COUNTY OF SAN DIEGO DEPARTMENT OF PARKS AND RECREATION POLICY & PROCEDURE MEMORANDUM	POLICY NUMBER C-50 Page 1 of 2
TITLE: E-Bike Use in Parks, Preserves, Trails and Pathways	

Date Issued/revised: October 2024
Authorized by: Jason Hemmens, Interim Director
Signature: Jason Hemmens

IT IS THE POLICY of the County of San Diego Department of Parks and Recreation (DPR) that all people should have the opportunity to enjoy and have equal access to County operated parks and recreation facilities. County operated trails and pathways shall be used only for non-motorized transportation and multi-use recreation for pedestrians, equestrians, and cyclists.

The exceptions created by the State of California are as follows:

BACKGROUND

CA State Assembly Bill 1909 specifically gives the ability to prohibit the operation of an electric bicycle (E-Bike), or similar electric powered mobility device, on any path or trail within DPR's jurisdiction. In addition, San Diego County Ordinance Section 812.206 (b), Use of Trails, authorizes the County Official (Director of Parks and Recreation) to restrict the types of recreation and transportation uses that would be otherwise allowed on a trail or pathway if the County Official determines that to maintain the public safety and welfare or to prevent damage to a trail or pathway or the area along a trail or pathway, certain recreation and/or transportation uses would not be allowed on a trail or pathway or a segment thereof. All other E-Bikes that do not meet the definitions of an E-Bike are considered a motor vehicle by the California Department of Transportation and are required to stay on paved surfaces designed for motor vehicle use by the State of California and in DPR parks.

- The State of California passed AB 1906 in October 2015 which states Class 1 & 2 E-Bikes that are less than 750 watts/20 mph use limit are non-motorized bicycles that may go wherever a bicycle can go unless there is a specific ordinance restricting their use. In addition, Class 3 E-Bikes that are less than 750 watts/28 mph use limit can go on paved paths and be designated for other use areas by specific ordinance.
- The State of California passed AB 1909 in September 2022 which states Class 3 E-bikes that are less than 750 watts/28 mph use limit are non-motorized bicycles that may go where a bicycle can go, such as Class 1 & 2 E-Bikes in AB 1906, unless there is a specific ordinance or prohibition by the Department of Parks and Recreation to prohibit the operation of an electric bicycle on any path or trail within the department's jurisdiction.

PROCEDURE:

Class 1 & 2 E-Bikes are permitted on all County trails and paved paths/roadways where bicycles are permitted unless specifically restricted by the DPR Director for environmental, maintenance, or safety concerns.

- Class 1 & 2 E-Bikes must have a classification number label that is permanently affixed, in a prominent location, on each bike, as required by the State of California.
- A list of DPR facilities, County trails, and paved pathways where Class 1 & 2 E-Bikes are specifically restricted will be available on the DPR website www.sdparks.org.
- Class 3 E-Bikes are prohibited on DPR trails or paved paths and must follow motor vehicle laws on paved roadways in DPR parks.
- Personal electric vehicles that are not Class 1 or 2 E-Bikes, such as electric motorized skateboards and scooters, or similar devices (such as one-wheel devices) are prohibited on DPR trails and paved paths/roadways.

TITLE: E-Bike Use in Parks, Preserves, Trails and Pathways

- More powerful electric bikes that do not meet the Class 1 & 2 wattage and speed limits are considered motorized vehicles by the California Department of Transportation and are prohibited on DPR trails and paved paths/roadways.
- E-Bikes with controls that can be adjusted beyond the Class 1 & 2 speed limits are prohibited.
- Helmets are required of all E-Bike riders, including passengers, under the age of 18 and recommended for all bike riders and passengers on DPR trails and paved paths/roadways.
- E-Bikes, or similar personal electric vehicles, are prohibited on the Ramona Grasslands Old Survey Road 97 to limit potential impacts to federally protected species in that area.
- Improper use of any DPR trail or paved path/roadway can lead to the prohibition of a trail user.
- Laws & regulations within the Americans with Disabilities Act may supersede limitations in this Policy.
- E-Bike use on DPR trails or paved paths/roadways may be temporarily suspended when continued use may cause damage.
- It is prohibited to carry passengers on an E-Bike unless the bike has an extra permanent seat or when using a child safety seat.
- E-Bikes are not considered electric assisted mobility devices in the State of California. This policy does not apply to an electric assisted mobility device.

END

Proposal for Sustainable Access to Class 1 Pedal Assist E-Mountain Bikes on Natural Trails in Orange County, California

For Discussion

6 February 2025

Submitted by:
Chris Murphy: chrisjmurphy@me.com
Jeff Curie: jeff.curie@gmail.com

Executive Summary

Growing popularity of Class 1 pedal assist mountain bikes (C1PA) presents a unique opportunity to expand trail access while ensuring environmental stewardship and public safety. With an estimated 50% of trail users already riding C1PAs, it is essential to establish a low-cost, light-touch framework that promotes responsible use, minimizes environmental impacts, and aligns with existing conservation priorities.

