BILL'S HOME TECH
Home & Small Business Tech Solutions

BILL'S COMPLETE MANUALS

E-Bikes & E-Scooters

Classes, Ohio rules, safe charging, apps and upkeep — explained in plain English, one step at a time

A plain-English guide for riders, families and grandparents

Take your time — and ride at your own pace

Written for you by Bill — Bill's Home Tech

(330) 200-8042 · BillsHomeTech.com

For e-bikes, e-trikes & e-scooters in Ohio · facts current November 2026

What's Inside

This is your e-bike and e-scooter guide. Read it in any order and at your own pace — there is no test. Whether you're thinking about buying an electric bike, you already have one in the garage, or a grandchild just came home with an electric scooter, every chapter explains what something does *for you* and gives slow, step-by-step directions. It covers the three e-bike classes, Ohio's rules, safe charging, apps, locks and simple upkeep. Your own bike or scooter's owner's manual always has the final word on charging, speed settings, weight limits and maintenance for your model.

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PART 1

Getting to Know E-Bikes & E-Scooters

What an electric bike or scooter really is, how the motor helps you, and the few parts that matter most. Start here.

CHAPTER 1

A Note from Bill

Hello, and welcome. Maybe you've seen neighbors gliding up the hill on an electric bike and thought, "I could do that again." Maybe your knees aren't what they used to be, and a little push from a motor sounds like the difference between riding and not riding. Or maybe a grandchild just unwrapped an electric scooter and you'd like to know it's safe to charge in your house. Whichever brought you here, this guide is for **you**.

I'm Bill. Helping folks feel at home with their technology is what I do every day, and an e-bike is very much a piece of technology: a battery, a motor, a small computer and often a phone app, all bolted to a bicycle. I wrote this guide the way I'd explain it standing next to you in the garage — patiently, in plain English. If I use a word you don't know, I'll stop and explain it right then.

You can't break it by learning about it

Nothing in this guide asks you to take anything apart. Reading the display, trying the assist levels in an empty parking lot, pairing an app, writing down a serial number — none of that can hurt the bike. The one area where I'll ask you to slow down and follow the rules carefully is the **battery**. Lithium-ion batteries are safe when they're treated right, and Part 4 shows you exactly how.

WHAT THIS DOES FOR YOU

Why this matters

An e-bike or e-trike can give back something many people miss: easy rides to the park, the store or a friend's house, without arriving worn out. Knowing the rules, the right way to charge and a few simple checks lets you enjoy that freedom with confidence — and keeps your home safe, too.

What this guide covers

- What e-bikes and e-scooters are, and **pedal-assist** versus **throttle**.
- Ohio's **three e-bike classes**, where each may ride, and the helmet and age rules for Class 3.
- Ohio's rules for electric scooters, and why your city or park may have its own.
- Choosing a comfortable bike, trike or scooter — step-through frames, weight and balance.

- **Safe charging**, warning signs of a failing battery, winter storage and recycling.
- Companion phone apps, locks, registering your serial number, basic care and recalls.

STAY SAFE

Your owner's manual has the final word

Every e-bike and scooter is a little different. For charging, battery care, speed settings, weight limits and maintenance intervals, follow **your** model's owner's manual and the manufacturer's instructions. This guide gives you the general picture and the right questions to ask.

And I'm only a phone call away

If you get stuck — an app won't pair, you can't find the serial number, or you'd like a second opinion before buying — call me at **(330) 200-8042**. No question is too small.

So find a comfortable chair, and let's get to know these machines together.

— Bill

CHAPTER 2

What E-Bikes & E-Scooters Are

"E" simply means electric. An **e-bike** is a bicycle with a battery and a small electric motor that helps you along. An **e-scooter** is a stand-up scooter — a deck you stand on, handlebars and two small wheels — driven by a motor you control with your thumb. Both are often called **micromobility** devices: small, light vehicles for short trips.

The main kinds you'll see

Kind	What it is
E-bike	Looks like a regular bicycle, with working pedals. The motor adds power as you ride. In Ohio, a true e-bike is treated as a bicycle, not a motor vehicle (Chapter 4).
Step-through e-bike	An e-bike with a low or open frame, so you don't have to swing a leg over a high bar. Popular with older riders (Chapter 9).
E-trike	An electric tricycle with three wheels — two in back, or two in front. It stands up on its own when you stop.
Folding e-bike	A smaller e-bike that folds to fit in a car trunk or closet.
Cargo e-bike	A longer, sturdier e-bike built to carry groceries, gear or (on some models) a passenger.
E-scooter	A stand-up scooter with a motor and a thumb or twist throttle. Ohio calls these **low-speed micromobility devices** (Chapter 7).

The parts that matter most

Part	What it does
Battery	The rechargeable lithium-ion pack. On many e-bikes it slides off the frame or sits behind the seat so you can charge it indoors. On most scooters it's built into the deck.
Motor	Usually in the center of the wheel (a **hub motor**) or down by the pedals (a **mid-drive** motor). Either way, it adds push.
Display or controller	The little screen or button pad on the handlebar. It shows speed, battery level and the assist level, and it's where you turn the system on.
Charger	The power brick that came in the box. It's matched to your battery — more on that in Chapter 13.
Brakes	Most e-bikes and scooters have hand brakes. Many also cut motor power the moment you squeeze a brake lever.
Lights	Many models have built-in front and rear lights powered by the main battery.

GOOD TO KNOW

"Range" just means how far one charge goes

You'll see a range number on every box — say, "up to 40 miles." Treat it as a best case. Hills, wind, cold weather, a heavier rider or cargo, and higher assist levels all shorten the real distance. Learn your own bike's range on easy, close-to-home rides first.

Is an e-bike "cheating"?

Not at all. On a pedal-assist e-bike you still pedal — the motor simply makes hills and headwinds feel flatter. You choose how much help you want, from a little to a lot, and you can turn the help off entirely. Many riders find they ride more often and for longer because the hard parts are easier.

