

# LEVA Model Legislation For the USA

(Light Electric Vehicle Association proposed legislation text)

## Introduction and Summary of Changes Issued August 24, 2011

To promote zero-emission, domestically-powered, appropriately-sized electric vehicles, the Light Electric Vehicle Association recommends that each state's Vehicle Code conform to these rules. Doing so will simplify the rules, reduce barriers, and fairly treat LEVs as viable transportation alternatives.

To simplify the rules, lower-speed vehicles are classified primarily by their speed rather than their physical characteristics. For example, the definition of a low-speed electric scooter limits the speed to 20 mph regardless of its number or size of wheels. Speed limits of 30 mph and 45 mph are set for other vehicle types. Unlike cars, that provide users with power and speed far beyond human abilities, low-speed electric bicycles and scooters simply allow the user to easily do what otherwise requires some effort. So, these changes also allow electric bicycles and scooters to go wherever pedal bikes go – including on bike paths and trails.

Some states impose needless barriers to riding a 30 mph “motorized bicycle” or moped by requiring riders to pass special written and driving tests beyond what is required for a basic driver’s license (known as Class C in California). LEVA maintains that anyone permitted by the state to drive large SUVs (e.g. a 6000-lb., 70+ mph Hummer H1) should also be allowed to drive a 220-lb. 30 mph moped.

A class of medium-speed vehicles is created that operate upon highways at speeds up to 45 mph. Also known as city cars or local use vehicles, such vehicles must incorporate all D.O.T.-approved low-speed vehicle safety equipment that is standard on 25 mph Neighborhood Electric Vehicles. Additionally, each must also have a roll cage or crushproof body design, windshield wipers, horn, and, if electrically powered, protection from electrolyte spillage and electrical shock protection.

**The definition of a "low-speed electric bicycle" is simplified to be a two- or three-wheel vehicle with a maximum speed of 20 miles per hour.**

1. A "low-speed electric bicycle" is a device with two or three wheels that has a zero-emissions motor (such as battery-powered electric) that meets all of the following requirements:

(a) Has an unladen weight of less than 110 pounds (50Kg) including the weight of the battery, but excluding the weight of a rider, cargo and towed trailer.

- (b) Has a power output of not more than 1,000 watts.
- (c) Has wheels with a diameter of 300mm (12") or more.
- (d) Has brakes on all wheels or axles that are capable of bringing the low-speed electric bicycle, loaded to its total capacity and traveling at a speed of 20 m.p.h (32 k.p.h), to a total standstill within 30' (9.15m) from the point at which the brakes were applied.
- (e) Is incapable, without assistance from the operator, of propelling the device at a speed of more than 20 miles per hour on a paved level surface while ridden by an operator who weighs 170 pounds.
- (f) Includes vehicles that the rider(s) can sit on or stand upon.
- (g) The tread, or "Q factor", of the bike's pedals or other source of locomotion exerted by the rider must be less than 180mm. [This is a public health issue because experts believe that to reduce torquing of the knee and potential injury, the q factor should be adjusted so that the foot tracks in line with the knee and hip. Also, it tightens regulations so that vehicles that are functionally scooters with added-on pedals are not included in this e-bike definition.]
- (h) Operates in a manner so that the motor is disengaged or ceases to function when the brakes are applied, or operates in a manner such that the motor is engaged through a switch or variable-throttle mechanism that, when released, will cause the motor to disengage or cease to function.

2. Every manufacturer of low-speed electric bicycles, as defined in this division, shall provide a disclosure to buyers that advises buyers that their existing insurance policies may not provide coverage for these bicycles and that they should contact their insurance company or insurance agent to determine if coverage is provided. The disclosure shall meet both of the following requirements:

- (a) The disclosure shall be printed in not less than 14-point boldface type on a single sheet of paper that contains no information other than the disclosure.
- (b) The disclosure shall include the following language in capital letters: "YOUR INSURANCE POLICIES MAY NOT PROVIDE COVERAGE FOR ACCIDENTS INVOLVING THE USE OF THIS DEVICE. TO DETERMINE IF COVERAGE IS PROVIDED YOU SHOULD CONTACT YOUR INSURANCE COMPANY OR AGENT."

3. A low-speed electric bicycle operated upon a highway is exempt from registration, insurance and driver licensing requirements.

4. No person under 14 years of age shall operate a low-speed electric bicycle upon a street, bikeway, as defined in Section 890.4 of the Streets and Highways Code, or any other public bicycle path or trail.