This proposal outlines a pragmatic, community-driven approach to incorporate C1PAs into Orange County's natural trails with minimal administrative burden and cost. The plan focuses on education, responsible self-regulation, and adaptive management, ensuring sustainable recreation that benefits all stakeholders while attempting to address concerns from landowners, policy makers, conservation advocates, and trail users.

Key Objectives

Legal Clarity & Alignment with State Law

- Ensure compliance with California Vehicle Code (CVC §312.5), which classifies C1PAs as bicycles, distinguishing them from motorized vehicles
- Work with park agencies and landowners to formalize access on designated trails that align with existing regulations and conservation goals

Community Stewardship Program

- Establish or integrate C1PA users into a Steward Program, which would be a volunteer-based initiative that educates and supports responsible riding without requiring additional park resources
- Encourage riders to become stewards through peer engagement, reporting trail conditions, and promoting trail etiquette, ensuring trail integrity and addressing environmental concerns

Simple Education & Compliance Measures

- Introduce voluntary, point-of-sale (POS) education materials distributed via local bike shops and online, focusing on
- Trail access guidelines
- Safety and environmental best practices
- Responsible rider etiquette, emphasizing environmental awareness and wildlife respect

Why Act Now?

Encourage Responsible Access

Acting now prevents unmanaged C1PA growth and fosters a culture of stewardship that preserves trails and wildlife habitats in line with conservation commitments

Enhance Community Value

Well-maintained parks and open spaces contribute to increased property values and tax revenues, benefiting local economies and supporting community development

Minimize Enforcement Challenges

A clear, defined policy will help park rangers and private landowners distinguish legal C1PAs from illegal high-powered bikes, reducing confusion protecting wildlife and habitat and easing enforcement efforts

Sustainability Without High Costs

A volunteer-driven model ensures trail stewardship and education without overburdening park budgets or requiring taxpayer funding

Proposal Overview

1. Legal Recognition of C1PAs on Designated Trails

1. Formalize C1PAs access on specific trails with sustainable surfaces and lower ecological sensitivity
2. Implement seasonal access limitations in collaboration with conservation groups, restricting C1PAs in sensitive areas during critical wildlife periods
3. Adopt clear signage at trailheads to inform users of permitted routes and reinforce responsible trail use
4. **Cost:** Minimal – leverages existing trail infrastructure and signage updates

2. Community-Led Stewardship Program

1. Citizen Stewards: Recruit volunteers to serve as trail ambassadors who promote responsible riding and report trail issues
2. Self-Policing: Riders encourage adherence to trail etiquette via social media and rider groups to reduce conflicts with other users
3. Digital Engagement: Use QR codes at trailheads linking to trail use guidelines, reporting forms, and conservation updates
4. **Cost:** No additional staffing required, use community engagement channels

3. Easy and Accessible Education Program

1. Point-of-Sale (POS) Education
    - Partner with local bike retailers to distribute free educational pamphlets and encourage customers to sign a voluntary "Trail Pledge" or "Road Smart"
    - Provide a downloadable "Ride Right" guide available on park websites and social media
2. On-Trail Signage: Install simple, visually engaging signs to highlight trail etiquette (*e.g.*, yield rules, speed limits, wildlife awareness)
3. **Cost:** Sponsored materials by local bike shops and community partners

Benefits of the Proposal

For Landowners and Conservancy Advocates

- Preserves Open Space Integrity: Sustainable trail management minimizes ecological damage while encouraging responsible outdoor use
- Reduced Liability Risks: Clear guidelines and educational efforts ensure compliance and responsible riding, reducing the likelihood of incidents
- Community Partnership: Provides an opportunity to collaborate with recreational groups to support conservation efforts while balancing access

For Local Policy Makers

- Enhanced Property Values and Tax Revenue: Proximity to well-maintained parks and trails is shown to increase home values, driving higher tax revenues and supporting community services
- Reduced Regulatory Challenges: Establishing clear regulations reduces enforcement challenges and provides a proactive, community-driven solution
- Balanced Community Interests: This proposal offers a compromise that satisfies both recreational users and conservation efforts demonstrating responsive governance

For Park Managers and Rangers

- Clear differentiation between C1PAs and illegal vehicles reduces enforcement confusion
- Self-policing and reporting reduce administrative burden
- Data-driven insights inform future trail management decisions

For Trail Users

- Clear guidelines improve trail-sharing and safety
- Expands access for individuals of varying fitness levels
- Provides structured, responsible access rather than unmanaged growth

Conclusion & Call to Action

A Balanced and Practical Path Forward:

This proposal presents a low-cost, light-touch solution to responsibly integrate C1PAs into natural trails while addressing stakeholder concerns. By fostering a culture of education, stewardship, and adaptive management, Orange County can benefit from enhanced outdoor recreation while preserving its natural beauty and economic vitality.

Call to Action:

We urge all interested groups and Orange County policy makers to support this pragmatic, self-sustaining approach that balances recreation with conservation and community interests. Together, we can ensure that our parks remain accessible, safe, and sustainable for generations to come.

