

Electric Mountain Bikes

CO State Trails Committee Meeting

April 7, 2023



peopleforbikes

PRESENTER



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A photograph of two cyclists riding their mountain bikes through a grassy field. The image has a strong blue color cast. The cyclists are positioned in the lower half of the frame, moving from left to right. The background consists of rolling hills and sparse vegetation under a clear sky.

WHO IS PEOPLEFORBIKES?

WHO WE ARE

We are the national trade association that represents over 320 member companies that manufacture and distribute bicycles (including electric bicycles). We are additionally the national advocacy group that represents more than 1.5 million Americans who support bicycling.

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 our planet.

A person wearing a helmet and a backpack is riding a mountain bike on a dirt trail. The rider is leaning forward, and the bike is tilted as if navigating a turn or a bump. The background shows a hilly, scrubby landscape under a clear sky. The entire image has a blue color cast. Overlaid on the center of the image is the text "WHAT IS AN ELECTRIC MOUNTAIN BIKE?" in a bold, white, sans-serif font.

WHAT IS AN ELECTRIC MOUNTAIN BIKE?

E-BIKE COMPONENTS

COMPUTER

BATTERY

MOTOR

E-BIKE CLASSES:

Class 1: pedal assist, max assisted speed of 20mph

Class 2: throttle assist, max assisted speed of 20mph

Class 3: pedal assist, max assisted speed of 28mph

Maximum wattage 750w



peopleforbikes



A blue-tinted photograph of a forest. The trees are tall and thin, with bare branches. In the lower right, a person is riding a bicycle on a path. The overall mood is serene and quiet.

CURRENT DEMOGRAPHICS AND SALES

DEMOGRAPHICS

- Electric bicycle consumers generally older than average population although trends point toward increasing age diversity
- Above average education and income
- Most common motivation behind electric bicycle purchases are fitness & transportation
- Most electric bicycle consumers report improved health, lower transportation costs and increased fun

SALES

- Electric bicycles are the fastest growing category of bicycle sales in the U.S.
- Nearly all major bicycle manufacturers have introduced electric bicycles in various categories
- 2022 estimated volume of about 1.25M bicycles sold in the US through all channels (over 5 million sold in Europe)
- U.S. dealers saw a 55% increase in electric bicycle volume sales in 2021 vs 2020 and a 25% increase in 2022 vs 2021 (Source: Circana)

A blue-tinted photograph of a forest. In the foreground, a dirt path curves to the right. A cyclist is riding a mountain bike on the path, moving away from the viewer. The forest is dense with tall, thin trees. The overall scene is monochromatic with a strong blue hue.

MODEL THREE-CLASS LEGISLATION

THREE-CLASS SYSTEM

- Class 1: Pedal assist, max. assisted speed 20 mph
- Class 2: Throttle assist, max. assisted speed 20 mph
- Class 3: Pedal assist, maximum assisted speed 28 mph

- Electric bicycles are regulated at the:
 - Federal level for product safety standards and use of federal funding
 - State and local level for the use of electric bicycles on streets and bikes paths
 - Federal, state, and local level authorities regulate the use of electric bicycles on public lands/trails

STATE ELECTRIC BICYCLE LAWS

- States regulate the use of electric bicycles on streets and bikes paths, and determine issues such as licensing and registration.
- PeopleForBikes created harmonized standards for state electric bicycle regulation using the three classes.
- Currently:
 - 48 states regulate electric bicycles like bicycles, of which 40 have defined the three classes (including CO).
 - 2 others have no electric bicycle definition, and require licensing, registration and/or insurance.
 - Alaska and Rhode Island

CO ELECTRIC BICYCLE LAWS

- Colorado designates the three classes of e-bikes (*Section 42-1-102 (28.5), C.R.S.*)
- E-bikes are regulated like bicycles: same rules apply to both e-bikes and human-powered bicycles
 - E-bikes are not subject to the registration, licensing, or insurance requirements that apply to motor vehicles
- Class 1 and Class 2 e-bikes are allowed on the same bicycle and pedestrian paths as conventional bicycles
- Class 3 e-bikes may not be on a bicycle or pedestrian path unless the path is within a street or highway or permitted by local jurisdiction. Local governments may prohibit the operation of e-bikes on any path under its jurisdiction.

