E-Bike Intelligence Review

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E-Bike / Power Assisted Bikes

A wide look at contemporary electric, power assist bicycle technology, trends and potential regulatory challenges and solutions

Purpose

To address HRM Council questions raised concerning amendment of P-600 and the use of power assisted bicycles on trails

Desired Outcome

To present the challenges, technologies, and existing paradigms & regulations to help Council make the most informed decision regarding local regulations

The Challenge

Power Assisted Bicycles (e-bikes) are increasing in popularity and come in a wide array of configurations.

E-bikes encourage more people out of cars reducing pollution and urban congestion, **but some are dangerously fast or too heavy** to safely share bicycle infrastructure with conventional bikes or pedestrians.

Finding a means to regulate e-bikes performance to minimize potential dangers, identify non-compliant bikes and still include them as part of a leaner, greener transportation solution.

The Proposed Response

Responding to complaints against gas-powered bicycles, Council voted to amend P-600 to potentially ban “motorized bicycles” from HRM parks and trails.

Based on a staff report, Council identified “throttle-type” motorized bicycles as the category to be banned.

While all gasoline-powered bicycles operate via a throttle, so do many fully compliant, silent, clean and safe e-bikes. **The means of engaging power assistance (the throttle) is not the culprit. The amount of power and vehicle dimensions are.**

1

Power Assisted Bicycles are Here & Multiplying

REACHING 40 MILLION IN 15 YEARS, E-BIKES ARE THE FASTEST GROWING VEHICLE MARKET.

+19% EUROPE +10% USA +4.5% CAGR WORLD

2

Power Assisted Bicycles Can Be Hard To Categorize

E-BIKES ARE OFTEN DIY HOMEMADE

bicycles modified by inexpensive, unregulated kits assembled by...?

E-SCOOTERS ARE BULKY & HEAVY

They don't fit in bicycle infrastructure, can't be pedalled.
Legal to the letter of the e-bike law but not the spirit of the law

PEDAL-ASSIST CAN BE DECEPTIVE

Fastest growing sector is the pedal-assist e-mountain bike, many of which come with 5000 + watt motors capable of 90 km/h but look benign

3 Practical Regulations Exist

Federal E-Bike Regulations

Transport Canada
MVSR Section 2(1) “power-assisted bicycles”

*** Must be capable of propulsion by muscle power at all times**

*** One or more electric motors with a continuous max output of 500 watts**

*** If engaged by muscle power, power assistance ceases when muscle power ceases**

*** If engaged by an accelerator, power assistance ceases when brakes are applied**

*** Has a maximum powered speed of 32 km/h on level ground**

*** Has a label permanently affixed in both official languages that identifies it as a power-assisted bicycle according to this definition**

Both are 500 w “e-bikes” but...

An effective bicycle
weighing 30 kgs

Not an effective bicycle
weighing 100 kgs

Both use throttle assist engagement

4

Understanding Vehicle Safety

IMPACT ENERGY IN A COLLISION

top speed : 32 km/h
weight : 30 kgs

4.5 newtons

top speed : 32 km/h
weight : 100 kgs

13.5 newtons

REGULATING WEIGHT IS THE KEY

Federal rules on power-assisted bicycles places the limit at 120 kgs, many municipalities have imposed weight limits of 35 - 40 kgs equivalent to a bicycle towing a child trailer.

5

Industry Recommendation

Follow Federal Regulations

These regulations are reasonable, informed by science and harmonized with 9 provinces and 38 states, allowing industry to provide easily identifiable, compliant vehicles to the largest population

Establish 40 kg Weight Limit

Follows this course set by major municipalities will automatically reduce the greatest danger to pedestrians, animals and other bikers by a factor of 3.

Ban Motive Power, Not Throttles

Focus bans on dangerous vehicles that ignore the power limits, not the method of assistance engagement.

CONNECT

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