



**MICHIGAN MOUNTAIN BIKING ASSOCIATION (MMBA)
POSITION PAPER ON E-BIKE USE ON MICHIGAN NON-MOTORIZED TRAILS AND PATHWAYS**

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INTRODUCTION TO ISSUE

The Emergence of E-Bikes

An electric bicycle, also known as an e-bike, is a bicycle with an integrated electric motor which can be used for propulsion. There are a great variety of e-bikes available worldwide, from e-bikes that only have a small motor to assist the rider's pedal-power (i.e., pedelecs) to somewhat more powerful e-bikes which tend closer to moped-style functionality. All, however, retain the ability to be pedaled by the rider and are therefore not considered electric motorcycles. E-bikes use rechargeable batteries and the lighter varieties can travel up to 16 to 20 mph, depending on the laws of the country in which they are sold, while the more high-powered varieties can often reach speeds in excess of 28 mph. In some markets, such as Germany, they are gaining in popularity and taking some market share away from conventional bicycles. While Asia and Europe were first to show substantial growth in e-bikes during the past several years, e-bikes sales are beginning to gain traction in the United States, with several large conventional U.S. based bicycle companies (i.e. Specialized, Trek, etc.) developing e-bikes for sale in their U.S. dealer networks. Per Bicycle Retailer and Industry News, e-bike segment sales are expected to grow at double digit pace in the next year.

As e-bikes are an emerging phenomena in the U.S., many State and local governments are having to expeditiously assess the nature of these vehicles, and how they fit in to existing transportation and recreational infrastructure – including their place on roadways, greenways and other motorized and non-motorized trail systems. The purpose of this paper is to render the position of the Michigan Mountain Biking Association (MMBA) regarding the use of e-bikes on the State of Michigan's non-motorized trail systems open to use by conventional mountain bikers.

Organizational Background

The MMBA is a non-profit corporation with a 26 year history of working as an advocate and steward for mountain biking in Michigan. The organization partners with various public and private land managers, as well as, other stakeholder groups to develop and maintain a variety of natural surface trail systems using best practices and standardized trail construction techniques. The organization also advocates for best practices regarding the social impacts and interactions of different trail user groups (i.e. bikers, hikers, equestrians, etc.). The MMBA is comprised of representatives from nearly a dozen Michigan-based Chapters of the International Mountain Biking Association (IMBA), a non-profit mountain bike advocacy group based in Boulder, Colorado. The positions in this paper were arrived at by the MMBA Advocacy Committee, and are supported by the MMBA Board of Directors.



THESIS/STATEMENT OF POSITION

After careful consideration of the issues surrounding the growth of e-bikes and their place on the State of Michigan's non-motorized trail systems, the MMBA has arrived at a position that is most succinctly described by the phrase, "Keep Non-Motorized Trails Non-Motorized." In other words, we believe that if a trail system is designated as non-motorized, that e-bikes should not be allowed access to that trail system due to the fact that they are a form of motorized propulsion.

PRESENTATION OF COUNTER ARGUMENTS

During the construction of our position, the MMBA analyzed and assessed the following counter arguments for inclusion of e-bikes as an accepted user group on Michigan's non-motorized trails.

Argument 1: E-bikes provide a level of propulsion assistance to users with physical challenges and disabilities, allowing them to enjoy an activity in which they would be otherwise incapable of participating.

Argument 2: E-bikes are not traditional motor vehicles, as they are not dependent on gasoline, have no emissions and require some level of pedaling in order to be propelled forward (i.e. pedal assist).

Argument 3: E-bikes are more closely identified with traditional, non-motorized pedal bicycles than traditional motorcycles, and thus would have similar social and environmental impacts to that of a traditional pedal bike.

Argument 4: Due to their motor-assist, e-bikes require less physical work by the user. This would allow more able-bodied individuals to experience Michigan's trails by lowering the level of physical "barriers to participation".

Assessment of Counter Arguments/Derivation of Position

When assessing the validity of arguments for allowing e-bike access to and use of our State's non-motorized trails systems, it is important to not only assess the benefits of each argument, but to also assess the associated costs as well. As such, this is the approach the MMBA has taken to the assessment of each argument affirming e-bikes as a positive use on Michigan's non-motorized trails.

Perhaps the most frequent and pervasive argument our organization has heard in support of allowing e-bikes on non-motorized trail systems, is that doing so would allow users with physical challenges and disabilities to access these trails. We believe this argument is really non-sequitur, as the State of Michigan already has laws and land rules regarding use of electric personal mobility assist devices (PAMDs) on non-motorized trails for those with mobility impairment. We do not support any additional deviations or alterations from current State laws and rules, as we believe they effectively address PAMD use by those with mobility issues in achieving equitable access. It is important to point out that, per



MDNR Recreation Policy # 7.21, only those individuals who have a disability requiring the use of a wheelchair or PAMD may use a PAMD “anywhere where a pedestrian may travel”, but must do so at “pedestrian speed”. Specific studies have found pedestrian walking speeds typically range from 2.80 mph to 2.95 mph for older individuals and from 3.31 mph to 3.37 mph for younger individuals; with a brisk walking speed approaching around 4.0 mph. Champion racewalkers are noted as averaging speeds just over 8 mph. Modern e-bikes would not fall into the category of PAMDs allowable under MDNR guidelines, as they are designed to operate well-in-excess of “pedestrian speed”.

