RIDE ALL DAY

E-BIKE REPAIR

NELSON BC

The RAD Report!

#001

THIS WEEK'S
TOP STORIES

What makes a good e-bike for riding in and around Nelson BC?

Braking, power and handling or fit. In that order.

Hydraulic brake fluid (mineral oil and very dirty!) Don't forget to get your brakes bled at least twice a year to keep the power and modulation in top form

What kind of brakes come on the e-bike you're looking at?

- If you can't slow down or stop comfortably and safely, it doesn't matter how much power or top speed your e-bike has. A hydraulic based system with at least 180mm rotors is the most ideal. Personally we like to use mineral oil based hydraulic systems. They are very easy to work with, both environmentally and for our health. DOT fluid is used by some brakes, and they do work well. The fluid is not good for us, the paint on our e-bikes, and it really sucks for the environment!

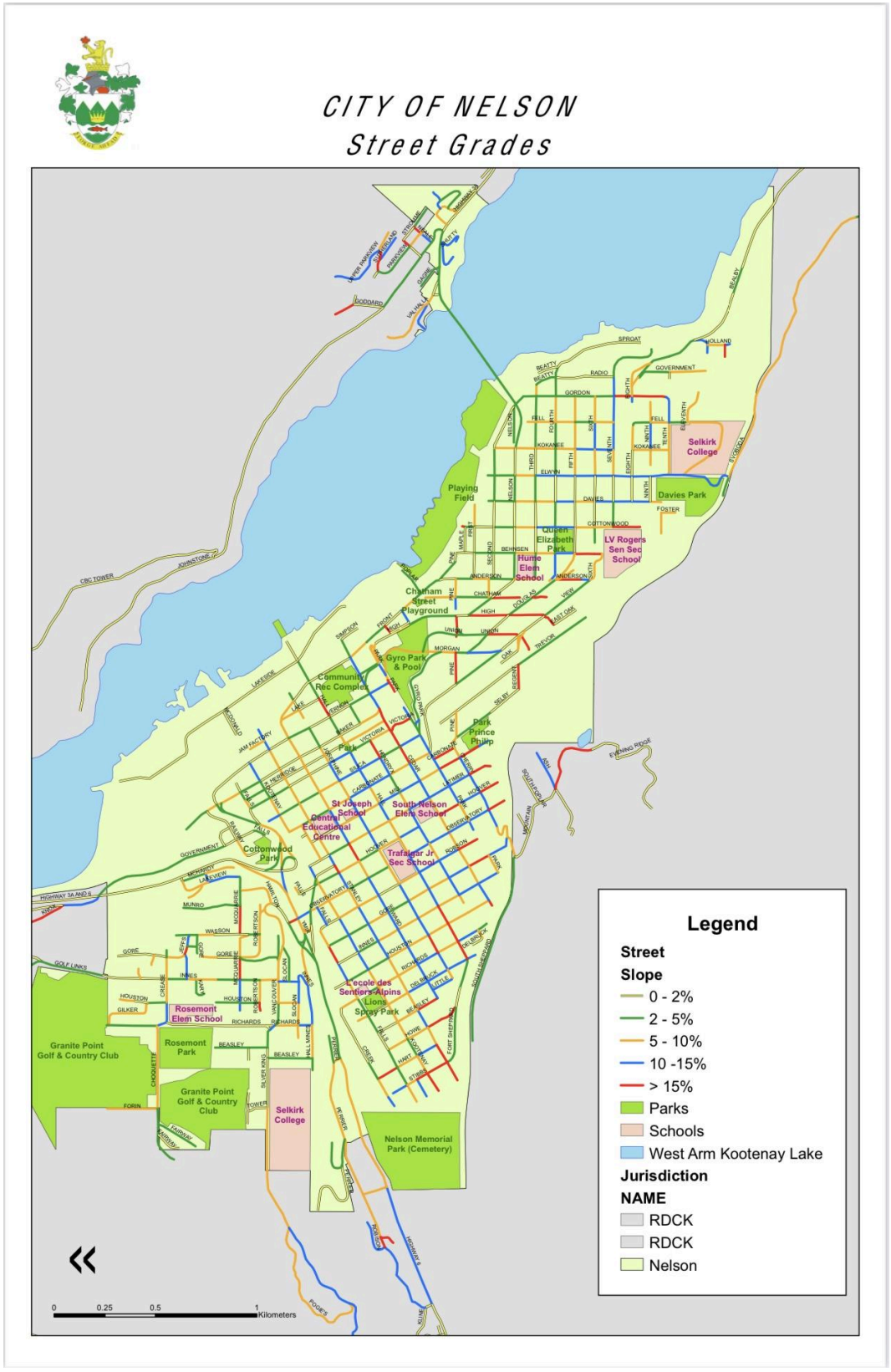
- For a slightly less expensive option, you have cable actuated disc brakes that also work very well. They still use the same rotor and brake pads that a hydraulic system does for fairly consistent power, as long as the cables aren't too stretched out.

