



Electric Bike Rider's Guide

eBike Basics

Electric bikes, also called eBikes, assist riders using power provided by an integrated motor and battery. Compared to traditional bikes, eBikes provide faster, easier commutes, near-zero emissions, and an enjoyable ride.

When compared to traditional bikes, eBikes allow riders to travel longer distances in a shorter amount of time. The added range and electric-assisted pedaling can help replace car trips, ease commutes to work or school, and bridge the gap between public transit and home or your next destination.

California recognizes three classes of eBikes: Class 1, Class 2, and Class 3. The differences between these classes include whether power is provided only when pedaling or controlled by the throttle and the top speed the motor assists the rider up to (20 MPH or 28 MPH). The differences are summarized in the table below.

Type	Power	Top Speed
Class 1	Pedal-assisted	20 MPH
Class 2	Throttle Controlled	20 MPH
Class 3	Pedal-assisted	28 MPH

In California, all eBike motors are required to be 750 watts or less. Additionally, riders under the age of 17 are required to wear a helmet while riding any eBike, and Class 3 bikes can only be legally ridden by those 16 and older.



Considerations

Several different styles of eBikes are on the market, including cargo bikes, folding bikes, and even three-wheeled bikes. Step-through bikes without a top frame tube can provide easier mounting and dismounting. Specialty road, mountain, and tandem bikes are also available.

More affordable eBikes generally have a rear hub motor, while higher-end models often have mid-drive motors that are integrated into the bottom bracket (meaning between the pedals). Some find the mid-drive motors more stable, due to the weight being centered on the bike, but both are proven technologies.

eBikes vary in their power (watts) and battery size (watt-hours), so make sure to understand how far and fast your potential bike is designed to go. On some models, the batteries are designed to be removed for easy charging and security. If you plan to regularly leave your eBike outdoors, you may want to prioritize this feature for increased security.

Benefits

eBikes break down a number of barriers to recreation, commuting, and everyday use. In short, an eBike allows anyone to go farther and faster with less effort. Replacing car trips using eBikes also positively impacts our communities through reduced vehicle pollution, less congestion on the roads, and better health for all.

Committing to a 10- to 20-mile commute on a bicycle, especially when it includes hills, is intimidating to many infrequent riders. But, with the assistance of an electric motor, that goal is now well within reach.



Similarly, while many people would be open to replacing car trips with bike trips, they might think it will be more difficult to haul groceries, necessities, and even young children. Fortunately, with the right model, all of these challenges can be overcome with the help of an eBike. Seniors, too, will find that owning an eBike makes riding more enjoyable and accessible, especially when needing to keep up with more athletic riders or energetic grandkids.

Charging & Riding

Charging times will vary based on the size of the battery, but, generally, it will take 3-5 hours to fully charge an eBike battery using a standard 120-volt outlet typical in most homes and businesses.

A common question is "how far can I ride on a fully-charged eBike?" The answer depends on several factors including: pedaling assist level, battery size, and terrain.

On flat terrain with a low assist level, many eBikes can travel for 50 miles or more on a single charge. However, 20-30 miles is a reliable average. Some models also accept an extra battery for added range. It's recommended that new owners test battery life on shorter rides to better gauge long distance endurance.

eBike Safety

If you haven't ridden a bike very often on public roads, the first step is to become familiar with the basics of signaling turns, navigating intersections, and passing other riders. The League of American Bicyclists has extensive resources on the Smart Cycling section of their web site bikeleague.org/ridesmart.

In addition, Sonoma County Bicycle Coalition hosts regular smart cycling classes and family bicycle workshops. Visit bikesonoma.org/education to find out more.

Among the important differences for new eBike riders is the eBike's speed and weight. Although road cyclists often travel at 20 mph or more, casual riders usually do not. Therefore, it's important to understand that you may have less time to react than you are used to, and traffic may not expect you to be traveling at these higher speeds. In addition, eBikes usually weigh about 20 lbs. more than a traditional bike, so the process of mounting and dismounting will be somewhat different, and braking may take longer despite having stronger disk-style brakes.



eBike Security

Because eBikes are more expensive than their non-motored counterparts, they can be targets for theft. The best strategy is to keep your eBike secured in a locked home, access-controlled building, or bike locker. When this isn't possible, leave your bike in a well-trafficked location for as short a time as possible. Also invest in a strong U-lock or chain lock that encloses the frame and back wheel, along with a secondary folding or cable lock for the front wheel. Removing the front wheel and locking it with the back wheel works when using a single lock.

When possible, remove your battery and take it with you. Finally, consider getting insurance for your bike in the event it is stolen and make sure to record your serial number in case it is recovered.

Sonoma County Bicycle Coalition has more bike security tips on their web site at bikesonoma.org/bike-theft/.

eBikes on Transit

In the North Bay Area, many local transit authorities allow eBikes to use the on-board bike racks, including Sonoma County Transit, Petaluma Transit, Santa Rosa Transit, Napa Valley Transit Authority, Mendocino Transit, and the San Francisco Bay Ferry. However, keep in mind that eBikes often weigh in excess of 50 pounds and will need to be lifted by the rider. eBikes are also welcome on SMART train. eBikes are prohibited on Golden Gate Transit and Marin Transit, and other jurisdictions have restrictions on weight and tire size.

As eBikes become more common, transit agencies around the country and in the Bay Area are updating their policies. Check with your local transit authority to understand where and how eBikes can be used on buses, ferries, and trains.



eBikes on Trails and in Parks

Generally, Class 1 and Class 2 eBikes are allowed on all types of paved trails, including Class 1 (paved, separated bike paths). Class 3 eBikes are not allowed on Class 1 bike paths. Riders should remember that the speed limit on all Class 1 trails is 15 miles per hour.

In most California State Parks, Class 1 and Class 2 eBikes are allowed on paved and unpaved trails where traditional bicycles are allowed, but riders should consult park rules before visiting.

In national parks, eBikes are treated like motorized vehicles and are allowed in the same areas and on the same trails. The U.S. Forest Service has about 60,000 miles of trails that are open to Class 1, 2, and 3 eBikes. On Bureau of Land Management (BLM) trails, local land managers set rules on eBike use.