Allowing Class 1 Pedal Assist (C1PA) Bikes on Designated Mountain Bike Trails

OC Parks Trails Sub-Committee Meeting

October 10, 2024

Executive Summary

- The rise of electrically assisted bikes is accelerating. OC Parks should join others to recognize the 3-class system of e-bikes, and treatment of each class
- Class 1 Pedal Assist (C1PA) bikes should be treated as bicycles and allowed on same designated trails as mountain bikes
- Class 2 and 3 should not be permitted because they either (i) do not require pedaling and/or (ii) have higher speeds
- Amending existing ordinance 2-5-29 (n) can permit use of C1PA bicycles in OC Parks on authorized bike trails (*i.e.*, unpaved roads and natural trails) by amendment
- Options are presented to change the ordinance to allow C1PA to be treated as bikes, there may be other ways as well

Rule Changes Allowing C1PA on Bike Trails

1. Recognize C1PA are bicycles NOT motor vehicles in OC Parks (Cal. Veh. Code §231*)
2. Recognize classifications of electric bicycles in OC Parks policy (Cal. Veh. Code §312.5**)
3. Allow use of C1PA on unpaved roads and natural trails where bicycles are permitted

* Amended by Stats. 2021, Ch. 311, Sec. 1. (SB 814) Effective January 1, 2022

** Added by Stats. 2015, Ch. 568, Sec. 1. (AB 1096) Effective January 1, 2016

Options for permitting C1PA bicycles in OC Parks

- **Option 1 – Update Existing Ordinance:** update the existing OC Parks ordinance (OC Ordinance Vehicle Regulation Sec. 2-5-29(n)) to authorize use of C1PA bikes on OC Parks unpaved roads and natural trails where bikes are permitted; or
- **Option 2 – Adopt New Ordinance:** adopt a new ordinance for OC Parks that recognizes electric bike classifications and authorizes C1PA bikes on County park unpaved roads and natural trails where bikes are permitted (building on classifications recently adopted by the Board of Supervisors based on the recommendation from the OC Public Works Commission for paved roads)
- There may be other ways as well

Option 1: Update Ordinance

- **OC Municipal Ordinance (Vehicle Regulation Sec. 2-5-29 (n))**
- Title 2: Public Facilities
- Division 5: Parks, Beaches and Recreational Areas

• *Motorized Wheeled Conveyance Prohibited.* No person shall operate or drive any **electric** or combustible motorized skateboard, scooter, dirt bike, mini bike, mini motor bike, mini motorcycle, go-kart, go-ped, mo-ped, all-terrain-vehicle, quad runner, dune buggy or any similar electric or combustible motorized wheeled conveyance in any park, beach or recreational area, with the exception of Class 1 ~~and Class 2~~ electric bicycles, as defined by the California Vehicle Code, on those regional paved, off-road bikeways and unpaved roads and natural trails , unless otherwise designated ~~for such use~~ by the Director of OC Parks, with the approval of the Board of Supervisors.

Option 2: Create New Ordinance

- **Mirror** OC Public Works new ordinance adopted by the Supervisors

New OC Public Works: Code Sec. 6-4-102: Definitions

(c) Bicycle: As defined by Vehicle Code 231, as may be amended or superseded, a bicycle is a device upon which a person may ride, propelled by human power through a belt, chain, or gears, and having one or more wheels; for the purposes of this ordinance, an electric bicycle, or e-bike, shall be considered a bicycle.

...

(k) Electric Bicycle: An electric bicycle (also known as e-bike) is a bicycle equipped with fully operable pedals and an electric motor of less than 750 watts. Electric bicycle does not include motorized bicycles or mopeds as defined in California Vehicle Code 406(a).

i. A "class 1 electric bicycle," or "low speed pedal-assisted 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.

- **Add** a provision stating that: "A Class 1 Pedal Assist bicycle may be ridden in places where bicycles are allowed, including but not limited to, streets, highways, roads, bicycle lanes, and bicycle or unpaved roads or natural trails."

Option 1: Update Ordinance

- **OC Municipal Ordinance (Vehicle Regulation Sec. 2-5-29 (n))**
- Title 2: Public Facilities
- Division 5: Parks, Beaches and Recreational Areas

• *Motorized Wheeled Conveyance Prohibited.* No person shall operate or drive any **electric** or combustible motorized skateboard, scooter, dirt bike, mini bike, mini motor bike, mini motorcycle, go-kart, go-ped, mo-ped, all-terrain-vehicle, quad runner, dune buggy or any similar electric or combustible motorized wheeled conveyance in any park, beach or recreational area, with the exception of Class 1 ~~and Class 2~~ electric bicycles, as defined by the California Vehicle Code, on those regional paved, off-road bikeways and unpaved roads and natural trails , unless otherwise designated ~~for such use~~ by the Director of OC Parks, with the approval of the Board of Supervisors.

