

E-bike notes for February 15:

At the federal level, a 2002 law enacted by Congress, [HB 727](#), amended the Consumer Product Safety Commission definition of e-bikes. The law defined a low-speed electric bicycle as "A two- or three-wheeled vehicle with fully operable pedals and an electric motor of less than 750 watts (1 h.p.), whose 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." The federal law permits e-bikes to be powered by the motor alone (a "throttle-assist" e-bike), or by a combination of motor and human power (a "pedal-assist" e-bike).

Note: The Consumer Product Safety Commission has clarified that the federal law does allow e-bikes to travel faster than 20 mph when using a combination of human and motor power.

[Pennsylvania State Law](#)

"Pedalcycle." A vehicle propelled solely by human-powered pedals **or a pedalcycle with electric assist**. The term does not mean a three-wheeled human-powered pedal-driven vehicle with a main driving wheel 20 inches in diameter or under and primarily designed for children six years of age or younger.

"Pedalcycle with electric assist." A vehicle weighing not more than 100 pounds with two or three wheels more than 11 inches in diameter, manufactured or assembled with an electric motor system rated at not more than 750 watts and equipped with operable pedals and capable of a speed not more than 20 miles per hour on a level surface when powered by the motor source only. The term does not include a device specifically designed for use by persons with disabilities.

No person under 16 years of age shall operate a pedalcycle with electric assist.

<https://www.peopleforbikes.org/topics/electric-bikes>

[Model Electric Bicycle Law](#)

Model Electric Bicycle Law with Classes

Chapter 1 – Definitions

Section 101:

(1) “Electric bicycle” shall mean a bicycle equipped with fully operable pedals, a saddle or seat for the rider, 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” shall mean an electric 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.

(b) “Class 2 electric bicycle” shall mean an electric 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.

(c) “Class 3 electric bicycle” shall mean an electric 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.

****Electric bicycles may also need to be excluded from other definitions such as “motor vehicle” or “moped.” These determinations should be made on an individual basis based on the classifications in each state. See also section 202 (providing that electric bicycles are not motor vehicles).*

Chapter 2 – General rules for electric bicycles

Section 201 – rights and duties of electric bicycles:

Except as otherwise provided in this *[insert appropriate designation - article, chapter, etc.]*, an electric bicycle or an operator of an electric bicycle shall be afforded all the rights and privileges, and be subject to all of the duties, of a bicycle or the operator of a bicycle. An electric bicycle is a vehicle to the same extent as a bicycle.

Section 202 – insurance, licensing, and registration:

An electric bicycle or a person operating an electric bicycle is not subject to the provisions of this code relating to financial responsibility, driver’s licenses, registration, certificates of title, off-highway vehicles and license plates. An electric bicycle is not a motor vehicle.

Section 203 – labeling requirement:

On and after *[insert appropriate date – generally at least one calendar year after the new law takes effect]*, manufacturers and distributors of electric bicycles shall apply a label that is permanently affixed, in a prominent location, to each electric bicycle. The label shall contain the classification number, top assisted speed, and motor wattage of the electric bicycle, and shall be printed in Arial font in at least 9-point type.

Section 204 – tampering restriction:

A person shall not tamper with or modify an electric bicycle so as to change the motor-powered speed capability or engagement of an electric bicycle, the label indicating the classification required in section 203 is replaced after modification.

Section 205 – CPSC compliance:

An electric bicycle shall comply with the equipment and manufacturing requirements for bicycles adopted by the United States Consumer Product Safety Commission (16 C.F.R. part 1512).

Section 206 – motor disengagement:

An electric bicycle shall operate in a manner so that the electric motor is disengaged or ceases to function when the rider stops pedaling or when the brakes are applied.

