

COLORADO PARKS AND WILDLIFE DIVISION

Electric Assist Bicycles
TOPIC

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PREPARED BY

July 7, 2016
DATE

 ACTION
 ITEM

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PURPOSE:

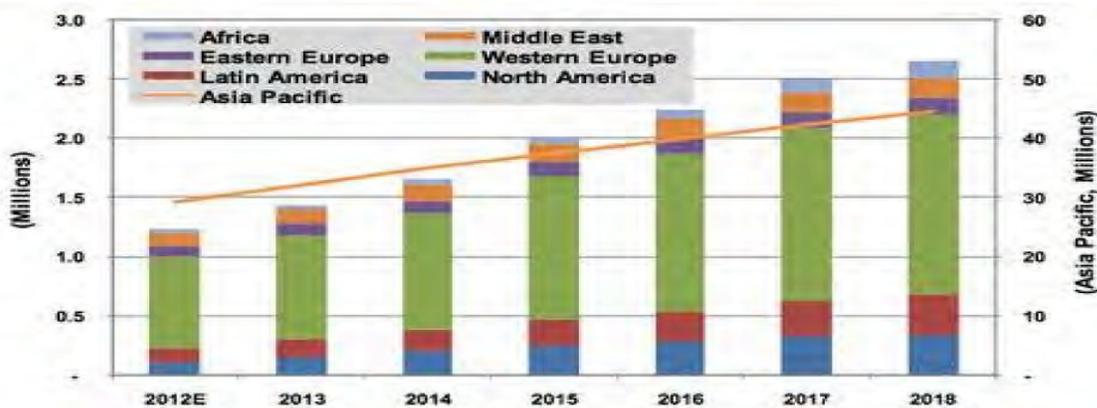
To initiate a discussion with the State Recreational Trails Committee (the Committee) regarding the use of electric assist bicycles (E-bikes) on trails in Colorado with the intent of coordinating with federal, state and local partners in the adoption of a statewide policy on the issue.

BACKGROUND INFORMATION:

The Committee initially discussed e-bikes and their use in Colorado at the Committee’s December, 2014 meeting. The following information was presented.

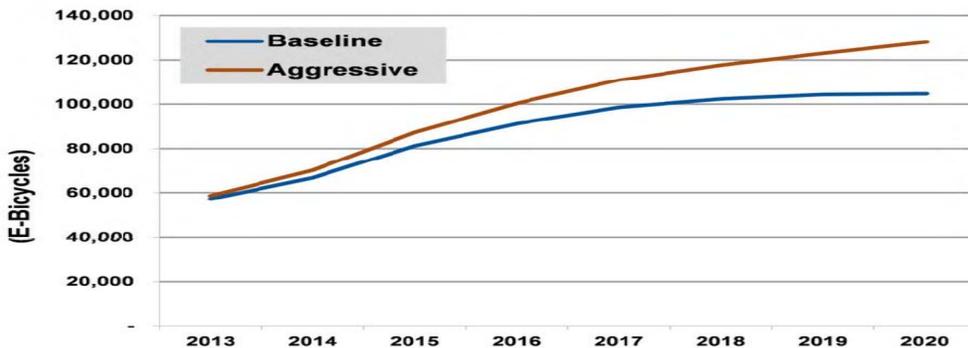
Electric bike sales have increased dramatically in Europe, Latin America and in Asia over the past several years.

Electric Bicycle Sales by Region, World Markets: 2012-2018



Projected growth of E-bikes in the United State is expected to double in the next several years.

Projected US Growth



Source: Navigant/Pike Research

DISCUSSION AND SUMMARY:

E-bikes have emerged in Colorado. Colorado House Bill 09-1026 (attached) redefined low-powered scooters as motor vehicles while electric assisted bicycles and electric personal assistive mobility devices were reclassified not to be defined as motor vehicles. This bill exempted electric assisted bicycles from vehicle registration requirements, the bill also allowed local authorities to regulate the use of electric assisted bicycles on a bike or pedestrian paths (CRS 42-4-111(dd)).

Colorado's Revised Statutes (CRS 42-1-102 (28.5)) defines an E-bike as **"Electrical assisted bicycle" means a vehicle having two tandem wheels or two parallel wheels and one forward wheel, fully operable pedals, an electric motor not exceeding seven hundred fifty watts of power, and a top motor-powered speed of twenty miles per hour.**

According to industry experts, early iterations of E-Bikes started in the U.S. in the late 1990's and also about the same time in Europe and Japan. It was not until battery technology improved that E-Bikes really began taking hold, around 2004 or 2005. The U.S. market did not accept the higher price points initially like countries where bikes are commonly used for transportation (Netherlands, Japan), but within the last few years, they have begun to grow in popularity in the U.S. as the market begins to approach mainstream.

Traditionally E- Bikes have been like motorcycles, where a twist of the grip turned on the motor to power a bicycle. However, a growing trend in how E-Bikes provide power is "pedal electric assist," also called "pedelec," where power is provided only when the bike is pedaled. A rider must pedal the bike for the electric motor to kick in. When pedaling is stopped, the electric motor is turned off. Pedelec systems are designed to provide a little help while pedaling, so it stills feels like riding a bike, but the rider gets a little help up the hills, or makes it so people can ride to work without breaking a sweat, and still get some exercise. Pedelec E-Bikes typically allow the rider to choose how much assistance they want up to the U.S. mandated top motor powered speed of 20 mph on level ground. Pedelec motors also have multiple sensors that monitor the speed of the bike, the motor and cadence of the rider, taking readings of those variables about 1,000 times per second, to determine how much power assist to provide in any given moment. These monitoring systems act much like traction control in a car. E-Bikes are now either exclusively pedelec, or using a combination of throttle and pedal assist.