They require a bit more preventive maintenance (which is very easy to do, ask me how. I'm happy to teach!) due to the cables stretching

- What type of brake pad does your system use? Most come equipped with what's called an organic compound. They break in quick and aren't too noisy, but they wear out *super fast* around here. The first upgrade on every e-bike we build or repair for customers is ***metal*** (🤘) brake pads for better heat dissipation and longer durability.

Will the battery and motor get you up hill?

- We have some unique geography to get up and down, and as you may have noticed on average, it's fairly steep. So how much power or Watts do you require to get up and around the West Kootenays and what is Wattage? E-bike wattage is the power output of the motor. In Canada we are limited to 500W and 32 Kph. The rating is the voltage (V) supplied by the battery multiplied by the maximum current (Amps of A) flowing from the battery to the motor. For example: a 36V battery and a 15A controller equates to an e-bike motor with a 540W output (36V x 15A).



How steep? (click for a bigger map)

- Bare minimum battery power for an e-bike around here should be 48V, and most motors are going to be 500W at least. So yes, technically most e-bikes in Canada are overpowered. The top speed is limited electronically. There are many ways to get more power and or efficiency out of your electronic system, inexpensive and not. The more power though, the more maintenance. And you will wear out batteries faster, which is still the most expensive part of an e-bike to replace.

Can your e-bike connectors and other electronics handle power modifications?

How does it fit you? Is the geometry suitable for the steepness?

- The number one way Direct To Consumer brands save money is by offering a very limited range of models (especially a lack of sizes!) An e-bike that fits someone who is 5ft tall theoretically can also be ridden by someone 6ft tall, but there will be compromises made. Imagine trying to run in shoes 4 sizes too big or small…
- Can that e-bike be adjusted enough to fit you and suit the riding area?
- The geometry on many entry level e-bikes is suitable for flat or non-rough terrain. How does it feel pointed down a 15% street? How well does it pedal back up and does it turn? Does it turn well when you have it loaded down with kids or groceries or snowboards?
- Can you mount accessories to it easily? Many brands have proprietary racks and things like that.

Things to keep in mind when buying an e-bike for around here are

1: Brakes

- 180mm rotors (the thicker the better!)
- Metal brake pad upgrade
- Hydraulic over cable actuated (mineral oil > DOT fluid)
- How complicated is the system to maintain (easy to bleed or adjust?)
- Tires. Worn out or too low pressure will cause poor braking and handling

2: Power

- Minimum battery rating should be 48V (36V is too weak)
- Stock 500W motors are usually much more powerful than advertised
- An aftermarket controller is a easy way to unlock more power
- More power means more wear and tear and a shorter battery life!
- What speed is the geometry of the frame designed with? Or the other parts…
- Building an e-bike from the ground up is far superior to most Direct To Consumer e-bikes. Especially if you already have a solid “analogue” bike to convert

Watt The F*ck	250W	500W	750W	1000+W
Top Speed*	32 Kph	32 Kph	32 Kph	32 Kph
Acceleration	OK	Quick	Fast	Fell Off Fast!
Hills	Slow (no cargo)	Decent (slow w/ cargo)	Very Good (good w/ cargo)	What Hill?
Cost To Charge	Cheapest	Cheap	Still Pretty Cheap	Ouch (how many batteries will you wear out?)

* The maximum speed for an e-bike sold in Canada is “limited” to 32 Kph

3: Supplier/Support

- Use of proprietary parts (wiring harness!) and are they easy to get?
- What is the warranty of the e-bike and its parts?
- Can you use third party electronics as upgrades?
- Does the brand have any “brick and mortar” support locations?
- CDN or USA based?

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