TIP

Talk to your doctor if balance is a question

Riding any two-wheeler takes balance and quick reactions. If you have concerns about balance, dizziness, vision or a recent fall, it's worth a conversation with your doctor before you ride. A three-wheeled e-trike (Chapter 9) is one option many people consider.

CHAPTER 3

Pedal-Assist vs. Throttle

There are two ways an electric motor can help, and the difference matters both for how the bike feels and for which **class** it belongs to under Ohio law.

Pedal-assist: the motor helps when you pedal

On a **pedal-assist** bike, a sensor notices that you're pedaling and the motor adds power to match. Stop pedaling and the motor stops helping. Most bikes have several **assist levels** — often named something like Eco, Tour and Sport, or simply numbered 1 to 5. Low levels save battery and feel gentle; high levels feel like a strong tailwind.

Throttle: the motor moves you without pedaling

A **throttle** is a thumb lever or twist grip. Press it and the motor moves the bike even if your feet are resting. Throttles are handy for getting started from a stop or crossing an intersection. Every e-scooter works this way, and some e-bikes have a throttle as well as pedal-assist.

	Pedal-assist	Throttle
How you get help	Pedal, and the motor joins in	Press a lever or twist a grip
How it feels	Like riding a bike with a tailwind	More like a small moped or scooter
Good for	Exercise, longer rides, natural feel	Starting from a stop, resting legs
Ohio class	Class 1 or Class 3	Class 2 (e-bikes); all e-scooters

Getting comfortable with the controls

1. Read the "getting started" pages of your owner's manual first — every brand's buttons differ.
2. Go to an empty parking lot or a quiet street on a dry day.
3. Turn the system on and choose the **lowest** assist level (or assist off).
4. Ride slowly in a straight line and practice braking gently with both hand brakes.
5. Try one assist level higher, then another. Notice how quickly the bike picks up speed.
6. If your bike has a throttle, try it last, very gently, while you're already rolling slowly.
7. Practice turning, stopping and putting your feet down until it feels natural.

HEADS UP

The first push can surprise you

On higher assist levels or with a throttle, an e-bike can jump forward faster than you expect — especially from a standstill. Start every ride in a low assist level, and keep a hand ready on the brakes until you're rolling.

WHAT THIS DOES FOR YOU

What this does for you

Knowing which kind of help your bike gives tells you how it will behave in traffic, which Ohio class it falls into, and where you're allowed to ride it — all from one simple question: do I have to pedal?

PART 2

Ohio Rules of the Road

Ohio's three e-bike classes, where each may ride, the Class 3 helmet and age rules, electric scooters, and why your city or park may add rules of its own.

CHAPTER 4

Which Class Is Mine?

Since **March 8, 2019**, Ohio has sorted electric bicycles into **three classes**. The class decides where you may ride and whether the Class 3 helmet and age rules apply. Here is how Ohio describes them, in plain words.

What counts as an "electric bicycle" in Ohio

- It has **fully working pedals** — you can ride it like a regular bike.
- Its electric motor is rated at **less than 750 watts**.
- It fits one of the three classes below.

Class	How the motor helps	Motor stops helping at
Class 1	Only while you pedal (pedal-assist)	20 mph
Class 2	Can move the bike whether or not you pedal (throttle)	20 mph
Class 3	Only while you pedal (pedal-assist)	28 mph

Ohio treats an electric bicycle that fits these rules much like a regular bicycle. You don't need a driver's license, a license plate or registration to ride one. A machine with a bigger motor, or without working pedals, isn't an e-bike under this law — it may fall under moped or motorcycle rules instead.

Find the class label on your bike

Ohio law calls for e-bikes to carry a **label**, put on by the manufacturer, that shows the **class**, the **top assisted speed** and the **motor wattage**. Here's how to find it.

1. Look on the **frame** first — often on the seat tube (the tube under the seat), near the pedals, or on the inside of the rear frame.
2. Look for a sticker that says "Class 1," "Class 2" or "Class 3," with a speed like "20 mph" or "28 mph" and a wattage like "500W."
3. No luck? Check the owner's manual, the box, or the product page on the manufacturer's website.
4. Still not sure, or the bike has been changed since it was made? Ask the shop that sold it, or the manufacturer, before you ride it on a bike path.

HEADS UP

Don't "unlock" extra speed

Some websites sell kits or settings that raise an e-bike's top speed. Changing the speed can change the bike's class — or take it outside Ohio's e-bike rules altogether — and it may void the warranty. Keep your bike set the way the manufacturer built it and labeled it.

GOOD TO KNOW

Write the class on your cheat-sheet

Once you know your bike's class, jot it down on the cheat-sheet in Chapter 25. It's the first thing a park ranger, a bike shop or I will ask.

CHAPTER 5

Where Each Class May Ride in Ohio

Under Ohio's state law, e-bike riders generally have the same rights and duties as people riding ordinary bicycles. The differences come on **bike paths** and **shared-use paths** — the paved trails you share with walkers and other cyclists.

	Roads (following bicycle rules)	Bike paths and shared-use paths
Class 1	Yes	Yes, **unless** the city, county, park or state agency in charge prohibits it
Class 2	Yes	Yes, **unless** the city, county, park or state agency in charge prohibits it
Class 3	Yes	**Only** if the path is within or next to a road, **or** the agency in charge allows it

What this means on a real ride

- On a road, ride with traffic and follow the same rules as any bicycle: obey signals and signs, use lights at night, and signal your turns.
- On a park trail, look for signs at the trailhead. The agency that runs the trail can allow or ban e-bikes, or allow only certain classes.
- If you ride a **Class 3**, assume you're **not** allowed on a separate bike trail unless you've confirmed the trail operator permits it.
- Sidewalk riding rules are set mostly by each city. Check yours before riding on the sidewalk.