5. No person shall operate a low-speed electric bicycle upon a street, bikeway, as defined in Section 890.4 of the Streets and Highways Code, or any other public bicycle path or trail unless that person is wearing a properly fitted and fastened bicycle helmet that meets the standards of either the American Society for Testing and Materials (ASTM) or the United States Consumer Product Safety Commission (CPSC). This requirement also applies to a person who rides upon a low-speed electric bicycle as a passenger or in a trailer towed by the low-speed electric bicycle.

6. No person shall operate a low-speed electric bicycle on a roadway unless it is equipped with 1) a lamp that, when activated after dark, is visible from a

distance of 300 feet in front and from the sides of the vehicle, and 2) a taillamp that is visible from a distance of 300 feet to the rear.

7. In all other respects, a low-speed electric bicycle shall be considered a bicycle and will be treated the same as a bicycle in that:

(a) Electric bikes are allowed on public bicycle paths or trails except when otherwise specifically provided by local statute.

(b) No person shall ride on a low-speed electric bicycle or upon a portion of a low-speed electric bicycle that is not designed or intended for the use of passengers.

(c) A person riding a bicycle or operating a pedicab upon a highway has all the rights and is subject to all the provisions applicable to the driver of a vehicle by this division, including, but not limited to, provisions concerning driving under the influence of alcoholic beverages or any psycho-active drug not prescribed by a medical doctor, or under the combined influence of an alcoholic beverage and any such drug.

(d) Any person operating a low-speed electric bicycle upon a roadway at a speed less than the normal speed of traffic moving in the same direction at that time shall ride in any existing bicycle lane or as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:

i. When overtaking and passing another bicycle, vehicle, or pedestrian within the lane or about to enter the lane if the overtaking and passing cannot be done safely within the lane.

ii. When preparing for a left turn at an intersection or into a private road or driveway.

iii. When reasonably necessary to leave the bicycle lane to avoid debris or other hazardous conditions.

iv. When approaching a place where a right turn is authorized.

(e) This chapter does not prevent local authorities, by ordinance, from regulating the registration of low-speed electric bicycles and the parking and operation of low-speed electric bicycles on pedestrian or bicycle facilities, provided such regulation is not in conflict with the provisions of this code.

### **The definition and operation of a “low-speed electric scooter” is clarified.**

1. A "low-speed electric scooter" is a device with one or more wheels that has a zero-emissions motor (such as battery-powered electric) that meets all of the following requirements:

(a) Has a power output of not more than 1,000 watts.

(b) Is incapable, without assistance from the operator, of propelling the device at a speed of more than 20 miles per hour on a paved level surface while ridden by an operator who weighs 170 pounds.

(c) Includes vehicles that the rider(s) can sit on or stand upon.

(d) Operates in a manner so that the motor is disengaged or ceases to function when the brakes are applied, or operates in a manner such that the

motor is engaged through a switch or variable-throttle mechanism that, when released, will cause the motor to disengage or cease to function.

2. Every manufacturer of low-speed electric scooters, as defined in this division, shall provide a disclosure to buyers that advises buyers that their existing insurance policies may not provide coverage for these bicycles and that they should contact their insurance company or insurance agent to determine if coverage is provided. The disclosure shall meet both of the following requirements:

(a) The disclosure shall be printed in not less than 14-point boldface type on a single sheet of paper that contains no information other than the disclosure.

(b) The disclosure shall include the following language in capital letters: "YOUR INSURANCE POLICIES MAY NOT PROVIDE COVERAGE FOR ACCIDENTS INVOLVING THE USE OF THIS DEVICE. TO DETERMINE IF COVERAGE IS PROVIDED YOU SHOULD CONTACT YOUR INSURANCE COMPANY OR AGENT."

3. A low-speed electric scooter operated upon a highway is exempt from registration, insurance and driver licensing requirements.

4. No person under 14 years of age shall operate a low-speed electric scooter upon a street, bikeway, as defined in Section 890.4 of the Streets and Highways Code, or any other public bicycle path or trail.

5. No person shall operate a low-speed electric scooter upon a street, bikeway, as defined in Section 890.4 of the Streets and Highways Code, or any other public bicycle path or trail unless that person is wearing a properly fitted and fastened bicycle helmet that meets the standards of either the American Society for Testing and Materials (ASTM) or the United States Consumer Product Safety Commission (CPSC). This requirement also applies to a person who rides upon a low-speed electric scooter as a passenger or in a trailer towed by the low-speed electric scooter.