Option 2: Create New Ordinance

- **Mirror** OC Public Works new ordinance adopted by the Supervisors

New OC Public Works: Code Sec. 6-4-102: Definitions

(c) Bicycle: As defined by Vehicle Code 231, as may be amended or superseded, a bicycle is a device upon which a person may ride, propelled by human power through a belt, chain, or gears, and having one or more wheels; for the purposes of this ordinance, an electric bicycle, or e-bike, shall be considered a bicycle.

...

(k) Electric Bicycle: An electric bicycle (also known as e-bike) is a bicycle equipped with fully operable pedals and an electric motor of less than 750 watts. Electric bicycle does not include motorized bicycles or mopeds as defined in California Vehicle Code 406(a).

i. A "class 1 electric bicycle," or "low speed pedal-assisted 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.

- **Add** a provision stating that: "A Class 1 Pedal Assist bicycle may be ridden in places where bicycles are allowed, including but not limited to, streets, highways, roads, bicycle lanes, and bicycle or unpaved roads or natural trails."

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

Orange County Cycling Business Coalition & PeopleForBike's EMTB Resources

An electric bicycle is designed similarly to a traditional bicycle but has three additional components – a small motor that provides assistance to the bike rider, a battery to provide power to the motor, and electronics that enable the rider to control the system. Recent advances in electronic and battery technology have made electric bicycles more affordable and an excellent form of transportation and recreation for many Americans. The federal government has regulated electric bicycles since 2002 when legislation was passed defining low-speed electric bicycles.

California adopted the three-class designation for electric bicycles in 2015 (CA AB 1096), defining electric bicycles as equipped with fully operable pedals, and an electric motor of less than 750 watts that meets the requirements of one of the following three classes:

(a) "Class 1 electric bicycle" is 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.
(b) "Class 2 electric bicycle" is equipped with a motor 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.
(c) "Class 3 electric bicycle" is 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.

Additionally, in 2024 CA AB 1271 was signed into law, which requires all e-bikes to be labeled as Class 1, 2, or 3, depending on the top speed and whether it has a throttle. California's definition of Class 1 and 3 electric bikes will now include the phrase "is not capable of exclusively propelling the bicycle." This means that Class 1 (20 mph max assist) and Class 3 (28 mph max assist) e-bikes with both throttle- and pedal assist would no longer be within the definition of "electric bicycle."

The new legislation states, "A 'class 2 electric bicycle,' or 'low-speed throttle-assisted electric bicycle,' is a bicycle equipped with a motor 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. ... A class 1 or class 3 electric bicycle may have start assistance or a walk mode that propels the electric bicycle on motor power alone, up to a maximum speed of 3.7 miles per hour."

According to California state law, electric bicycles are regulated like bicycles and the same rules of the road apply to both electric bicycles and human-powered bicycles. Therefore electric bicycles are not subject to the registration, licensing, or insurance requirements that apply to motor vehicles. As of today, 48 states regulate electric bicycles like bicycles, of which 43 have defined the three classes, including California.

Existing research from the USDA Forest Service and the East Zone Connectivity and Restoration Project in Tahoe National Forest indicates that pedal-assist Class 1 electric

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

bicycles can be successfully incorporated into trails with non-motorized uses.[1] Included in the East Zone Connectivity's final decision notice was the designation of 35 miles of existing non-motorized trails as open for Class 1 pedal-assist mountain bikes. With the introduction of Class 1 electric mountain bikes on natural surface trails where mountain bikes are already allowed in the East Zone, staff found that they do not significantly alter public enjoyment or affect the patterns of use on those trails. In most places, traditional mountain bikes and Class 1 electric bicycles have similar effects on the physical trails and public use patterns.[2]

Based on the findings from the East Zone Connectivity Project, the Tahoe National Forest also completed a NEPA Environmental Assessment for the Pines to Mines Project, which opened access to 72 miles of singletrack trails for Class 1 electric mountain bikes where traditional mountain bikes are already allowed. As noted in the final decision notice for the Environment Assessment for the Pines to Mines Trail Project (which included a Finding of No Significant Impact), the impacts to trail tread and speed differentials were not shown to be affected by Class 1 electric bicycles compared to analog mountain bikes:

> "Effects on trails are not considered to be significantly different between traditional mountain bikes and Class 1-E-Bikes. Their equipment components are similar including wheel size, tire tread, gearing, chain, brakes, and gear shifting mechanisms. Impacts on trails in terms of tread wear, soil movement, erosion, and contribution to sediment delivery have also been shown to be similar (Wilson and Seney 1994; Weaver and Dale 1978; IMBA 2015). Finally, a review of the literature, consideration of current user trends, and USFS observations of use characteristics during the 2019 season when Class 1 E-Bikes were allowed on all non-motorized trails in the forest determined there are no significant differences between the two vehicle classes with respect to relative speeds (Langford et al. 2015; TNF Unpublished 2020) and user behavior (Langford et al. 2015)."[3]

Pedal-assist Class 1 mountain bicycles are an emerging technology that makes the activity of mountain biking more accessible and enjoyable to users with different levels of experience, skill, and physical ability. Class 1 mountain bikes look, are equipped, and ride like traditional bicycles and simply give riders – regardless of age, physical, or cognitive ability – an extra assist while pedaling. When introduced on- or off-road, studies have shown that there appear to be minimal conflicts between Class 1 pedal-assist bicycle riders and other user groups, with no material safety distinctions between Class 1 and conventional bicycle use.[4]

---

[1] USDA Forest Service. "Tahoe National Forest East Zone Connectivity and Restoration Project Draft Decision Notice." (2021).