STAY SAFE

Be kind on shared paths

Walkers, children, dogs on leashes and slower cyclists share these paths. Slow down when passing, give a friendly ring of the bell or call out "on your left," and use a low assist level in crowded areas. An e-bike is heavier and faster than people expect.

GOOD TO KNOW

Ohio's rules may change

In 2026, Ohio lawmakers introduced bills about e-bikes and e-scooters, including proposals on age limits and helmets. As of November 2026 they were still bills, not law. Check current Ohio law at **codes.ohio.gov** (sections 4511.522 and 4511.514) before relying on any summary — including this one.

CHAPTER 6

Class 3: Helmet & Age Rules

Class 3 e-bikes can assist up to 28 mph, so Ohio adds two rules that apply only to them. Everyone should wear a helmet on any bike, but on a Class 3 it's the law.

The two Class 3 rules

Rule	What Ohio law says
Age	No one **under 16** may operate a Class 3 e-bike. A younger person may ride as a **passenger** on a Class 3 bike that's designed to carry passengers.
Helmet	The **rider and any passenger** must wear a protective helmet that meets the standards of the U.S. Consumer Product Safety Commission (CPSC) or ASTM International.

How to check that a helmet meets the standard

1. Look inside the helmet for a sticker or label.
2. In the U.S., a bicycle helmet should say it meets the **CPSC** safety standard for bicycle helmets.
3. Some helmets made for faster e-bike riding also list **NTA 8776**, a Dutch standard written with higher-speed e-bikes in mind. It's optional, not an Ohio requirement.
4. Check the fit: snug, level on your head (not tipped back), with the straps forming a "V" under each ear and the chin strap snug.
5. Replace any helmet that's been in a crash, even if it looks fine.

TIP

A helmet on every ride, every class

Ohio's helmet law covers Class 3, but a fall at 15 mph on a Class 1 bike can hurt just as much. I recommend a properly fitted helmet for every ride on any e-bike, trike or scooter.

HEADS UP

Grandchildren and Class 3 bikes

If a teenager in the family wants to borrow your Class 3 e-bike, remember Ohio's under-16 rule. A Class 1 bike is often a better fit for younger riders — and the rules for scooters are in Chapter 7.

CHAPTER 7

Electric Scooters in Ohio

Ohio has its own rules for stand-up electric scooters. The law calls them **low-speed micromobility devices**, and the rules took effect on **April 15, 2021**.

What counts as a low-speed micromobility device

- Weighs **less than 100 pounds**.
- Has **handlebars**.
- Is powered by an electric motor (or by the rider), with a top speed of **no more than 20 mph** on a paved, level surface when the motor is driving it.

The main state rules

Topic	Ohio's rule
Where	State law allows them on streets, sidewalks, shared-use paths and bike lanes — **but** cities, counties, park districts and the state can limit or ban them in their areas.
Speed	No faster than **20 mph**.
Pedestrians	Always **yield** to people walking, and give an **audible signal** (a bell or your voice) before passing them.
Parking	May park on a sidewalk only where it doesn't block people walking.
Registration	Not treated as a motor vehicle, so no title, plate or registration.
Rentals	Rental companies may not rent one to anyone **under 16**.

HEADS UP

Check your city before you ride on a sidewalk

The state's general permission is only the starting point. Many Ohio cities have passed their own scooter rules, and a city ban on sidewalk riding overrides the state default. Call your city or check its ordinances online before riding downtown.

TIP

Riding at night

Use a bright white front light and a red rear light or reflector so drivers can see you. Many scooters have lights built in — check that they're on before you set out.

STAY SAFE

Wear a helmet on a scooter, too

Scooters have small wheels that can catch on cracks and potholes. A helmet, closed-toe shoes and both hands on the handlebars make a real difference.

CHAPTER 8

Local Rules: Cities, Parks & Trails

Ohio's law sets the basics, but it lets local governments and park agencies decide a lot for themselves. That means the rules can change from one town or trail to the next.

Who can set their own rules

- **Cities and villages** — sidewalks, downtown districts and city streets.
- **Counties and park districts** — county trails and parks.
- **The state** — Ohio's state parks and lands.
- **National parks** — each sets its own e-bike rules.

How to find the rules before a ride

1. Read the signs at the trailhead or park entrance — they're the quickest answer.
2. Visit the website of the park district or city that runs the trail and search for "e-bike."
3. Can't find it? Call the park office or city hall and ask: "Which classes of e-bike are allowed, and are scooters allowed?"
4. Write the answer on your cheat-sheet (Chapter 25) for the trails you ride most.

GOOD TO KNOW

Trails around Portage County

Popular trails nearby — such as the Portage Hike & Bike Trail between Kent and Ravenna, and trails run by Summit Metro Parks and Cuyahoga Valley National Park — are managed by different agencies with their own rules. I haven't listed those rules here because they can change. Check each one's posted signs or website before you ride.

WHAT THIS DOES FOR YOU

What this does for you

A two-minute check before a new trail means no awkward conversations with a ranger, no fines, and the peace of mind that you're welcome where you're riding.

PART 3

Choosing One That Fits You

Comfortable frames, weight, three-wheel trikes, scooters, and the safety marks to look for before you spend a dollar.

CHAPTER 9

Choosing a Comfortable E-Bike or E-Trike

The best e-bike is the one you'll feel safe and comfortable on. For many older riders, that matters far more than top speed or the biggest battery. Here's what to look for.

Getting on and off: step-through frames

A **step-through** (sometimes called low-step) frame has no high bar between the seat and the handlebars. You step through the middle instead of swinging a leg over the back. If stiff hips or knees make getting on a bike awkward, try a step-through first.

Weight: the number that surprises people

E-bikes are heavy — the battery and motor add a lot. Many weigh 50 pounds or more, and cargo bikes and trikes weigh more still. Before you buy, think about:

- Can you lift it over a curb, into a car or onto a rack? (Taking the battery off first helps.)
- Where will it live? Stairs to a basement are hard work with a heavy bike.
- Can you hold it upright when you stop on a slope?
- What's the bike's **maximum weight** (rider plus cargo)? It's in the owner's manual — stay under it.