A person wearing a helmet and a backpack is riding an electric mountain bike on a dirt trail. The rider is leaning forward, and the bike is tilted slightly. The background shows a hilly, scrubby landscape under a clear sky. The entire image has a blue color cast. Overlaid on the image is the text "ELECTRIC MOUNTAIN BIKE RULES ON TRAILS" in a bold, white, sans-serif font, centered horizontally and split into two lines.

ELECTRIC MOUNTAIN BIKE RULES ON TRAILS

FEDERAL REGULATIONS

- March 2022: USFS finalized guidance on management of electric bicycle use on National Forest System lands:
 - Manages electric bicycles as “motor vehicles”
 - Adopts the three class system
 - Process for recategorizing trails from nonmotorized to motorized to allow eMTB access:
 - Creates a new type of motorized trail designation and incorporated into Motor Vehicle Use Map – “Trails open to electric bicycles only.” Trails could be specified to be open for only specific classes.
 - USFS must consider emerging technologies like electric bicycles.

FEDERAL REGULATIONS (CONT.)

- National Park Service, Bureau of Land Management, U.S. Fish and Wildlife Service and Bureau of Reclamation:
 - Adopted the three class system, in line with many state laws.
 - Pedal-assist electric bicycles considered a non-motorized use unless the rider is using the throttle alone to power the bicycle for an extended period of time.
 - Electric bicycle riders are subject to the same duties and have the same rights as riders of traditional bicycles.
 - Regulations do not state specific areas that will be closed or open to electric bicycle use, but authorize local land managers to designate non-motorized areas that will be open to electric bicycles, or a specific class.

STATE PARK eMTB POLICIES

- Variable: agencies are beginning to address e-bikes and reviewing their current rules + considering new policies.
- 14 state parks (and growing) allow at least Class 1 eMTBs on non-motorized trails:
 - Arkansas, Colorado, Florida, Idaho, Kansas, Louisiana, Minnesota, North Carolina, Utah, Pennsylvania, Virginia, Washington, West Virginia, and Wyoming (Arizona: only designated trails)
- Class 1 and 2 electric bicycles are allowed in all 42 Colorado State Parks where bicycles are permitted. Local governments have the authority to restrict the use of e-bikes on bike paths.

A blue-tinted photograph of a forest. The trees are tall and thin, with bare branches. In the lower right corner, a person is riding a bicycle on a path. The overall mood is serene and quiet.

STUDIES & CURRENT RESEARCH

VT eMTB PILOT PROJECT

- In 2022, the Center for Rural Studies at the University of Vermont, in collaboration with PeopleForBikes and the local mountain bike and multi-use trails organization- Fellowship of the Wheel, conducted a pilot study on the use of Class 1 pedal-assist eMTBs on natural surface singletrack trails on Hinesburg Town Forest in Vermont.
- The goal of the pilot was to study and develop knowledge around:
 - User perceptions and perceived impacts that Class 1 eMTBs have on physical trail conditions compared to analog MTBs
 - Potential trail user impacts related to the introduction of eMTBs on non-motorized, multiuse trails
 - Considerations for initiating education outreach opportunities about eMTBs
 - Diversity and inclusion implications

eMTB PILOT PROJECT (CONT)

- During the Vermont eMTB Pilot Program study:
 - Trail users were allowed to use eMTBs on designated trails where analog bikes are already allowed
 - The survey instrument component included an statewide pre-implementation online survey, trailhead intercept surveys, and in-person focus groups
 - Data was collected related to **Trail Etiquette, Overcrowding, Safety, Trail Impacts, and Accessibility**
 - The public outreach included education on Class 1 eMTBs during demo days on the trail system
- This Pilot Program creates a blueprint for local and regional groups to utilize in their decision making process

KEY FINDING

This study provided important insight into perceptions of eMTB usage in Vermont.