Section 207 – infrastructure use by electric bicycles:

- (a) An electric bicycle may be ridden in places where bicycles are allowed, including but not limited to, streets, highways, roads, bicycle lanes, and bicycle or multi-use paths *[use appropriate state specific language to describe improved bike paths and related infrastructure; omit language that can be interpreted as trails open to mountain bikers]*.
- (b) Following notice and a public hearing, a municipality, local authority or state agency having jurisdiction over a bicycle or multi-use path may prohibit the operation of a class 1 electric bicycle or class 2 electric bicycle on that path, if it finds that such a restriction is needed for safety reasons or compliance with other laws or legal obligations.
- (c) A municipality, local authority or state agency having jurisdiction over a bicycle or multi-use path may prohibit the operation of a class 3 electric bicycle on that path.
- (d) This section shall not apply to a trail that is specifically designated as nonmotorized and that has a natural surface tread that is made by clearing and grading the native soil with no added surfacing materials. A local authority or agency of the state having jurisdiction over a trail described in this subsection may regulate the use of an electric bicycle on that trail.

Chapter 3 – Additional regulation of class 3 electric bicycles

Section 301 – age restriction:

No person under the age of sixteen (16) may operate a class 3 electric bicycle. A person under the age of sixteen (16) may ride as a passenger on a class 3 electric bicycle that is designed to accommodate passengers.

Section 302 – helmet requirement:

All operators and passengers of class 3 electric bicycles shall wear a properly fitted and fastened bicycle helmet that meets the standards provided by either the United States Consumer Product Safety Commission or the American Society for Testing and Materials, or standards subsequently established by those entities.

****State-specific analysis should be performed to examine whether any additional provisions are needed to accommodate whether failing to wear a helmet constitutes negligence/assumption of risk or could otherwise limit recovery in the instance of a collision with other road users or motor vehicles.*

Section 303 – speedometer requirement:

All class 3 electric bicycles must be equipped with a speedometer that displays the speed the bicycle is traveling in miles per hour.

[Is my e-Bike legal in Pennsylvania?](#)

Is my e-Bike legal in Pennsylvania?

The short answer is yes, Electric Assist Bicycles (e-Bikes) are legal and welcome in the Commonwealth of Pennsylvania. By reducing barriers to bicycling, e-Bikes can encourage people to take bike trips and to ride longer than on regular bikes. Because they're easier to ride, they're ideal for older adults and people with physical limitations. However, they cannot be operated by persons under 16 years of age. To operate on public roadways in Pennsylvania, an e-Bike must meet these criteria as adopted in PA Act 154 of 2014:

- ***Weigh less than 100 pounds***
- ***Be equipped with two or three wheels at least 11 inches in diameter, as well as operable pedals***
- ***Be powered by an electric motor system rated at not more than 750 watts***
- ***Be capable of speeds not more than 20 miles per hour on a level surface when powered by the motor source only***

Moreover, e-Bikes:

- Do not require a certificate of inspection or insurance
- Are afforded all of the rights and responsibilities of other bicycles under PA law
- Are allowed to operate on the Centre Region's Shared Use Paths

For more information about bicycling in the Centre Region, please contact Trish Meek at the Centre Regional Planning Agency or visit www.crcog.net/bikes



Centre Regional Planning Agency
2643 Gateway Drive, Suite 4
State College, PA 16801
814-231-3050



Other Resources:

[PENNSYLVANIA BICYCLE DRIVER'S MANUAL](#)

[Doylestown Borough – Bicycle Regulations](#)

No person shall ride a bicycle upon any sidewalk in the Borough of Doylestown.

No person shall ride a bicycle in any street, alley or public place in the Borough of Doylestown unless there shall be attached thereto a bell or other device capable of giving a signal audible for at least 100 feet

No person shall ride a bicycle upon any of the streets, alleys or public places in the Borough of Doylestown, with both hands off the handlebars

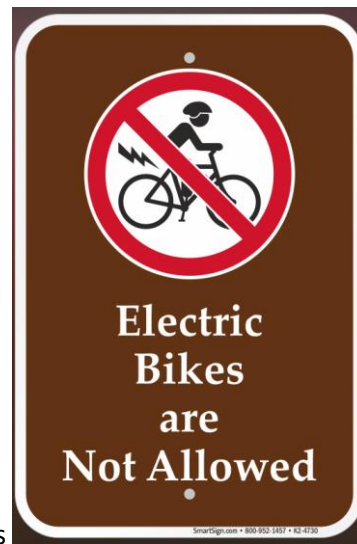
Any person, firm or corporation who shall violate any provision of this Part 1 shall, upon conviction thereof, be sentenced to pay a fine of not more than \$300; and/or to imprisonment for a term not to exceed 90 days.