Three wheels: the e-trike

An electric **tricycle** stands up on its own when you stop, so you don't have to balance at red lights or put a foot down quickly. Many have a big rear basket for groceries. They're wider and handle differently in turns — you steer more and lean less — so practice slowly in a parking lot first, and check that it fits through your garage door and on your favorite paths.

Other comfort features worth trying

Feature	Why it helps
Upright seating	Swept-back handlebars let you sit up straight, easier on wrists, neck and back.
Wide, padded seat	Many riders swap the seat for a more comfortable one — a shop can help.
Low top speed setting	Many bikes let you choose a gentler assist level or limit. See your manual or app.
Throttle (Class 2)	Helpful for starting from a stop without a hard push on the pedals.
Fenders, rack, kickstand	Small things that make everyday trips easier and cleaner.
Wider tires	Feel steadier on rough pavement and gravel.

1. Visit a local bike shop and ask to **test-ride** two or three models, including a step-through.
2. Start each test on the lowest assist level in a quiet area.
3. Try getting on, stopping, putting your feet down and walking the bike a few steps.
4. Ask where the battery comes off, how heavy it is and how it charges.
5. Ask what service the shop offers and whether they'll work on the brand you're considering.

FROM BILL

My honest advice

Buying from a local bike shop usually costs more than an online deal, but you get a proper fitting, someone to adjust the brakes, and a place to go when something needs attention. For a first e-bike, that support is often worth more than the savings.

CHAPTER 10

Choosing an E-Scooter

Electric scooters are light, fold small and are fun for short trips — which is why they're popular with grandchildren. They also ask more of your balance than a bike or trike does.

Things to know before buying one

- You **stand** the whole ride, on a narrow deck, with small wheels that can catch on cracks and potholes.
- Steering is quick and sensitive. Turning your head to look behind you can make you wobble.
- Look for a model with **two brakes**, good lights, and a deck wide enough for both feet.
- Check the **maximum rider weight** and **top speed** in the specifications.
- Look for **UL 2272** certification (Chapter 11).

TIP

Some scooters have seats

Seated scooters exist, but a scooter with a seat may fall under different rules than a stand-up scooter. Check with the seller and current Ohio rules before buying one for road use.

STAY SAFE

Balance first

If you have balance concerns, an e-trike is usually a steadier choice than a scooter. It's worth asking your doctor before taking up any new kind of riding.

GOOD TO KNOW

Buying for a grandchild?

Ask the parents first. Check the scooter's minimum age and weight limits in the manual, and pick up a helmet at the same time. Remember that rental scooter companies in Ohio may not rent to anyone under 16.

CHAPTER 11

Safety Marks & Buying Safely

The single most important thing you can check before buying is whether the whole electrical system — battery, charger and motor together — has been tested to a recognized safety standard.

The standards to look for

Standard	What it covers
UL 2849	For **e-bikes**. Tests the electrical system as a whole: the drive, the battery and the charger working together.
UL 2272	For **e-scooters**, hoverboards and similar personal e-mobility devices.
UL 2271	For the **battery pack** alone. Good to see, but not the same as certifying the whole bike.

The U.S. Consumer Product Safety Commission (CPSC) has urged makers of e-bikes and scooters to comply with these standards, and it encourages riders to choose products certified to them.

How to check

1. Look on the product page and the box for "certified to UL 2849" (e-bike) or "UL 2272" (scooter).
2. Check that it says the **e-bike** or **scooter** is certified — not just "UL-certified battery cells" or "certified charger." UL Solutions points out that those are not the same as a certified device.
3. Look for the certification mark on the product itself. UL Solutions uses a holographic label on these products.
4. When in doubt, ask the seller which lab certified it, and to which standard.

SCAM ALERT

Too-good-to-be-true e-bike ads

Social media and pop-up websites advertise e-bikes and scooters at a fraction of the normal price. Some ship nothing; others ship uncertified products. Buy from a bike shop, a well-known store, or the manufacturer's own website. Pay with a credit card, never with gift cards, wire transfers or payment apps to a stranger.

SCAM ALERT

Counterfeit safety labels

UL Solutions has warned consumers about chargers carrying a UL mark they were never given. A sticker alone isn't proof. Be wary of no-name products with no clear manufacturer or support contact.

Buying a used e-bike

- Ask for the original **charger**, the owner's manual and the purchase receipt.
- Look the **serial number** up on Bike Index (Chapter 20) to make sure it isn't reported stolen.
- Look the brand and model up at **cpsc.gov/Recalls** (Chapter 23).
- Pass on any bike with a cracked, dented, swollen or water-damaged battery.
- Budget for a tune-up and possibly a new battery — batteries wear out with age.

SCAM ALERT

Stolen bikes for sale

A nearly new e-bike priced far below value, a seller who won't meet in a public place, or no charger and no paperwork can all be signs of a stolen bike. Walk away if the story doesn't add up.

CHAPTER 12

Lights, Mirrors & Being Seen

E-bikes move faster than most drivers expect from a bicycle. Being easy to see is one of the simplest ways to stay safe.

- **Lights:** a white front light and a red rear light, on day and night. Many e-bikes power them from the main battery.
- **Mirror:** a handlebar or helmet mirror lets you see behind you without twisting around.
- **Bell:** a friendly ring before you pass someone on a path.
- **Bright clothing** or a reflective vest, especially at dawn and dusk.
- **Helmet:** properly fitted, every ride (Chapter 6).

TIP

Turn the lights on at the display

On many e-bikes the lights are switched on from the handlebar display or the companion app. Your owner's manual shows which button does it.

WHAT THIS DOES FOR YOU

What this does for you

A mirror and good lights mean fewer surprises: you'll know what's behind you, and drivers will notice you sooner. That makes every ride calmer.

