

E-VEHICLE MAINTENANCE & BATTERY SAFETY



E-micromobility vehicles, such as e-bikes and e-scooters, provide expanded opportunities for active transportation in Maryland beyond traditional walking and biking. E-bikes and e-scooters allow users to travel further than they would using traditional bicycles. The expanded use of e-micromobility vehicles raises the need for public education related to vehicle maintenance, including battery and fire safety.

Three Classes of e-Bikes



CLASS 1

20 MPH

Pedal-assist only

Motor provides assistance up to 20 mph



CLASS 2

20 MPH

Throttle and/or pedal-assist

Motor provides assistance up to 20 mph



CLASS 3

28 MPH

Pedal-assist only

Motor provides assistance up to 28 mph



E-MOTOS

>28 MPH

Throttle and/or pedal-assist

Motor with more than 750 watts or vehicles that travel faster than 28 mph

CLASS 2: 500W // 20MPH

a)

CLASS 2
500W // 20mph

b)

CLASS
2
500W
20mph

c)

CLASS
2
500W
20mph

Identifying E-Bike Class

Maryland law requires that e-bikes have a permanently attached label that identifies the e-bike class, top assisted speed, and motor wattage. The sticker is usually located on the bottom of the frame. If you cannot identify it on your bike on the seat tube, review the manufacturer's information or contact the manufacturer or seller.

Source: Example of Generic Class Label via peopleforbikes.org

Make Sure Your Bike and Battery are Certified!

When you shop for an e-bike, make sure the bike you buy has a Class 1-3 classification sticker and that your battery has a **UL 2849** sticker. These stickers ensure your bike will be road-legal in Maryland and that the bicycle's electrical system is safe. If you need a replacement battery pack, purchase a battery with **UL 2271** sticker and a Charger with a **UL 1310** sticker. Bicycles and batteries that meet these standards have passed rigorous testing for overcharging, extreme heat, and durability. When in doubt, contact a retail/repair shop qualified to work on e-bikes! **Look for the UL certification sticker!**



BUYER BEWARE!

Know your maintenance plan before you buy. Many e-bikes purchased online or from discount retailers can't be serviced at local bike shops.



Battery Safety

E-bikes and e-scooters are powered by lithium-ion batteries. Lithium-ion batteries that are damaged or improperly used or stored cause a risk for overheating, fire, or explosion. Fires caused by lithium-ion batteries burn extremely hot and give off toxic gases, raising the need to proper care and maintenance of these batteries.

- Purchase devices, batteries, or chargers that are UL certified.
- Find a qualified professional to repair electronic systems or batteries on your vehicle.
- Only use the battery and charger that came with the vehicle.
- Discontinue charging when the battery is fully charged.
- Only charge one battery at a time to avoid overloading the circuit.
- Store batteries at room temperature. Do not charge them at temperatures below 32° F or above 105° F.
- Do not store batteries in direct sunlight or hot vehicles and keep them away from children and liquids.
- Store e-bikes, e-scooters and their batteries away from exit doors or anything that can get hot and catch fire.
- If the battery becomes excessively hot, changes shape, or emits an odor, unplug it and stop using it immediately. Discontinue use of the battery and dispose of it properly.
- Do not leave charging batteries unattended or on the charger overnight.
- Do not store vehicles and their batteries away in the way of an exit or near anything flammable.

STOP using the e-bike or e-scooter if you notice any of the following:



Unusual Odor



Change in Color



Excessive Heat



Leaking



Smoking



Not Holding a Charge



Change in Shape

Maintenance Tips for E-Bikes

Before each ride, complete a quick **ABC** check:

- **A – Air:** Ensure tires are properly inflated.
- **B – Brakes:** Confirm brakes engage and stop the vehicle properly.
- **C – Chain/Components:** Check that moving parts and controls are functioning properly.

- When you need to replace parts, use e-bike replacement parts, including tires, brakes, and chain.
- Use a rag and gentle degreaser to clean your bike. Do not use high-pressure water on an e-bike or e-scooter, as this could damage the electrical system.
- When you clean your bike, inspect it. If you find loose wiring, take your e-bike to a bike shop for maintenance. Also check bolts to ensure they are tight.
- Find a qualified repair shop with licensed and insured mechanics.
 - **Do not attempt to maintain the motor systems, take your e-bike to a mechanic who is properly trained and insured to work on e-bikes.**
- Visit the Department of Natural Resources' **Outdoor Recreation Business Directory** to find an e-bike shop near you.



If you tamper with a speed governor or regulator, your vehicles is no longer street legal.



Do not dispose of batteries in the trash; they are considered hazardous waste.

Visit www.hungryforbatteries.org to find a drop-off location to recycle your battery.