[Doylestown Township – Trail Etiquette](#)

- All trail users should use the right side of the trail
- Bicycle riders should ride single file on the right side of the trail
- Bicycle riders should pass walkers, joggers, and slower riders on the left when the trail is clear of oncoming trail users
- Passing bicycle riders should announce their presence and intent to pass with “passing on your left” or similar phrase
- Do not leave your bicycle parked or lying on the trail surface
- Never park or lay your bicycle on a bridge
- Never park or lay your bicycle in or near a gate opening
- Wearing a helmet is recommended for all bicycle riders
- Children, 12 years old and under, are required by Pennsylvania state law to wear a helmet while riding on the trail or any other public roadway
- Bicyclists and trail users should take care to not startle horses along the trail and allow them to travel off of the trail surface

Comment: If we assert that “an electric bicycle or an operator of an electric bicycle shall be afforded all the rights and privileges, and be subject to all of the duties, of a bicycle or the operator of a bicycle. An electric bicycle is a vehicle to the same extent as a bicycle.”, then ‘trail etiquette’ is sufficient provided the electric bicycle in question conforms to all other ‘posted’ restrictions.

Signage



Does this equal this ?

SO, when sees 'NO MOTORIZED VEHICLES', are e-bikes with their electric motors allowed?

Answer: Maybe, when we define an e-bike as a 'bicycle', having a motor that is under 750w, has a maximum speed of 20 mph, and has operable pedals. Then the same rules of the road apply to both e-bikes and human-powered bicycles."

Better:



Class 1 & 2 electric bicycles allowed

doylestownpa.org/ebikes
for more information



In addition to effective signs, there need to be reasonable enforcement measures in place. Speed limit signs (20 mph is consistent with e-bike regulations, or slower where appropriate) are needed. However, other than stating clearly what's allowed, trail etiquette should prevail. It would be nice to see a subset of the online etiquette list posted at certain trail entry points if it's not already being done.

Management of electric bicycles on township and borough trails should not, nor do I think it needs to, be heavy-handed. In the last 500 miles of riding, I have not seen anyone abuse the trail system or misbehave in a way that would endanger other trail users. Adding effective signs is a good place to start in the event electric bicycle evolution becomes problematic (ex. younger riders going too fast on trails).

Not to mention:



Etc...

The DIY (Do It Yourself, aka Build It Yourself) E-Bike Conundrum

It's easy to go out and buy a DIY e-bike kit (rear, front, or mid-drive - doesn't matter for this discussion) and build an e-bike that is truly awesome. I know, I have three now. BUT at some point your amazing DIY e-bike is going to intersect with the reality of e-bike rules and regulations. Right now federal and state regulations are somewhat in harmony:

At the **federal level**, a 2002 law enacted by Congress, [HB 727](#), amended the Consumer Product Safety Commission definition of e-bikes. The law defined a low-speed electric bicycle as "A two- or three-wheeled vehicle with fully operable pedals and an electric motor of less than 750 watts (1 h.p.), whose 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." The federal law permits e-bikes to be powered by the motor alone (a "throttle-assist" e-bike), or by a combination of motor and human power (a "pedal-assist" e-bike).

At the **Pennsylvania state level** ([2014 Act 154](#)), "Pedalcycle with electric assist." A vehicle weighing not more than 100 pounds with two or three wheels more than 11 inches in diameter, manufactured or assembled with an electric motor system rated at not more than 750 watts and equipped with operable pedals and capable of a speed not more than 20 miles per hour on a level surface when powered by the motor source only.

In addition, e-bikes "do not require a certificate of inspection or insurance" and "are afforded ALL of the [rights and responsibilities](#) of other bicycles under PA law".

However, many DIY e-bike kits do exceed these limits. These kits are often configurable to dial the motor down to the legal limits (ex. 750w and 20mph), but the motors are capable of more. Given proper settings that are compliant with local regulations, would these e-bikes be considered 'legal'?