PART 4

Batteries & Charging Safety

The most important part of this guide: how to charge safely, the warning signs of a failing battery, what to do about an Ohio winter, and how to recycle an old battery.

CHAPTER 13

Charge the Battery Safely

E-bikes and scooters run on **lithium-ion** batteries — the same kind of chemistry as your phone, only much bigger. Treated right, they're reliable. But a damaged, mismatched or poorly made battery can overheat and catch fire, and the U.S. Consumer Product Safety Commission (CPSC) reports that many of these home fires happen at night, while batteries were charging and families were asleep. These habits come from the CPSC, the National Fire Protection Association (NFPA), UL Solutions and fire departments.

The safe-charging habits

1. **Use only the charger that came with it**, or one the manufacturer recommends for your exact model. The CPSC urges people not to buy or use "universal" chargers with e-bikes and scooters.
2. **Stay nearby while it charges.** The CPSC advises always being present when charging, and never charging while you sleep.
3. **Unplug it when it's full.** Don't leave it on the charger after charging is complete.
4. **Plug straight into a wall outlet** — not an extension cord or power strip.
5. **Charge on a hard, flat, dry surface** — not on a bed, couch or carpet — away from children, direct sunlight, liquids and anything that can easily burn.
6. **Keep it away from exit doors.** Never charge or park an e-bike or scooter where it would block your way out of the house.
7. **Replacement batteries** should be ones the manufacturer approves for your model.

STAY SAFE

Your owner's manual comes first

Your manufacturer may add specific instructions — how long to wait after a ride before charging, the temperature range for charging, or how to store the battery. Read the charging section of your owner's manual and follow it.

A good charging spot at home

- Many fire safety groups suggest charging and storing outside the living space where possible — a garage or covered porch, protected from rain and extreme temperatures — if your manual allows it.

- Indoors, choose a spot on a hard floor, in sight, away from doors and hallways you'd use to get out.
- Have working **smoke alarms** nearby and test them monthly.
- Don't stack or crowd several batteries together while charging.

WHAT THIS DOES FOR YOU

What this does for you

A few simple habits — the right charger, a hard surface, unplugging when it's full and never charging overnight — remove most of the risk, so you can enjoy your rides without worrying about your home.

TIP

Set a timer

Not sure how long a charge takes? Your owner's manual lists a typical charging time. Set a kitchen timer or a phone reminder so you remember to unplug it.

CHAPTER 14

Battery Is Swelling or Hot

Most batteries give warning signs before they fail. Know them, and act quickly if you see one.

Stop using it right away if the battery

- Gives off **smoke** or an **unusual smell**.
- **Changes shape** — swells, bulges or puffs up — or changes color.
- Gets **unusually hot**, while charging or after a ride.
- **Leaks** anything.
- **Won't take a charge**, or the charge drops off suddenly.

Fire safety groups also commonly mention **hissing, popping or crackling** sounds as a sign of trouble. So is any battery that's been dropped hard, cracked, crushed or soaked in water — even if it seems fine.

What to do

1. If there is **smoke or fire**: get everyone out of the house, close the door behind you if you can, and **call 911** from outside. Don't try to fight the fire.
2. If it's **hot, swollen or smells** but there's no smoke: stop charging and stop riding. Unplug the charger at the wall only if you can do it safely. Don't touch a hot battery with bare hands.
3. Keep people and pets away from it, and keep it away from anything that can burn.
4. Call the **manufacturer** or the shop that sold it for instructions. Don't open, repair or keep using it.
5. Report the problem to the CPSC at **SaferProducts.gov**.
6. Don't put it in the trash. Ask the manufacturer or your local hazardous waste program how to dispose of a damaged battery (Chapter 16).

STAY SAFE

Never repair a battery yourself

Don't open a battery pack or let anyone who isn't qualified repair it. Repairs should be done by a qualified professional, and replacement batteries should be approved by the manufacturer.

GOOD TO KNOW

Lithium-ion fires are different

A lithium-ion battery fire can spread fast and reignite. That's why the advice is to get out and call 911, not to grab an extinguisher or a bucket of water.

CHAPTER 15

Batteries in an Ohio Winter

Northeast Ohio winters are hard on batteries. Cold doesn't usually damage a battery that's sitting unused, but it shortens your range on the road, and long storage in a freezing garage isn't ideal.

Riding in cold weather

- Expect **less range** on cold days — plan shorter trips.
- Many manufacturers advise bringing the battery indoors to warm up before charging it. Check your owner's manual for your battery's charging temperature range.
- Wipe off road salt and slush after a ride; salt is hard on chains and brakes.

Storing it for the winter

1. Take the battery off the bike if it's removable.
2. Store it **indoors**, in a dry room at about **room temperature** — not in a freezing garage or a hot attic.
3. Leave it **partly charged**, not full and not empty. Bosch, for example, recommends about **30 to 60 percent** for longer storage. Other brands give slightly different numbers — follow your manual.
4. Check it every month or so, and top it up to the storage level if it has dropped.
5. Store it on a hard surface, away from exits and away from anything that burns — the same rules as charging.

TIP

Scooters with built-in batteries

If your scooter's battery doesn't come out, bring the whole scooter inside for the winter and follow the same rules: partly charged, room temperature, checked monthly.

WHAT THIS DOES FOR YOU

What this does for you

A battery stored the right way over the winter is ready to go on the first warm spring day — and it lasts more seasons before it needs replacing, which saves real money.

CHAPTER 16

Recycling an Old Battery

E-bike and scooter batteries wear out over time and will eventually hold less charge. When it's time, they need to be recycled — **never** put a lithium-ion battery in the trash or curbside recycling bin.

Call2Recycle's e-bike battery program

Call2Recycle, a battery-recycling program, runs an e-bike battery program with the bicycle industry group **PeopleForBikes**. Many participating bike shops accept e-bike batteries.