6. No person shall operate a low-speed electric scooter on a roadway unless it is equipped with a brake which will enable the operator to make one braked wheel skid on dry, level, clean pavement.

7. No person shall operate a low-speed electric scooter on a roadway unless it is equipped with a reflex reflector or reflectorized material that conforms with rules for bicycles.

8. In all other respects, a low-speed electric scooter shall be considered a bicycle and will be treated the same as a bicycle in that:

(a) Electric bikes are allowed on public bicycle paths or trails except when otherwise specifically provided by local statute.

(b) A person shall not ride on a low-speed electric scooter or upon a portion of a low-speed electric scooter that is not designed or intended for the use of passengers.

(c) A person riding a scooter or operating a pedicab upon a highway has all the rights and is subject to all the provisions applicable to the driver of a vehicle by this division, including, but not limited to, provisions concerning driving under the influence of alcoholic beverages or any psycho-active drug not prescribed by a medical doctor, or under the combined influence of an alcoholic beverage and any such drug.

- (d) Any person operating a low-speed electric scooter upon a roadway at a speed less than the normal speed of traffic moving in the same direction at that time shall ride in any existing scooter lane or as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:
- i. When overtaking and passing another scooter, bicycle, vehicle, or pedestrian within the lane or about to enter the lane if the overtaking and passing cannot be done safely within the lane.
  - ii. When preparing for a left turn at an intersection or into a private road or driveway.
  - iii. When reasonably necessary to leave the bicycle lane to avoid debris or other hazardous conditions.
  - iv. When approaching a place where a right turn is authorized.
- (e) This chapter does not prevent local authorities, by ordinance, from regulating the registration of low-speed electric scooters and the parking and operation of electric scooters on pedestrian or bicycle facilities, provided such regulation is not in conflict with the provisions of this code.

**The definition of a "motorize bicycle" or "moped" is simplified to be a two- or three-wheel vehicle with a maximum speed of 30 miles per hour.**

1. A "motorized bicycle" or "moped" is any motorized cycle with two or three wheels that meets all of the following requirements:
  - (a) Has an unladen weight of less than 220 pounds (100Kg) including the weight of the battery, but excluding the weight of a rider, cargo and towed trailer.
  - (b) Is incapable, without assistance from the operator, of propelling the device at a speed of more than 30 miles per hour on a paved level surface while ridden by an operator who weighs 170 pounds.
  - (c) Includes vehicles that the rider(s) can sit on or stand on.
  - (d) Operates in a manner so that the motor is disengaged or ceases to function when the brakes are applied, or operates in a manner such that the motor is engaged through a switch or variable-throttle mechanism that, when released, will cause the motor to disengage or cease to function.
  - (e) is equipped with the following:
    - i. a headlamp emitting a white light which, while the motorized bicycle is in motion, illuminates the highway in front of the operator and is visible from a distance of 300 feet in front and from the sides of the motorized bicycle;
    - ii. a red reflector on the rear, or reflectorized material attached to the operator, that is visible from a distance of 500 feet to the rear when directly in front of lawful upper beams of headlamps on a motor vehicle;
    - iii. a white or yellow reflector on each side visible from the front and rear of the motorized bicycle from a distance of 200 feet;
    - iv. a brake which will enable the operator to make one braked wheel skid on dry, level, clean pavement.
2. All motorized bicycles operated upon a highway shall

- (a) comply with those federal motor vehicle safety standards that include, but are not limited to, requiring a headlamp, taillamp, stoplamp, side and rear reflex reflectors, and adequate brakes;
- (b) also be equipped with a rear view mirror, turn indicators, a horn, and, if powered by an internal combustion engine, an adequate muffler;
- (c) Except as provided in subdivisions (a) and (b), none of the provisions of this chapter relating to motorcycles and motor-driven cycles, as defined in this code, shall apply to a motorized bicycle;
- (d) be registered with the state;
- (e) be insured (see "Insurance Note" below);
- (f) display a special license plate issued by the state.

3. The operator of a motorized bicycle must be a licensed driver or possess a valid instruction permit.

4. No person under 16 years of age shall operate a motorized bicycle upon a street, bikeway, as defined in Section 890.4 of the Streets and Highways Code, or any other public bicycle path or trail.