[2] USDA Forest Service. "Tahoe National Forest East Zone Connectivity and Restoration Project Draft Decision Notice." (2021).

[3] USDA Forest Service. "Preliminary Environmental Assessment: Pines to Mines Trail Project." (2023).

[4] Jefferson County, Colorado Electric Bicycle Study (2017)

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

Examples of communities and government agencies that have undertaken significant studies of electric bicycle impacts, rider behavior, perceptions, safety, etc. from other user groups are attached. We believe an objective examination of the facts leads to the conclusion that Class 1 pedal-assist electric bicycles should be treated like conventional bicycles on natural surface trails throughout California.

Additional Information on Electric Bicycle Speed, Safety, and Studies

USDA Forest Service NEPA Environmental Assessments indicate Class 1 electric bicycles can be successfully incorporated into trails with non-motorized uses.

A. The observations and data collected by TNF staff, relative to Class 1 electric mountain bikes' impact on trails, are consistent with the findings from other studies in this topic area. These studies were conducted by varying institutions, universities, and industry groups that performed research on trail impacts from recreational uses. Data from the scientific literature is consistent on several key points:
    a. Greater sediment yields are produced by equestrians and pedestrians when compared to wheeled modes of transportation. (East Zone Connectivity and Restoration Project Decision Notice & FONSI 2021)
    b. Horse traffic produces the greatest force (weight per unit area) among hikers, equestrians, mountain bikers, and motorcyclists. (East Zone Connectivity and Restoration Project Decision Notice & FONSI 2021)
    c. Horses cause greater increases in soil compaction, litter, trail width, and trail depth compared to hikers and motorcycles. (East Zone Connectivity and Restoration Project Decision Notice & FONSI 2021)
B. TNF's observations related to trail impacts are also consistent with a study conducted by the International Mountain Bicycling Association (IMBA) which found similar effects between Class 1 electric mountain bikes and their conventional counterparts (East Zone Connectivity and Restoration Project Decision Notice & FONSI 2021).
C. Based on a review of their findings, "Tahoe National Forest has determined that inclusion of Class 1 E-bikes as a designated, legitimate use on these trails does not constitute an increased adverse impact to their sustainability," (East Zone Connectivity and Restoration Project Decision Notice & FONSI 2021).

Electric bicycles travel at similar speeds to traditional bicycles.

A. Class 1 electric bicycles have a motor that cuts off after the rider reaches 20mph. This is not the average speed. On flat and uphill surfaces, electric bicycles travel on average 2-3 mph faster than conventional bicycles (i.e. around 13-14 mph). However, studies show that the sex of the rider is a better predictor of speed than whether they are using a conventional or electric bicycle. Studies also show that electric bicycles do not travel significantly faster than regular bicycles, and in some instances, are slower, depending on the location and the rider.
    - US Department of Transportation Federal Highway Administration. "E-Bikes in Public Lands: A Human Factors Field Study." (August 2023).

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

research the use of electric bicycles to inform a data-driven policy for their community.

C. Results: This research found that electric bicycle users exhibit nearly identical behavior as regular bike users, electric bicycle speeds were observed to be lower than standard bike speeds on shared trails, electric bicycles tend to be similar to regular bikes and most trail users are unaware of the presence of electric bicycles when asked.

Jefferson County Study (2017)

A. Overview: Jefferson County, CO conducted two studies at multiple parks to gain a better understanding of visitors' knowledge, perceptions, and concerns related to the use of electric bicycles on urban pathways and natural surface trails. Through 'Test Ride Surveys,' visitors are asked four questions before and after riding an electric bicycle to determine familiarity with electric bicycles and any changes in perception and/or acceptance after riding one. Through 'Visitor Intercept Surveys,' random park visitors are asked about their perceptions, acceptance, and concerns related to electric bicycles on trails, as well as their ability to detect an electric bicycle sharing the pathway with them.
B. Rationale: Jefferson County realized that electric bicycles are already in use on its pathways and trails, and that usage will not significantly decrease with a wholesale ban. It has opted to study the issue and engage park visitors to determine whether to allow or prohibit this technology on the transportation and recreation corridors under its jurisdiction.

Additional Information on Electric Mountain Bike Etiquette and Model Legislation

Etiquette Guidelines and Trail Signage for eMTBs

I've included several trail signage examples (linked below) from a few other communities I've heard of or helped over the last year. Many have been dealing with e-scooters, one wheels, and out-of-class electric vehicles on trails where mountain bikes are allowed, but not where electric motorcycles are authorized.