Overall, perceptions of eMTB usage were more positive than negative and indicated a general willingness and even motivation to enable further integration of eMTBs into the sport.

The full report will be announced at the end of April 2023.

TAHOE NATIONAL FOREST

- In May 2021, Tahoe National Forest (TNF) completed an Environmental Assessment (EA) for the East Zone Connectivity Project.
- The TNF issued a decision and a Finding of No Significant Impact (FONSI).
- The decision from the EA expanded access for Class 1 electric bicycles on 35 additional miles of trails in TNF.

TAHOE NATIONAL FOREST

- Findings from the Tahoe National Forest EA included:
 - Class 1 eMTBs have similar components, speed, impacts on the trail, and health benefits compared to analog MTBs
 - Allowing Class 1 eMTBs on trails that are currently open to MTBers, will not measurably alter current patterns of use, or create additional displacement of other user groups that currently recreate on those trails.

TAHOE NATIONAL FOREST: SPEED

- Results showed that the average speed was similar between eMTBs and their analog counterparts on flat and downhill sections of trail.
- On uphill sections, eMTBs were able to achieve higher speeds (8 - 13 mph) than analog mountain bikes (5 – 8 mph) over the same sections.
- This range of differences in speed can be observed between novice and expert riders, therefore speed is largely determined by rider skill and trail design.
- TNF determined this does NOT represent a significantly increased safety risk to other user groups relative to the current level of use already occurring by other MTBers.

GREAT SMOKY MOUNTAINS NP

- The National Park Service prepared an environmental assessment to examine alternatives and environmental impacts associated with a proposed 12-mile mountain bike trail system within the Wears Valley portion of the Great Smoky Mountains National Park
- The NPS issued a decision and FONSI for the Wears Valley Mountain Bike Trail System EA
- Their decision will open access for mountain bikes and Class 1 & 2 e-bikes on 12 miles of bicycle-optimized trails in GSMNP (one of only three NP to allow mountain bike access)

OTHER RESEARCH

- The Federal Highway Administration (FHWA) conducted a research project called, "[The Future of E-Bikes on Public Lands: How to Effectively Manage a Growing Trend.](#)"
- Key Results include:
 - One primary study was conducted on e-bike impacts on natural surface trails, which demonstrated no significant difference in soil displacement between eMTBs and conventional mountain bikes.
 - Research on conventional bike impacts shows that their presence can disturb wildlife and impact ecosystems but less than other activities; e-bike impacts are expected to be similar but limited research is available.
 - E-bikes may serve as an effective alternative to motor vehicles and reduce tailpipe emissions; installing charging stations in public lands could power e-bikes using renewable energy sources.

GENERAL FINDINGS

- **Detection:** Users frequently cannot tell whether they have seen an analog bicycle rider or electric bicycle rider.
- **Environmental:** eMTBs have been shown to have similar impacts to natural surface trails as analog mountain bikes
- **Speed:** largely determined by the rider skill level than the type of bike the user is riding (novice vs expert rider)
- **Social:** More complex decisions should be made on a local trail-by-trail basis by land managers and stakeholders, using pilot projects and demo events

ADDITIONAL RESOURCES

PeopleForBikes offers comprehensive information on eMTBs, including:

- Trail & Policy research
- Industry Expertise
- Federal Legislation
- Advocate and Land Manager resources

[Peopleforbikes.org](https://peopleforbikes.org)

A photograph of two people riding bicycles on a dirt trail in a natural, hilly setting. The image is overlaid with a blue tint. The text "THANK YOU" is centered over the image in a large, white, sans-serif font.

THANK YOU

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