1. Go to **call2recycle.org** and open the drop-off locator.
2. Enter your ZIP code and choose **E-Bikes** as the type.
3. Pick a nearby location and **call ahead** to confirm they're accepting e-bike batteries.
4. Before you go, put tape over the battery's metal contacts so they can't touch anything.
5. Carry it in a sturdy box, away from anything flammable.

HEADS UP

Damaged batteries need special handling

A swollen, leaking or burned battery shouldn't go to an ordinary drop-off point. Call the manufacturer or your county's household hazardous waste program first and ask how to handle it.

TIP

Ask the shop when you buy a new battery

Many bike shops will take your old battery when you buy a replacement. It never hurts to ask.

PART 5

Apps & Smart Features

Many e-bikes and scooters connect to a phone app. Here's what the apps do, how to pair one, and how to handle ride modes, speed settings and updates.

CHAPTER 17

Connect the Companion App

A **companion app** is a free phone app made by your bike or scooter's manufacturer. It talks to the bike over **Bluetooth** — a short-range wireless connection, the same kind your phone uses for wireless earbuds. You don't need the app to ride, but it can be handy.

What companion apps can do

- Show your speed, distance, battery level and ride history.
- Change **ride modes** or assist levels and turn the lights on or off.
- Install **software updates** for the bike's motor and display.
- On some models: lock the bike, sound an alarm, or show the bike's location if it goes missing.
- Run a **diagnostic check** and send the results to the manufacturer's support team.

A few examples, as of November 2026

Brand	What its app does
Aventon	The **Aventon** app connects over Bluetooth for ride data and motor tuning and can install updates over the air. On models with Aventon's connected security module, it can send alerts and track the bike's location. An Apple Watch app arrived in April 2026.
Segway-Ninebot	The scooter app formerly called **Segway-Ninebot** is now named **Segway Mobility**. It can set lights, alarm and speed, and run diagnostics. Features vary by model.
Rad Power Bikes	Rad Power Bikes filed for bankruptcy protection in December 2025, and Life EV bought the brand in March 2026. Owners should check Rad's current support site for app and service updates.

GOOD TO KNOW

Your bike still rides without the app

If an app stops working or a brand changes hands, the bike itself keeps working: the display and the buttons on the handlebar still control it. A local bike shop can usually service the brakes, tires and chain on any brand.

Pairing the app with your bike

1. Find the app's exact name in your owner's manual or on the manufacturer's website. Download it only from the **App Store** (iPhone) or **Google Play** (Android).
2. Open the app and create an account with your email address and a strong password.
3. Turn on **Bluetooth** on your phone, and allow the app to use Bluetooth when it asks.
4. Turn the bike or scooter on, and stand close to it.
5. In the app, tap the option to add or connect a bike, and pick yours from the list. Some apps ask you to scan a QR code on the frame or enter the serial number.
6. Follow the prompts until the app shows your battery level. You're connected.

TIP

When it won't connect

Turn the bike off and on again, turn your phone's Bluetooth off and on, and move closer. Bluetooth works best within a few feet. If it still won't pair, close the app completely and reopen it.

SCAM ALERT

Fake support numbers

If you search the web for your brand's "support phone number," scam ads can appear first. Get support contacts from your owner's manual, the app itself, or the manufacturer's official website — and never let a caller take remote control of your computer or pay them with gift cards.

Privacy: what the app knows

Apps that track rides or locate your bike collect your **location**. Review the permissions the app asks for. You can usually allow location only "while using the app," and you can delete ride history in the app's settings if you'd rather not keep it.

CHAPTER 18

Ride Modes, Speed Settings & Updates

Most e-bikes and scooters let you pick how much help the motor gives and, on some, how fast it can go. These settings live on the handlebar display, in the app, or both.

Ride modes and assist levels

- Lower levels (often called Eco) feel gentle and make the battery last longer.
- Higher levels (often called Sport or Turbo) feel stronger but use the battery faster.
- Some scooters have a **walk** mode for pushing it along slowly, and some e-bikes have a walk-assist button that helps you push the bike up a ramp.

Speed settings

Some bikes and scooters let you **lower** the top speed — a good choice while you're learning or riding on busy paths. Any changes should stay within what your owner's manual allows and within your bike's Ohio class (Chapter 4).

> **HEADS UP**
>
> **Settings that raise the speed**
>
> If an app or menu offers an "off-road" or "unlimited" mode, read the fine print. Riding above your class's limit on public roads or paths can break the rules for where you're riding. When in doubt, leave it at the factory setting.

Software updates

1. When the app says an update is available, charge the battery first (the app may require a minimum level).
2. Stay close to the bike with your phone on Wi-Fi or a good signal.
3. Start the update and don't ride, turn off the bike or close the app until it says it's finished.
4. Afterward, check that the display, lights and assist levels work normally on a short, slow test ride.

WHAT THIS DOES FOR YOU

What this does for you

Updates can fix bugs and add features. And choosing a gentle assist level and a lower top speed while you build confidence lets the bike grow with you.

PART 6

Locks, Theft & Your Records

E-bikes are valuable and attractive to thieves. A good lock, a few habits and a free serial-number registration give you the best chance of keeping yours — or getting it back.

CHAPTER 19

Lock It Up & Prevent Theft

An e-bike costs far more than most regular bikes, and a removable battery is worth stealing on its own. A few good habits make your bike a much less tempting target.

Choosing a lock

Type	What to know
U-lock (D-lock)	A hardened steel U-shaped lock. Sturdy and a good everyday choice.
Heavy chain lock	A thick chain with a strong padlock. Heavier, but reaches around bigger posts.
Folding lock	Folds into a compact bundle. Easier to carry than a chain.
Cable lock	Light and easy to cut. Use it only as an extra, to secure a wheel or seat.

Locking it properly

1. Lock the **frame** — not just a wheel — to something solid and fixed, like a bike rack bolted to the ground.
2. Use a second lock or cable for the front wheel if it comes off without tools.
3. **Take the battery with you** if it's removable, and the display if it detaches.
4. Park in a busy, well-lit place where people can see the bike.
5. At home, keep it indoors or in a locked garage, out of sight from the street.