U.S. public law 107-319 defines a "low-speed electric bicycle"(LSEB) to have a maximum motor powered speed of 20 MPH with a 170 lb rider on a paved level surface. This law does allow the rider to add human power to make the bike go faster than 20 mph on a paved level surface. This is why some models that are pedal-assist only, can get up to speeds of about 28 mph, if the rider is riding like you might ride a normal bike and applies enough human power to take the speed above 20 mph. How long a battery lasts depends on how much power is being used. On a flat terrain ride, that doesn't require a lot of power, on lower assist settings a battery could last for 60 to 90 miles or more. On a hilly mountain bike ride, that requires lots of power, a battery could last 30 to 40 miles.

The Bicycle Products Suppliers Association (BPSA) has begun to promote E-bike use and access in the United States. To that end, BPSA has formed an industry E-bike committee to manage E-Bike growth, to establish industry wide safety requirements, and to work with national and local government and advocacy groups on legal/legislative issues.

One of the BPSA E-Bike committee's priorities is to create three classifications of electric bicycle types for purposes of helping federal, state, local, and private land managers to define and pass new regulations on where E-Bikes (road and mountain E-Bikes) can be used, in addition to any state legislation. The three classifications the committee is considering are as follows:

Class 1 – Pedal assist electric bicycle with a top assisted speed of 20 MPH (32 KPH) on paved level ground.

Class 2 – Throttle assist electric bicycle with a top assisted speed of 20 MPH (32 KPH) on paved level ground.

Class 3 – Pedal assist electric bicycle with a top assisted speed of 28 MPH (45 KPH) on paved level ground. This class complies with the LSEB regulations because under motor power exclusively will not exceed the 20 MPH limit but continues to assist when human power is blended with the motor power to enable the bike go faster.

BPSA's proposed use restrictions under consideration for the different classifications are as follows:

Class 1 – Anywhere a normal bicycle may be ridden including multi-use bicycle paths and off-road trails.

Class 2 – Any paved bicycle infrastructure, including multi-use bicycle paths where normal bicycle may be ridden.

Class 3 – Any street or roadway where a normal bicycle may be ridden including bike lanes that are adjacent to a roadway.

Over the past year the City of Boulder has conducted an E-bike Pilot Project. The project included amending the City's definition of what an E-bike is, conducted tests with the use of E-bikes on their multiple use trails. During this pilot program Boulder did not allow E-bikes on city sidewalks or on their Open Space Mountain Park Trails.

To implement this pilot program the city adopted ordinance 7491. The ordinance set forth a number of goals and questions to be addressed by the program. In this rule making Boulder adopted the state definition of an electric assisted bicycle which removed E-bikes from the category of motor vehicles with state law and in Boulder's local ordinances.

Boulder's pilot study was conducted from February, 2014 to October, 2014. In October the program was to sunset in accordance with the ordinance. During that period of observation and data collection no conflicts with E-bikes were reported. However, only two E-bikes were observed in operation within the City of Boulder. On October 13, 2014 the Boulder City Council voted to remove the sunset provision of the ordinance which permanently permits the use of E-bikes, as defined by Colorado's Revised Statutes, to access certain hard surfaced multi-use paths in Boulder excluding multiuse paths on Boulder's Open Space and Mountain Park managed lands (ordinance attached).

The potential benefits of E-bike use in urban and suburban environments are numerous:

- E-bikes promote bicycle commuting over longer distances
- Allows bicycle commuters to ride to work without the exertion associated with a standard pedal bicycles.
- Promotes bicycle riding amongst persons who might not otherwise ride a traditional bicycle (e.g., women, the elderly or persons with physical limitations).
- Promotes bicycling in hilly areas (Colorado?).
- Promotes bicycling to shop or haul items to and from destinations.

Recently the following question was submitted through the Colorado Parks and Wildlife web site: ***“Would electric assist mountain bike be legal on no vehicle trails?”***

Our initial response to the question was as follows:

In response to your question, the Trails Program currently would view electric mountain bikes as the same type of device as an electric trail motorcycle. The Colorado trail rules for an electric trail motorcycle would require the motorcycle to have an OHV sticker and would limit its use to designated OHVs where motorcycle access is permitted.

The use of electric assist bicycles is something that will be discussed further by the State Recreational Trails Committee. Until a clearer set of regulations comes about, electric assist bicycles will be seen as electric trail motorcycles.

Residents are required to register OHVs which can be done here or at our Littleton office located at 13787 S.Hwy. 85, Littleton, Colorado 80125.

DIVISION RECOMMENDATION:

This information item is intended to revisit the December, 2014 discussion of the use and access of E-bikes to Colorado’s public lands trails system. Our goal might the adoption of a “white paper policy” that would assist in shaping policies throughout the state of Colorado that may be adopted by our federal, state and local trail managers.

No recommendation necessary, information item only.

SUGGESTED MOTION:

No action necessary at this time.

APPROVED FOR SUBMITTAL TO THE STATE TRAILS RECREATIONAL COMMITTEE

July 7, 2016
DATE

Attachments

CA Governor authorizes modern E-bike Regulations

A Comparison of Environmental Impacts from Mntn Bikes, Class I E-bikes and Motorcycles