- Skyline Park, Napa, CA Trail Signage
- No Electric Scooters Signage
- Lime Scooters + Austin Signage
- FORCE Florida Off-Road Cycling Enthusiasts Signage
- Austin City Parks Signage
- Alafia Mountain Bike Trails Signage

Please find PeopleForBikes' Trail Etiquette Guidelines for eMTBs on Natural Surface trails, here.

OCEV Education

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

The Out-of-Class Working Group helped to put together to educate land managers and consumers to understand what the categories are of e-bikes and e-motos, and where they can typically be ridden. You can find the "Identification Guide" here.

PeopleForBikes EMTB on State Lands Model Legislation

PeopleForBikes has created model legislation to address access for eMTBs on State Lands, which can be found here.

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.

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.

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

Orange County Cycling Business Coalition & PeopleForBike's EMTB Resources

An electric bicycle is designed similarly to a traditional bicycle but has three additional components – a small motor that provides assistance to the bike rider, a battery to provide power to the motor, and electronics that enable the rider to control the system. Recent advances in electronic and battery technology have made electric bicycles more affordable and an excellent form of transportation and recreation for many Americans. The federal government has regulated electric bicycles since 2002 when legislation was passed defining low-speed electric bicycles.

California adopted the three-class designation for electric bicycles in 2015 (CA AB 1096), defining electric bicycles as equipped with fully operable pedals, and an electric motor of less than 750 watts that meets the requirements of one of the following three classes:

(a) "Class 1 electric bicycle" is 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.
(b) "Class 2 electric bicycle" is equipped with a motor 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.
(c) "Class 3 electric bicycle" is 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.

According to California state law, electric bicycles are regulated like bicycles and the same rules of the road apply to both electric bicycles and human-powered bicycles. Therefore electric bicycles are not subject to the registration, licensing, or insurance requirements that apply to motor vehicles. As of today, 48 states regulate electric bicycles like bicycles, of which 43 have defined the three classes, including California.

Existing research from the USDA Forest Service and the East Zone Connectivity and Restoration Project in Tahoe National Forest indicates that pedal-assist Class 1 electric bicycles can be successfully incorporated into trails with non-motorized uses.[1] Included in the East Zone Connectivity's final decision notice was the designation of 35 miles of existing non-motorized trails as open for Class 1 pedal-assist mountain bikes. With the introduction of Class 1 electric mountain bikes on natural surface trails where mountain bikes are already allowed in the East Zone, staff found that they do not significantly alter public enjoyment or affect the patterns of use on those trails. In most places, traditional mountain bikes and Class 1 electric bicycles have similar effects on the physical trails and public use patterns.[2]

Based on the findings from the East Zone Connectivity Project, the Tahoe National Forest

[1] USDA Forest Service. "Tahoe National Forest East Zone Connectivity and Restoration Project Draft Decision Notice." (2021).

[2] USDA Forest Service. "Tahoe National Forest East Zone Connectivity and Restoration Project Draft Decision Notice." (2021).

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

also completed a NEPA Environmental Assessment for the Pines to Mines Project, which opened access to 72 miles of singletrack trails for Class 1 electric mountain bikes where traditional mountain bikes are already allowed. As noted in the final decision notice for the Environment Assessment for the Pines to Mines Trail Project (which included a Finding of No Significant Impact), the impacts to trail tread and speed differentials were not shown to be affected by Class 1 electric bicycles compared to analog mountain bikes:

> "Effects on trails are not considered to be significantly different between traditional mountain bikes and Class 1-E-Bikes. Their equipment components are similar including wheel size, tire tread, gearing, chain, brakes, and gear shifting mechanisms. Impacts on trails in terms of tread wear, soil movement, erosion, and contribution to sediment delivery have also been shown to be similar (Wilson and Seney 1994; Weaver and Dale 1978; IMBA 2015). Finally, a review of the literature, consideration of current user trends, and USFS observations of use characteristics during the 2019 season when Class 1 E-Bikes were allowed on all non-motorized trails in the forest determined there are no significant differences between the two vehicle classes with respect to relative speeds (Langford et al. 2015; TNF Unpublished 2020) and user behavior (Langford et al. 2015)."[3]

Pedal-assist Class 1 mountain bicycles are an emerging technology that makes the activity of mountain biking more accessible and enjoyable to users with different levels of experience, skill, and physical ability. Class 1 mountain bikes look, are equipped, and ride like traditional bicycles and simply give riders – regardless of age, physical, or cognitive ability – an extra assist while pedaling. When introduced on- or off-road, studies have shown that there appear to be minimal conflicts between Class 1 pedal-assist bicycle riders and other user groups, with no material safety distinctions between Class 1 and conventional bicycle use.[4]

The most current research and studies, including examples of communities and government agencies that have undertaken significant studies of electric bicycle impacts, rider behavior, perceptions, safety, etc. from other user groups, are attached. We believe an objective examination of the facts leads to the conclusion that Class 1 pedal-assist electric bicycles should be treated like conventional bicycles on natural surface trails throughout California.