TIP

A hidden tracker can help

Some riders hide a small Bluetooth tracker on the bike, and some e-bike and scooter apps can show the bike's location. A tracker can help police find a stolen bike, but don't try to recover it yourself — call the police and share the location with them.

GOOD TO KNOW

Check your insurance

Some homeowners and renters policies cover e-bike theft and some don't, or have limits. Call your insurance agent, ask specifically about the e-bike, and keep your receipt with your records.

If your bike was stolen

1. Call the police non-emergency number and file a report. Give them the **serial number**, make, model, color and photos.
2. Mark it stolen on **Bike Index** if you registered it (Chapter 20).
3. If your app has a location feature, check it and share what you find with the police.
4. Tell your insurance company, and the manufacturer if they keep a stolen-bike list.
5. Watch local online marketplaces, but let the police handle any meeting with a seller.

CHAPTER 20

Register Your Serial Number

Every bike frame has a **serial number** — a unique code stamped into the metal. It's the single most useful piece of information if your bike is ever lost or stolen. Write it down today.

Find the serial number

1. Turn the bike upside down or tip it on its side carefully (or ask someone to help — it's heavy).
2. Look on the underside of the frame where the pedal cranks pass through. That's the most common spot.
3. If it's not there, check near the rear wheel, the seat tube or the front of the frame where the handlebars attach.
4. Look at the owner's manual, the receipt or the box — many list the frame serial number too.
5. Take a clear photo of the number and write it on your cheat-sheet (Chapter 25).

> **TIP**
>
> **Write down the battery and key numbers, too**
>
> Many e-bike batteries have their own serial number, and the battery lock usually has a key number. Note both — you'll need the key number to order a replacement key.

Register it free with Bike Index

Bike Index is a free, nonprofit online bike registry. Anyone can register a bike or e-bike, and police, shops and buyers use it to check whether a bike has been reported stolen.

1. Go to **bikeindex.org** and create a free account.
2. Choose to register a bike and enter the **serial number**, **make**, **model** and **color**.
3. Add photos and any details that make your bike stand out, such as a basket or stickers.
4. Choose whether your listing is public or private.
5. If the bike is ever stolen, sign in and mark it stolen right away.

WHAT THIS DOES FOR YOU

What this does for you

A registered serial number turns "a gray e-bike" into proof that a bike is yours. It helps police return it and makes it much harder for a thief to sell.

GOOD TO KNOW

Register with the manufacturer, too

Many manufacturers let you register your bike on their website or in their app. It can help with warranty claims, and it's how many companies contact owners about recalls (Chapter 23).

PART 7

Care, Tune-Ups & Recalls

A simple before-ride check, easy upkeep for tires, brakes and chain, when to see a bike shop, and how to find out if your bike or scooter has been recalled.

CHAPTER 21

Basic Care: Tires, Brakes & Chain

An e-bike is heavier and often faster than a regular bike, so tires, brakes and chain work harder. A quick check before each ride catches most problems early. Your owner's manual lists the maintenance schedule for your model — follow it.

The quick check before every ride

Check	What to do
Air	Squeeze both tires. If they feel soft, pump them up to the pressure printed on the side of the tire.
Brakes	Squeeze each brake lever. It should feel firm and stop before touching the handlebar. Roll the bike forward and make sure each brake stops it.
Chain	Look for rust or a dry, gray chain. Spin the pedals backward — it should move smoothly.
Quick look	Wheels tight, handlebars straight, battery clicked in and locked, lights working, battery level enough for your trip.

Tires

- Check tire pressure at least weekly with a pump that has a gauge. The right range is printed on the tire's sidewall.
- Low pressure wears tires faster, shortens battery range and makes the bike feel sluggish.
- Look for cuts, bulges or worn-smooth tread, and replace worn tires.

Brakes

- Squealing, grinding, a soft or spongy lever, or a lever that pulls all the way to the bar all mean the brakes need attention — have a shop look before you ride again.
- Brake pads wear out. A shop can check and replace them during a tune-up.

STAY SAFE

Brakes are not a do-it-yourself experiment

Unless you're experienced with bicycle brakes, leave brake adjustments to a bike shop. On a heavy e-bike, good brakes matter more than anything else.

Chain

1. Wipe the chain with a clean rag while turning the pedals backward.
2. Put one small drop of bicycle chain lubricant on each link as you turn the pedals.
3. Let it sit a few minutes, then wipe off the extra so it doesn't collect dirt.
4. Do this every few weeks, and after riding in rain or on salted winter roads.

Keeping it clean

- Turn the system off and, if your manual says to, remove the battery before cleaning.
- Use a damp cloth or a gentle stream of water, not a pressure washer. Keep water away from the display, battery contacts and charging port.
- Dry it off and keep it out of the rain when it's parked.

WHAT THIS DOES FOR YOU

What this does for you

Five minutes of care each week keeps the ride smooth, the brakes strong and the battery range longer — and it means fewer surprises far from home.

CHAPTER 22

Tune-Ups at a Bike Shop

Even with good home care, an e-bike benefits from a professional tune-up. A bike shop has the tools and experience to adjust brakes and gears properly and spot wear you might miss.

When to go

- At the interval your owner's manual recommends.
- A few weeks after you buy a new bike — cables stretch and bolts settle in. Some shops include a first check-up with a new bike, so ask.
- Each spring before riding season.
- Any time brakes feel soft, gears skip, something rattles, or the bike was in a fall.

What to ask for

1. Call ahead and ask whether the shop works on e-bikes, and on your brand.
2. Tell them your bike's make, model and class, and bring the charger if they ask.
3. Ask them to check brakes, tires, chain, wheels and all bolts.
4. Ask whether a software update is available for the motor and display — some shops can install it.
5. Ask for a written estimate before any extra work is done.

