

The Complete E-Bike Buyer's Guide

Whether you're looking to commute, ride off-road, or just cruise the neighborhood, this explainer can help you make an informed decision.



E(lectric)-bike basics

Step-over vs. step-through?

That top tube makes a difference!

Step-over bikes are the classic look, but not the only way. Go for a **step-through** e-bike if you:

- Ride with cargo often.
- Want to ride in long skirts or restrictive clothing.
- Have difficulty lifting your legs up high.

If you have a need for speed, get a **step-over** e-bike.





The motor

The motor is the heart of your e-bike, making your ride easier with a little (or a lot) extra boost. You'll need to know:

Motor class: 1, 2, or 3

E-bike motors come in 3 classes. Depending on the class, power may be **pedal-assisted** (only on and pushing forward while you pedal) or **throttle controlled** (activated when you squeeze the handlebars).

- Class 1: Pedal-assist only, tops out at 20 mph.
 Widely allowed in bike lanes.
- Class 2: Pedal-assist & throttle tops out at 20 mph. Good for short bursts of speed.
- Class 3: Pedal-assist only, tops out at 28 mph.
 Great for commuters and long-distance riders.

VALENCIA GO can only provide e-bike subsidies to qualified homeowners for the purchase of Class 1, 2, or 3 e-bikes. **Learn more**.

More watts = more power

- 250W: Most common, sufficient for flat terrain and moderate hills.
- 500W: More power, ideal for hills and longer rides.
- 750W+: For off-road and cargo bikes, providing strong torque for steep inclines and heavy loads. 750W is the maximum e-bike wattage allowed in CA.

Hub-based vs. crank-based

- Hub-Based Motors: Located in the (front or rear) wheel hub. It comes in geared or gearless form.
 - > Geared Hub Motors: Common, offers good low-speed torque for efficient commuting and urban riding.
 - Gearless Hub Motors: Quieter, more durable, and efficient at high speeds, but less torque for steep hills.
- Crank-Based Motors (aka mid-drive):
 Located in the crank that connects the pedals, offering balance and higher torque for hilly terrain and longer rides. Typically more expensive.

The best bike for...

- Commuting: Class 1 or 2 e-bike with a geared hub motor (250W).
- Hilly terrain: Class 3 e-bike with a mid-drive motor (500W+).
- Urban rides: Class 2 e-bike with throttle for quick starts.

Always check specific park, trail, and neighborhood regulations on motor wattage and speed limits! These can vary widely in **California**.

The battery

An e-bike's battery is key to performance, range, and ease of use. What you need to know:

The industry standard

E-bikes with 500+ watt motors and 48V+ batteries are a great option for most riders, providing good range and sufficient power.

To ensure your battery is safe, look for **UL 2849 or 2772 certification**. Underwriter Laboratories tests batteries for risk of overheating and fire and only certifies those with reasonable safety standards.

VALENCIA GO can only provide e-bike subsidies to qualified homeowners for the purchase of e-bikes with UL-certified batteries.

Battery types

- Lithium-ion (Li-ion) batteries are the most common material.
- Types include Lithium Cobalt Oxide (LCO) for compactness, Lithium Iron Phosphate (LiFePO4) for durability, and Lithium Nickel Manganese Cobalt (NMC), which balances energy density and lifespan.

Voltage: 48V vs. 52V

- 48V Batteries: Common in mid-range e-bikes, offering a balance of power and range.
- **52V Batteries:** Higher power for steeper hills and longer rides but need to be charged more often.

Storing batteries outside the bike:

CA REQUIREMENTS

- Store in a cool, dry place (32°F to 77°F) away from direct sunlight and heat.
- Keep charge levels at 40%-60% for long-term storage.
- Follow local fire safety regulations for storing e-bike batteries.
- Proper disposal: Recycle batteries at designated facilities; never throw them in the trash!

Staying charged

Follow these tips to help your battery last longer.

GET A COMPATIBLE CHARGER

- Ensure the voltage, type, and brand of your battery match the charger. Mismatched chargers can damage your battery or start a fire.
- Always use the manufacturer's charger or one designed for your battery.

AMPS = CHARGING SPEED

- **Higher amps** = Faster charging.
- Amp Hours (Ah) = Battery capacity. More Ah means more power, but also longer charging time.



Tuning up

How often is maintenance required?

- Basic Tune-Up: Every 3-6 months for regular use.
- Quick Check: Every 1-2 months for tire pressure, brakes, chain, and battery.