Additional Information on Electric Bicycle Speed, Safety, and Studies

<u>USDA Forest Service NEPA Environmental Assessments indicate Class 1 electric bicycles can be successfully incorporated into trails with non-motorized uses</u>.

A. The observations and data collected by TNF staff, relative to Class 1 electric mountain bikes' impact on trails, are consistent with the findings from other studies in this topic area. These studies were conducted by varying institutions,

---

[3] USDA Forest Service. "Preliminary Environmental Assessment: Pines to Mines Trail Project." (2023).

[4] Jefferson County, Colorado Electric Bicycle Study (2017)

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

universities, and industry groups that performed research on trail impacts from recreational uses. Data from the scientific literature is consistent on several key points:

a. Greater sediment yields are produced by equestrians and pedestrians when compared to wheeled modes of transportation. (East Zone Connectivity and Restoration Project Decision Notice & FONSI 2021)
b. Horse traffic produces the greatest force (weight per unit area) among hikers, equestrians, mountain bikers, and motorcyclists. (East Zone Connectivity and Restoration Project Decision Notice & FONSI 2021)
c. Horses cause greater increases in soil compaction, litter, trail width, and trail depth compared to hikers and motorcycles. (East Zone Connectivity and Restoration Project Decision Notice & FONSI 2021)

B. TNF's observations related to trail impacts are also consistent with a study conducted by the International Mountain Bicycling Association (IMBA) which found similar effects between Class 1 electric mountain bikes and their conventional counterparts (East Zone Connectivity and Restoration Project Decision Notice & FONSI 2021).
C. Based on a review of their findings, "Tahoe National Forest has determined that inclusion of Class 1 E-bikes as a designated, legitimate use on these trails does not constitute an increased adverse impact to their sustainability," (East Zone Connectivity and Restoration Project Decision Notice & FONSI 2021).

Electric bicycles travel at similar speeds to traditional bicycles.

A. Class 1 electric bicycles have a motor that cuts off after the rider reaches 20mph. This is not the average speed. On flat and uphill surfaces, electric bicycles travel on average 2-3 mph faster than conventional bicycles (i.e. around 13-14 mph). However, studies show that the sex of the rider is a better predictor of speed than whether they are using a conventional or electric bicycle. Studies also show that electric bicycles do not travel significantly faster than regular bicycles, and in some instances, are slower, depending on the location and the rider.
    - US Department of Transportation Federal Highway Administration. "E-Bikes in Public Lands: A Human Factors Field Study." (August 2023).
        - In locations identified as a higher risk for potential conflicts along an unpaved, multiuse trail, analysis shows that e-bike riders travel slightly faster on average than conventional bike riders. However, the **sex of the rider predicts a greater increase in speed** (males average 2.51 mph increase) **than whether they are using a conventional or electric bicycle.** Distributions of e-bike and conventional bike rider speeds overwhelmingly overlap with one another: both exhibit similar extremes at the high and low ends of the speed spectrum.
    - Tahoe National Forest NEPA Environmental Assessment. "East Zone Connectivity and Restoration Project Decision Notice & FONSI" (2021).
        - During the EA process, TNF concluded that differences in speeds on singletrack natural surface trails are largely dictated by the rider's ability as well as trail conditions, alignment, and design. Additionally,

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

it was noted that Class 1 electric bicycles and conventional mountain bikes have almost indistinguishable frames and components, making their stopping ability similar and trail etiquette guidelines the same for both types of users.

- Cherry, C. & MacArthur, J., E-bike safety, A review of Empirical European and North American Studies (Oct. 15, 2019)
  - "[Electric bicycle] riders tend to ride at higher speeds on uphill segments, but not flat or downhill segments.").
- Langford, B. et al, "Risky riding: Naturalistic methods comparing safety behavior from conventional bicycle riders and electric bike riders, Accident Analysis & Prevention." (Sept. 2015)
  - "We find that average on-road speeds of e-bike riders (13.3 kph) were higher than regular bicyclists (10.4 kph) but shared use path (greenway) speeds of e-bike riders (11.0 kph) were lower than regular bicyclists (12.6 kph)".

<u>Electric bicycle riders comply with laws in the same way as riders of conventional bikes</u>.

A. Electric bicycle users are like most people and choose to respect the law of the road and be kind to others with whom they share public resources. They would respond more favorably to restrictions on use rather than an outright ban. Most critically, existing studies show that electric bicycle riders comply with laws to the same extent as bicycle riders.
   - Cherry, C. & MacArthur, J., E-bike safety, A review of Empirical European and North American Studies (Oct. 15, 2019)
     - "For other safety surrogates (wrong way riding, stop sign and signal compliance) e-bike riders behaved in the same way as cyclists, with similar violation rates."
   - Langford, B. et al, Risky riding: Naturalistic methods comparing safety behavior from conventional bicycle riders and electric bike riders, Accident Analysis & Prevention (Sept. 2015)
     - "E-bike riders exhibit nearly identical safety behavior as regular bike riders and should be regulated in similar ways.".