GOOD TO KNOW

Prices vary

Tune-up prices vary by shop and by how much work is needed, and parts are extra. Ask for the price up front so there are no surprises.

TIP

Mobile bike repair

Some bike mechanics come to your home with a service van. That can be easier than hauling a heavy e-bike or trike to a shop.

CHAPTER 23

Check for Recalls

When a manufacturer finds a safety problem, it may issue a **recall** — usually a free repair, replacement or refund. In the U.S., recalls of e-bikes, e-scooters and their batteries and chargers are announced by the **Consumer Product Safety Commission (CPSC)**.

How to check

1. Go to **cpsc.gov/Recalls**.
2. Search for your brand name, such as the name on the bike's frame.
3. Read any recall that matches your model. Compare model names, serial number ranges or dates sold.
4. If yours is included, **stop using it** if the notice says to, and follow the instructions to contact the company for the free fix.

The CPSC sometimes also issues **warnings** telling people to stop using a product when the company hasn't agreed to a recall. In 2026, for example, it issued warnings about certain low-cost e-bikes sold online. Take these just as seriously.

TIP

Register so the company can reach you

Registering your bike with the manufacturer (Chapter 20) is often how companies find owners when there's a recall. Keep your email address up to date in your account.

GOOD TO KNOW

Report a problem

If your e-bike, scooter, battery or charger overheats, catches fire or fails in a way that could hurt someone, report it at **SaferProducts.gov**. Reports help the CPSC spot problems early.

PART 8

When to Call Bill & Your Cheat-Sheet

An honest word about when a hand is worth it, and a one-page summary of everything that matters.

CHAPTER 24

When to Call Bill

I wrote this guide so you can handle most of the tech side of an e-bike or scooter yourself. But part of being helpful is being honest about when a hand saves you time and worry. Here's my straight advice.

Times it's well worth a call

- **The companion app won't pair**, won't update, or you'd like it set up with sensible privacy settings.
- **Setting up a location tracker** or the app's anti-theft features.
- **Researching a purchase** — checking a model's safety certification, recall history and the seller before you buy, or reviewing an online listing that seems too good to be true.
- **Registering the serial number** with Bike Index and the manufacturer, and organizing your receipts, manuals and photos in one place.
- **Choosing a safe charging spot** at home and making sure your smoke alarms are working.
- **You'd simply rather have a patient person** walk through it with you. That's always reason enough.

GOOD TO KNOW

What I don't do

I'm a technology helper, not a bike mechanic. For brakes, tires, chains, motors and battery repairs, a bike shop is the right place — and for a battery that's hot, swollen or smoking, follow Chapter 14 and call 911 if there's smoke or fire.

What working with me is like

I work at your pace — no rushing, no talking down, and no jargon. I explain what I'm doing in plain words, and I'll tell you honestly when something isn't worth your money. I bring 30+ years of professional experience to every visit, and Bill's Home Tech serves Portage County, Ohio. I can often help over a remote session, or come to your home.

FROM BILL

How to reach me

Call or text **(330) 200-8042**, or book a time at **billshometech.com/book**. My help is **$49 remote · $99 in your home**. This guide is free to keep and share.

GOOD TO KNOW

You may meet Sophie first

When you call or visit billshometech.com, you may be greeted by **Sophie**, my AI receptionist. She can answer quick questions and help you book a time with me. A real person — me — does the actual help.

Thank you for taking the time to understand your e-bike or scooter. Ride safe, charge smart, and enjoy the fresh air.

— Bill

CHAPTER 25

Your E-Bike & E-Scooter Cheat-Sheet

Keep this summary handy. The whole guide, boiled down.

The essentials

Topic	What to remember
Ohio e-bike classes	Class 1: pedal-assist to 20 mph. Class 2: throttle to 20 mph. Class 3: pedal-assist to 28 mph. All under 750 watts with working pedals.
Bike paths	Class 1 and 2 allowed unless the trail's operator bans them. Class 3 only if the path is next to a road or the operator allows it.
Class 3 rules	Rider must be 16 or older. Rider and passenger must wear a helmet.
E-scooters	20 mph limit. Yield to people walking and signal before passing. Cities may ban sidewalk riding.
Charging	Original charger, wall outlet, hard surface, stay nearby, unplug when full, never overnight, never blocking an exit.
Warning signs	Heat, swelling, smell, smoke, leaking, hissing or popping: stop using it. Smoke or fire: get out and call 911.
Winter storage	Indoors, room temperature, partly charged (check your manual), checked monthly.
Old battery	Never in the trash. call2recycle.org > drop-off locator > E-Bikes.
Recalls	cpsc.gov/Recalls. Report problems at SaferProducts.gov.
Rules can change	Check codes.ohio.gov and your city, park or trail before you ride.

Write it down once

Keep handy	
Make and model	_____
Ohio class (1, 2 or 3)	_____
Frame serial number	_____
Battery serial and key number	_____
Charging time (from manual)	_____
Storage charge level (from manual)	_____
Where I bought it / phone	_____
Bike shop for tune-ups	_____
Bike Index registered?	_____
Trails I ride and their e-bike rules	_____

When something's wrong, in order

1. **Smoke, fire, or a hot, swollen battery:** stop, get to safety, call 911 if there's smoke or fire (Chapter 14).
2. Bike won't turn on: check that the battery is charged, seated and locked in, then turn it off and on.
3. Brakes feel soft or noisy: don't ride — take it to a bike shop.
4. App won't connect: turn the bike and your phone's Bluetooth off and on, and move closer.
5. Look up any error code in your owner's manual or the manufacturer's support site.
6. Call Bill at (330) 200-8042 for app, setup and buying questions — that's what I'm here for.

Safe habits

- A properly fitted helmet on every ride.
- Lights on, day and night. A mirror and a bell.
- Start in the lowest assist level until you're rolling.
- Lock the frame to something solid and take the battery with you.
- Buy certified (UL 2849 for e-bikes, UL 2272 for scooters) from a seller you trust.