable from non-motorized bicycles without close examination by a person with current and specific knowledge about e-bike technology. It is also difficult to determine the type of e-bike by visual inspection of the bike itself.

**Outreach and Education**

At present, it is not clear who is responsible for informing e-bike users of operating laws and legal places to ride. The outreach and education responsibilities of retailers, manufacturers, government, law enforcement, and advocates should be considered as part of any proposed regulatory scheme.

Any educational program designed to reach e-bike riders should recognize that there will be a spectrum of educational needs, ranging from experienced bicyclists transitioning to e-bikes who only need information on the legal differences, to inexperienced e-bike riders who may need basic information on bicycle safety, bicycle infrastructure, rules of the road, and interactions with other road users.

Existing agencies and organizations focused on motorist education and safety should add information about safely interacting with e-bikes, especially raising awareness that e-bikes may go faster and accelerate more quickly than human-powered bicycles.

**Equity**

Bicycle planners and advocates are grappling with a growing range of equity issues, and the widespread deployment of e-bikes will bring both benefits and challenges from an equity perspective. Some examples include:

- New User Groups: E-bikes may offer an option for cycling to people who are reluctant or unable to use non-motorized bikes. For example, some people who do not cycle because of physical demands may have the ability to handle an e-bike. Others with a disability may be comfortable and safe on an e-bike, depending on its configuration, including ‘buddy’ bikes in which an able-bodied person pedals and the person with a disability ride in front.

- Cost: The relatively high cost of e-bikes may discourage e-bike ownership among lower-income riders, but bikeshare with e-bikes may help close this gap.
- Discriminatory Impacts: Regulation of e-bikes may affect certain groups of users disproportionately, leading to potentially discriminatory impacts, such as the ban on throttle-controlled e-bikes in New York City disproportionately affecting delivery workers who are predominantly people of color.
- Pretextual Traffic Stops: Police cannot necessarily tell the type of e-bike (or if it even is an e-bike) without stopping the bicyclist, so any regulation of e-bikes distinct from non-motorized bicycles or by class of e-bike potentially creates a pretext for police to stop anyone on a bicycle. Such pretextual stops (in general, not only bicycle-specific) have historically disproportionately affected people of color.

Planning for deployment or regulation of e-bikes should include careful consideration of equity implications.

**It is APBP's position that:**

1. E-bikes have the potential to unlock significant latent demand for cycling and should be considered an integral part of a more sustainable transportation strategy in the U.S. and Canada.
2. The U.S. and Canada should take legislative action at the federal level to better define e-bikes, create more uniformity in regulations, reduce regulatory burdens, and increase uptake of e-bikes across North America. In Canada, a harmonized legislative framework for e-bikes should be a national priority and the efficacy of devolving e-bike regulation to provinces should be subject to a full regulatory impact statement.
3. Further research and technical evaluation of the safety risks associated with e-bikes travelling at higher speeds is urgently needed. If sufficient evidence exists of a higher level of risk exposure arising from e-bikes with more powerful motors, then governments must act in the public interest to reduce risk through effective regulation of e-bike speed and/or motor power.
4. Further study of the interaction of e-bike riders, non-motorized bicyclists, and pedestrians is needed, particularly as it relates to existing and planned shared infrastructure such as sidewalks and shared use paths.
5. Widespread adoption of e-bikes has the potential to make a lasting and positive impact on major public health challenges, including diabetes and obesity across the continent.
6. Greater attention to the enforceability of e-bike legislation and regulation is needed, as is greater focus on the educational needs stemming from increasing e-bike adoption.
7. E-bikes have the potential to lower barriers to cycling for people with different transportation and physical activity needs, including people whose commute trip exceeds 15 to 18 minutes, and people who are reluctant or unable to use non-motorized bicycles due to the physical demands, but have the ability to handle an e-bike.

APBP sought comments on a draft policy statement from its Policy Committee members. APBP's Board of Directors approved the initial version of this policy statement on January 3, 2019, and a revision on December 14, 2023. APBP members can suggest changes to any policy statement by contacting the association's executive director, policy committee chair, or board member. For more information, contact: Lauren Santangelo, Executive Director, at lsantangelo@amrms.com.