Tune-ups include:

- **1. Tire check:** Inspect for wear and correct inflation.
- 2. Brake adjustment: Check responsiveness.
- 3. Chain maintenance: Clean and lubricate.
- **4. Battery check:** Clean terminals and inspect battery connections.
- **5. General safety check:** Inspect and test your handlebars, motor, and pedals.



Repair shops & costs

E-bike services are offered at most bike shops or dedicated e-bike repair centers. Basic tune-ups range from \$50-\$100; major repairs can cost \$100-\$300+.

Regular tune-ups can help prevent major issues and ensure a safe ride. Some local bike shops to try:

BICYCLE JOHN'S

26635 Valley Center Dr Canyon Country, CA 91351 (661) 254-7300

INCYCLE SANTA CLARITA

23360 Cinema Dr Valencia, CA 91355 (661) 254-4008

OPEN TRAILS E-BIKES OF SANTA CLARITA

22935 Soledad Cyn Rd Santa Clarita, CA 91350 (661) 284-5954

SCV CARTS

(Aventon e-bikes only) 25570 Rye Canyon Rd. Suite J Santa Clarita, CA 91355 (661) 388-2648

TREK BICYCLE SANTA CLARITA

26625 Bouquet Canyon Rd Santa Clarita, CA 91350 (661) 414-0088

Choosing your e-bike: 7 essential questions

The perfect e-bike depends on several factors, including your riding style, terrain, and personal preferences. Use these questions to help you pick:

1. What type of e-bike is for you?

- Snow E-Bikes: Designed for winter conditions with wider tires for better traction on snow and ice.
- Mountain E-Bikes: Built for off-road trails, rugged terrain, and steep inclines.
- City E-Bikes: Ideal for smooth pavement, short commutes, and urban environments.
- Cargo E-Bikes: Perfect for carrying heavy loads or making deliveries.

In Santa Clarita County, city e-bikes and mountain e-bikes may be the most popular for smooth urban paths and off-road trails.

2. Where will you ride?

- **Smooth paths:** A city e-bike with a lighter frame and street tires is best.
- Hilly terrain: Try a mountain e-bike or cargo e-bike with a powerful motor (500W+) and mid-drive motor for uphill support.
- Flat terrain: A city e-bike with a lighter motor and less complex gearing will get you around.

3. How much will you carry?

Make sure the bike can support both your weight and any additional cargo you're bringing. **Cargo e-bikes** typically offer higher weight limits, ideal for carrying heavy loads.

4. Can you lift your e-bike?

If you need to carry your bike upstairs or transport it frequently, consider a **lighter e-bike**. Heavier e-bikes, like **mountain bikes** or **cargo bikes**, offer more power but can be difficult to lift.

5. How long & how often do you ride?

 Range: Use a range calculator to estimate how far you can travel on a single charge, based on battery size and motor power.

If you plan on long rides, you may need a **larger battery** (52V) to avoid frequent charging.

6. How often will you charge up?

- More frequent charges, shorter rides: Choose a lower voltage battery (48V or below) if you can charge it often. This may be a better fit for you if your rides are shorter.
- Less frequent charges, longer rides: If you plan on long rides, you
 may need a higher voltage battery (52V) to avoid frequent charging.
 Make sure your neighborhood and trails allow a 52V bike!
- More range: If you need to ride longer distances between charges, opt for a higher voltage battery (52V or more), but be mindful of safety and charging considerations.

7. How much help do you want?

 More assistance: Choose a higher wattage motor (500W+) for more power, especially for hilly areas or carrying cargo.

Consider a **gearless hub motor** for quieter, low-maintenance riding.

The price tag

You've got your specs down! Before you buy, what else will you need to pay for?

Safety essentials

• Helmet: \$30-\$150 (you always need this!)

Bike Lights: \$20-\$200 (stay visible after dark)

• **Shoes:** \$50-\$150 (for clipless pedals)

• Elbow/Knee Pads: \$20-\$50 (optional for off-road riders)

Maintenance

Basic Tune-Ups: \$50-\$100 every 3-6 months.

Tires: \$30-\$70 each; lasts 1,000-3,000 miles.

Patch Kit: \$5-\$15.

Machine Oil: \$5-\$10 per bottle.

• Professional Repairs: \$100-\$300+ for motor or electrical issues. You can perform regular basic maintenance yourself to save moneybut you'll need to budget time for it!

Accessories

■ Water Bottle Holder: \$10-\$30.

Basket/Panniers: \$20-\$150.







Happy riding!