<u>The safety outcomes relating to electric bicycle use and conventional bicycle use are similar.</u>

A. Banning electric bicycles from areas where traditional bicycles are used is not justified based on safety issues or the risk of collisions.
   - US Department of Transportation Federal Highway Administration. "E-Bikes in Public Lands: A Human Factors Field Study." (August 2023).
     - Conventional and e-bike rider behavior is similar at locations with a higher risk of conflict. Both e-bike and conventional bike riders reduce speeds and exhibit similar precautionary behaviors: at vehicle conflict points, in narrow sections of the trail, and when passing other trail users.
   - Cherry, C. & Fishman, E., E-bikes in the Mainstream: Reviewing a Decade of Research, Transport Review (July 2015)

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

    - "Overall differences in safety outcomes were not dramatic between e-bike and bicycle riders.").
- Cherry, C. & MacArthur, J., E-bike safety, A review of Empirical European and North American Studies (Oct. 15, 2019)
    - Summarizing European studies finding that over the same distances traveled, "e-bikes and conventional bicycles have the same crash risk.".

An electric bicycle ban will not decrease ridership, only complicate enforcement. There is strong demand in the public for electric bicycles.

A. Ridership is increasing, and people are using electric bicycles to recreate, replace vehicle trips, and augment existing bicycle trips. In 2020, electric bicycle sales grew by 132% (Source: the NPD Group). This is the fast-growing sector of sales in the bicycle industry by a significant margin.
B. Industry analysts estimate that more than 13.5 million electric bicycles will be sold in the United States between 2020 and 2030 (S&P Global Bicycle Industry Risk & Opportunity Forecast produced for PeopleForBikes)

Studies by Local Governments

There are two in-depth studies that local governments have taken to understand electric bicycle rider behavior and craft local ordinances to regulate their use.

Fairfax County Research (2019)

A. Overview: Fairfax County, VA worked closely with NOVA (Northern Virginia) Parks to fund a white paper to gain a better understanding of electric bicycles. This research reviewed federal and state electric bicycle laws and model legislation, the difference in safety and behavior between regular bikes vs electric bicycles, other local trail systems policies, current park regulations, and potential alternatives.
B. Rationale: The increased use of electric bicycles within Fairfax County sparked the need to address current regulations regarding their use. The county chose to research the use of electric bicycles to inform a data-driven policy for their community.
C. Results: This research found that electric bicycle users exhibit nearly identical behavior as regular bike users, electric bicycle speeds were observed to be lower than standard bike speeds on shared trails, electric bicycles tend to be similar to regular bikes and most trail users are unaware of the presence of electric bicycles when asked.

Jefferson County Study (2017)

A. Overview: Jefferson County, CO conducted two studies at multiple parks to gain a better understanding of visitors' knowledge, perceptions, and concerns related to the use of electric bicycles on urban pathways and natural surface trails. Through 'Test Ride Surveys,' visitors are asked four questions before and after riding an electric bicycle to determine familiarity with electric bicycles and any changes in

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

perception and/or acceptance after riding one. Through 'Visitor Intercept Surveys,' random park visitors are asked about their perceptions, acceptance, and concerns related to electric bicycles on trails, as well as their ability to detect an electric bicycle sharing the pathway with them.

B. Rationale: Jefferson County realized that electric bicycles are already in use on its pathways and trails, and that usage will not significantly decrease with a wholesale ban. It has opted to study the issue and engage park visitors to determine whether to allow or prohibit this technology on the transportation and recreation corridors under its jurisdiction.

Additional Information on Electric Mountain Bike Etiquette and Model Legislation

Etiquette Guidelines and Trail Signage for eMTBs

I've included several trail signage examples (linked below) from a few other communities I've heard of or helped over the last year. Many have been dealing with e-scooters, one wheels, and out-of-class electric vehicles on trails where mountain bikes are allowed, but not where electric motorcycles are authorized.

- Skyline Park, Napa, CA Trail Signage
- No Electric Scooters Signage
- Lime Scooters + Austin Signage
- FORCE Florida Off-Road Cycling Enthusiasts Signage
- Austin City Parks Signage
- Alafia Mountain Bike Trails Signage

Please find PeopleForBikes' Trail Etiquette Guidelines for eMTBs on Natural Surface trails, here.

OCEV Model Legislation + Education

The Out-of-Class Electric Vehicle Working Group helped to put together to educate land managers and consumers to understand what the categories are of e-bikes and e-motos, and where they can typically be ridden. You can find the "Identification Guide" here.

Additionally, we've created model legislation for Out-of-Class Electric Vehicles, which strictly regulate producers of products that claim to be electric bicycles but that exceed power and speed capabilities set by state and federal laws.

PeopleForBikes EMTB on State Lands Model Legislation

PeopleForBikes has created model legislation to address access for eMTBs on State Lands, which can be found here.

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.

peopleforbikes
P.O. BOX 2359 BOULDER, CO 80306
PeopleForBikes.org | 303.449.4893

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.