5. No person shall operate a motorized bicycle:

- (a) while carrying any package, bundle, or article that prevents the operator from keeping at least one hand upon the handlebars.
- (b) upon a sidewalk, except as may be necessary to enter or leave adjacent property.
- (c) on the highway with the handlebars raised so that the operator must elevate his or her hands above the level of his or her shoulders in order to grasp the normal steering grip area;
- (d) upon a street, bikeway, as defined in Section 890.4 of the Streets and Highways Code, or any other public bicycle path or trail unless that person is wearing a properly fitted and fastened bicycle helmet that meets the standards of either the American Society for Testing and Materials (ASTM) or the United States Consumer Product Safety Commission (CPSC). This requirement also applies to any person who rides upon a motorized bicycle as a passenger or in a trailer towed by the electric bicycle.

6. In all other respects, a motorized bicycle will be treated the same as a bicycle, low-speed electric bicycle, and low-speed electric scooter in that:

- (a) A person shall not ride on a motorized bicycle or upon a portion of a motorized bicycle that is not designed or intended for the use of passengers.
- (b) A person riding a motorized bicycle upon a highway has all the rights and is subject to all the provisions applicable to the driver of a vehicle by this division, including, but not limited to, provisions concerning driving under the influence of alcoholic beverages or any psycho-active drug not prescribed by a medical doctor, or under the combined influence of an alcoholic beverage and any such drug.
- (c) Any person operating a motorized bicycle upon a roadway at a speed less than the normal speed of traffic moving in the same direction at that time shall ride in any existing bicycle lane or as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:

- i. When overtaking and passing another bicycle, vehicle, or pedestrian within the lane or about to enter the lane if the overtaking and passing cannot be done safely within the lane.
- ii. When preparing for a left turn at an intersection or into a private road or driveway.
- iii. When reasonably necessary to leave the bicycle lane to avoid debris or other hazardous conditions.
- iv. When approaching a place where a right turn is authorized.

(d) This chapter does not prevent local authorities, by ordinance, from regulating the registration of motorized bicycles and the parking and operation of motorized bicycles on pedestrian or bicycle facilities, provided such regulation is not in conflict with the provisions of this code.

7. Upon proper application and payment of the fees, the department shall issue a special license plate and an identification card for the motorized bicycle for which the application was made.

(a) Applications may be submitted by mail unless the department determines that it is not feasible to complete the identification process by such method.

(b) The application for a license plate for a motorized bicycle shall be made before the motorized bicycle is operated or moved upon a highway, except that, upon the retail sale of a motorized bicycle when there is no license plate, the operator may operate the motorized bicycle for a period of five days from and including the date of sale, at which time application shall be made to the department for a special license plate. If the fifth day should fall on Saturday, Sunday, or a holiday, the application shall be made on the first business day thereafter. The five-day operating provision shall apply only if the operator has in his immediate possession evidence that the motorized bicycle was purchased within the last five days including the date of sale.

(c) An application by a person other than a manufacturer or dealer for a license plate for a motorized bicycle shall include all the following:

- i. The true, full name and the driver's license or identification card number, if any, of the owner.
- ii. A description of the motorized bicycle, including any distinctive marks or features.
- iii. Other information as may reasonably be required by the department to determine whether a license plate shall be issued for the motorized bicycle.
- iv. A service fee of twenty dollars (\$20) shall be paid for the issuance or transfer of a special license plate for motorized bicycles. Publicly-owned motorized bicycles are exempt from the fee.

(d) The department may issue a special license plate or other suitable device to a manufacturer or dealer of motorized bicycles upon payment of the fee. The license plate shall be of a size, color and configuration determined by the department. The form of the application shall also be determined by the department. A manufacturer or dealer of motorized bicycles may operate or move a motorized bicycle upon the highways during the delivery of, or during the demonstration for the sale of, the motorized bicycle if the motorized bicycle displays

thereon a license plate or other suitable device issued to the manufacturer or dealer.

(e) Each license plate issued shall bear a distinctive number to identify the motorized bicycle for which it is issued and shall bear a symbol, letter, or word to distinguish license plates issued under this article from license plates issued for motorcycles and motor-driven cycles. The owner, upon being issued a license plate, shall attach it to the motorized bicycle for which it is issued. It shall be unlawful for any person to attach or use the license plate upon any other motorized bicycle or vehicle.

(f) If the motorized bicycle is destroyed, the owner shall destroy the license plate and shall within 10 days notify the department on a form approved by the department that the motorized bicycle and license plate have been destroyed.

(g) If the ownership of the motorized bicycle is transferred to another person, that person shall submit, within 10 days, proper application as provided in this section. The license plate shall remain with the motorized bicycle.