As noted above, it is also pointed out that e-bikes are not traditional motor vehicles as they are not dependent on gasoline, have no emissions and require some level of pedaling in order to be propelled forward (i.e. pedal assist). While it is true that e-bikes are an emerging class of vehicle that does not have a deep history, this does not mean that they are any less a motor vehicle. Battery technologies have undergone significant progression in recent years, allowing them to power motors at levels previously unknown. The Toyota Prius and Chevy Volt, BMW i8 and Tesla model cars are all fully battery powered, yet they are no less of a car for this fact. They aren’t referred to as something other than a car due to the fact that they are electric-powered rather than gas-powered. The implication that the fact that many e-bikes are motor-assisted rather than fully motor dependent is also a red herring argument utilized to support their inclusion on non-motorized trails. They still have a motor, and the motor renders the vehicle capable of attaining higher speeds and torque than that of a human powered bicycle. This fact matters. It matters because the traditional rationale for establishing non-motorized trail system separation from motorized trail systems is because non-motorized users have differing experiential values. They seek to commune with nature under their own power and to escape the entrapments of the man-made infrastructure so pervasive in everyday life. To shift the paradigm of this traditional division to a place where motorized users coexist with non-motorized users in a natural setting is typically only done on two types of trail systems in the U.S.: 1.) Trails in mountainous and plains regions of the Western U.S. where the tread traverses the “Big Wide Open” with clear sight lines and more dispersed user density, and 2.) Linear greenway systems which, again, have a common element of having clear, unencumbered sight lines with terrain that often passes through less backcountry and more agrarian and urban environments. The experiential values of users in these types of trail settings are much different than those users of twisty, undulating single-track trails which weave their way through Michigan’s densely forested glacial ridges. On these types of single-track trails, sight lines are short, and terrain is more technical as a result of a narrower trail tread which is often full of roots and rocks. The higher average speeds of motorized users are typically cited as one of the primary reasons experiential values are not compatible with those of non-motorized trail users. Whether or not a traditional bike shares the commonality of having pedals on it with an e-bike, the fact remains that e-bikes are capable of maintaining much higher average speeds than that of a traditional bicycle.

The potential power range and output of e-bikes is varied, yet non-evident upon anything other than a detailed mechanical examination. Every day brings new advances in battery technology, and the watt



output, torque and battery life of e-bikes are advancing at a near exponential pace. With these advances come more potential for speed and acceleration. There have been many recent attempts to classify e-Bikes based on power output, top speed and mechanical configuration. However, that these attributes are not evident upon inspection make any potential enforcement by trail law enforcement and park rangers near impossible. If a ranger suspects an e-bike operating on a trail is of a “higher classification” than allowed, how can this be readily ascertained? Will trail rangers be equipped with mobile dynamometers and stand at the ready to perform a mechanic’s diagnostic assessment of motor output at the drop of a hat? Enforcing trail use by mechanical classification in the field is impossible.

If the potential range of e-bikes is varied, its user base stands to be equally varied. Undoubtedly, there will be e-bike users who seek nothing other than a slight boost of a motor to “help them along” the trail. However, will they have the intestinal fortitude to self-govern the top-end capacity of their e-bike despite the fact that it is a click away? Traditional mountain bikers are limited by the level of exertion necessary for self-propulsion over varied terrain. While speed varies with terrain, ability and physical fitness, it should be pointed out that the Men’s Gold Medalist at the 2016 Rio Summer Olympic games averaged 13.7 mph. Quite obviously, this level of speed is going to be well-in-excess of the “meat of the bell curve” that represents most recreational mountain bikers. Indeed, the average speed of most recreational mountain bikers is thought to be in the mid-single digits. Many modern pedal assist e-bikes are capable of producing speeds approaching 30 mph inclusive of many of the battery producers such as Bosch putting output limiters on the battery-motor units. As it is with cell phones, it is now becoming popular among e-bike enthusiasts to “hack” the firmware on these units to lift the limiter on an e-bike’s power. As technology advances, one can only assume e-bike batteries and motors, much like Olympians, will progress toward that which is “faster, higher and stronger”.

CONCLUSION

E-bikes are a rapidly growing segment of the motorized vehicle market. They have great promise as transportation solutions, and as a form of motorized recreation. However, as they are motorized, de facto, they have no place on trails designated as non-motorized use only. One can call an apple an orange, but self-deception and changes in nomenclature will not change the inherent qualities making it an apple. Considering a motorized vehicle as not that much of a motorized vehicle when it contains all the inherent definitions of a motorized vehicle is an analogous form of deception.

There is currently a place for e-bikes on Michigan’s roadways as defined by the Michigan Department of Transportation. There is also currently a place for e-bikes on State of Michigan owned public lands – on any one of the routes comprising the plentiful network of motorized ORV/ATV trails for which our State is renowned. The place for e-bikes on Michigan’s other trails and pathways must be ascertained first by classifying, from the bottom-up, whether or not a trail should truly be classed as non-motorized, or, if the trail’s characteristics are such that it can accommodate the social and environmental impacts of motorized use. Such reclassification should involve the typical level of public comment and vetting



done with other management aspects of our public lands. However, any attempt to force place E-bikes into a top-down categorization in which they don't belong brings with it the potential for negative experiences for other non-motorized trail users, as well as, potential access consequences for traditional mountain bikers. The MMBA has spent over two and a half decades earning the trust of not only land managers, but also other non-motorized trail stakeholders. To squander the level of goodwill our organization has built up as a result of the inevitable misrepresentation of traditional mountain biker experiential values due to the propagation of "mistaken identity" caused by the wolf in sheep's clothing that is the e-bike on non-motorized trails would be tragic indeed.