Squeaky Wheels Overview of E-bikes Rev. September 2022



Electric pedal-assist bikes have become increasingly popular in the United States over the past few years, and their <u>adoption</u> is accelerating fast (so to speak). This document provides an overview of key information you need to know as you think about buying an e-bike. More detailed information can be obtained from your favorite local bike shop, but this will get you started.

In Washington state and many other states, e-bikes are classified according to a few key attributes.

- Class 1 e-bikes are pedal-assist bikes (bikes with a motor that provides assistance only when the user is pedaling) with a maximum motor-assisted speed of 20 mph.
- Class 2 e-bikes are pedal-assist bikes that also have a throttle and can provide motor assistance even when the user isn't pedaling, up to a maximum assisted speed of 20 mph.
- Class 3 e-bikes are pedal-assist bikes with a maximum assisted speed of 28 mph.

In Washington, class 1 and 2 e-bikes are treated like regular bicycles for most purposes, while class 3 e-bikes are more restricted in terms of the facilities they may use (generally, they are prohibited on mutliuse trails and sidewalks). For a more detailed review of Washington law on e-bikes, refer to this resource from Cascade Bicycle Club. Regulation of e-bikes in parks and on federal lands (like national park trails) varies, and users should explore applicable rules before heading out.

In a hilly place like Bainbridge Island, e-bikes can make riding easier and more pleasurable for people of all ages. As you begin to climb a hill and press harder on the pedals, the motor gives you more assistance – it's like magic! And with pedal-assist bikes you still get a decent amount of exercise. In fact, some research has shown that e-bike riders actually get **more** exercise than conventional bike riders, likely because they ride more often and travel greater distances when they do. See this <u>article</u> for more information on the fitness benefits of e-bikes.

Buying an e-bike is kind of complex and can seem overwhelming, and we recommend you get assistance from your local bike shop. But a few key factors are worth considering. First, what class of e-bike should you buy? Class 1 and 2 e-bikes should be adequate for most people's needs, and you should think twice before buying an e-bike with a maximum assisted speed in excess of 20 mph, since biking at speeds in excess of 20 mph reduces reaction time and can create safety issues. This is especially true when buying a bike for a child or an older person. Note that the maximum assisted speed is controlled by software/firmware on the bike, and your dealer may be able to adjust the max assisted speed of your bike downward.

Class 3 e-bikes have more powerful motors, and they drain the battery faster, which means you need a bigger battery to get the same range, and that makes the bike heavier. Bike weight can be important if you intend to place it on a rack for travel to riding areas off the island, and almost all e-bikes are heavier than regular pedal bikes.

The bike you need will depend on how you intend to use it (commuting, trail riding, recreational road riding, etc.), and your bike shop can help you select the mix of attributes that best fits your needs. Here is a list of key attributes you should ask about:

- Class of bike (1, 2 or 3).
- General category of bike (road, mountain, gravel/hybrid, cargo, etc.).
- Throttle or no?
- Maximum motor-assisted speed.
- Motor size in Watts.
- Battery capacity.
- Adjustable assistance level or "modes"?
- Range (miles on a single battery charge) under ordinary use.
- Total weight of the bike.
- Charging hardware and ease of charging.
- Bike geometry and orientation (upright "city" bike or less upright orientation).
- Tire size/width.

There are lots of other things you can think about, especially if you're really into gear, but these are the main attributes to consider. Again, it all starts with how you intend to use the bike – that should drive your selection.

Be aware that the combination of increasing demand and supply chain issues has temporarily made it difficult to find a selection e-bikes in stock at many bike shops, but this should improve over time.

## **Resources for more information:**

- Cascade Bicycle Club e-bike pages.
- People for Bikes e-bike <u>pages</u>.
- Electrek e-bike buying guide.

## **Local Bike Shops:**

- B.I. Cycle
- Classic Cycle