8. The department shall establish a record system that provides for identification of stolen motorized bicycles.

**The definition of a "motor-driven cycle" is simplified to be a two- or three-wheel vehicle with a maximum speed between 30 and 45 miles per hour.**

A "motor-driven cycle" is any motorcycle that can attain a speed, in one mile, of more than 30 miles per hour and not more than 45 miles per hour on a paved level surface while ridden by an operator who weighs 170 pounds. A motor-driven cycle does not include a motorized bicycle or an electric bicycle. Use of motor-driven cycles are prohibited from highways with posted speed limits in excess of 45 mph. In all other respects, motor-driven cycles continue to be treated as defined in the existing state vehicle code.

**Low-speed vehicles are defined and restricted from highways with speed limits above 35 miles per hour.**

A "low-speed vehicle" is a motor vehicle that meets all of the following requirements:

1. has four wheels.
2. can attain a speed, in one mile, of more than 20 miles per hour and not more than 25 miles per hour, on a paved level surface.
3. has a gross vehicle weight rating of less than 3,000 pounds.
4. has all the safety equipment of a low-speed vehicle as specified in 49 CFR 571.500

Low-speed vehicles are prohibited from highways with posted speed limits in excess of 35 mph.

**Medium-speed vehicles are defined and restricted from highways with speed limits above 45 miles per hour.**

A "medium-speed vehicle" is a motor vehicle that meets all of the following requirements:

1. has four wheels.
2. can attain a speed, in one mile, of more than 30 miles per hour and not more than 45 miles per hour, on a paved level surface.
3. has a gross vehicle weight rating of less than 3,000 pounds.
4. has all the safety equipment of a low-speed vehicle as specified in 49 CFR 571.500 except that Type 2 seat belt assemblies (3-point seat belts) are required for each front-seat passenger.
5. must be equipped with a roll cage or a crushproof body design.
6. has windshield wipers that conform to 49 CFR 571.104.
7. has a horn and actuating elements which shall be in such condition as to give an adequate and reliable warning signal.
8. if electrically powered, must conform to Federal Motor Vehicle Safety Standards (FMVSS) for electrolyte spillage and electrical shock protection, as set forth in 49 CFR 571.305.

Medium-speed vehicles are prohibited from highways with posted speed limits in excess of 45 mph.

**Additional background on medium-speed vehicles**

The existing class of low-speed vehicles, commonly known as Neighborhood Electric Vehicles (NEV), must incorporate Federal Motor Vehicle Safety Standard (FMVSS) No. 500 (49 CFR 571.500). The FMVSS 500 specifies basic safety equipment including lights (head, tail, stop, and signal), reflectors, rear-view mirrors, windshields, windshield wipers, parking brake, and seat belts on motor vehicles whose maximum speed is between 20 and 25 miles per hour. The purpose of this standard is to ensure that low-speed vehicles operated on the public streets, roads, and highways are equipped with the minimum motor vehicle equipment appropriate for motor vehicle safety.

Low-speed vehicles have top speeds of 20-25 mph and weigh less than 2,500 pounds. While "low-speed vehicle" is the technically correct term, "NEV" has

become the term used by industry and fleets to refer to passenger vehicles subject to FMVSS 500. About 40 states have passed legislation or regulations allowing NEVs to be licensed and driven on roads that generally are posted at 35 mph or less.

The states of Kentucky, Maryland, Minnesota, Montana, Oklahoma, Oregon, Texas, Tennessee, and Washington all now have laws that allow for Medium Speed Vehicles with top speeds of 35 mph to 55 mph. Colorado has passed a law allowing MSVs that travel up to 45 mph on roads with posted limit of 45 mph or less once DOT adopts standards. Additional states are considering such measures. Let's add California to that list!

## **Insurance Note**

Due to limited experience with - and loss statistics on - light electric vehicles, we recommend each state closely monitor insurance rates and actual costs for these vehicle classes so that premiums are appropriately adjusted to remain in line with actual costs. At least three methods to accomplish this goal are available:

- 1) Socialize vehicle insurance as is done for the insurance we provide to our elderly, widows, orphans and disabled with Social Security;
- 2) Institute a single-payer insurance model similar to Medicare;
- 3) Set a legal limit of 20% or less on the amount of overhead that companies can add to their actual payout costs.

In conjunction with such a public safeguard, LEVA recommends that moped cyclists obtain a minimum PL/PD insurance level of \$15K/person (\$30K/accident) / \$10K property.