

INFORMATION BRIEF
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Low-Power Vehicles

There has been an upsurge in recent years in the number and types of motorized low-power vehicles available in Minnesota, including mini-trucks, motor scooters, motorized foot scooters, pocket bikes, neighborhood electric vehicles, and Segways. They range from recreational devices intended primarily for children to more powerful vehicles aimed at young adults and even seniors.

This information brief describes the various types of vehicles and their status under Minnesota law, and looks at how some other states have addressed them.

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Introduction

Minnesota law regulates vehicle operation on public streets and highways, establishing licensing, insurance, and equipment requirements for different types of vehicles. Recent legislation has established new classifications for vehicles and devices. This reflects an expansion in the variety of vehicles available to consumers.

This information brief summarizes low-power vehicle laws in Minnesota. Low-power vehicles include golf carts, mini-trucks, motor scooters, motorized foot scooters, motorized bicycles (or mopeds), and neighborhood electric vehicles. Although all of the vehicles are motorized, they vary greatly in form, size, features, and intended use. They can resemble small motorcycles or passenger automobiles, but have unique characteristics that set them apart from other motor vehicles.

Summary of Low-Power Vehicles

The tables below outline the basic requirements for each type of vehicle. Subsequent sections provide, for each vehicle, descriptions and more detail on regulations.

	Golf Cart & Certain ATVs	Mini-truck	Motor Scooter & Motorcycle	Motorized Bicycle
Key characteristics	ATV: 800 cc engine, four flotation tires, max. weight of 600 pounds Golf cart: not defined	600 cc or 7,500-watt engine, 900 to 2,200 pounds dry weight, does not meet federal safety standards	Motor scooter: not defined Motorcycle: seat or saddle, up to three wheels	50 cc and 2 hp engine, top speed of 30 m.p.h.
Registration	Local permit; possible DNR registration for ATVs	Local permit; possible DNR registration as ATV	Title, registration, and license plate	Registration and license plate
Licensing	None	Driver's license or permit	Driver's license with two-wheeled vehicle endorsement	Driver's license or permit
Insurance	Liability coverage (same as passenger autos)	Liability coverage (same as passenger autos)	Liability coverage (same as passenger autos)	Liability coverage (same as passenger autos)
Operation rules	Generally same traffic laws as other motor vehicles; no operation at night	Generally same traffic laws as other motor vehicles	Generally same traffic laws as motorcycles and other motor vehicles	Generally same traffic laws as motorcycles and other motor vehicles
Safety equipment	Rearview mirror; slow-moving vehicle emblem	Headlights; taillights; turn signals; mirrors; windshield; seat belt; parking brake	Helmet if under 18; eye protection for all operators; headlight must be on at all times	Helmet if under 18; eye protection for all operators; headlight must be on at all times; taillight required for night

	Electric-Assisted Bicycle	Motorized Foot Scooter	Certain Electric Vehicles	Segway
Key Characteristics	Saddle, pedals, two to three wheels, max. 1,000-watt electric motor, top speed of 20 m.p.h.	Handlebars, motor, max. 12-inch wheels, top speed of 15 m.p.h.	NEV: electric motor, four wheels, top speed of 20-25 m.p.h. MSEV: electric motor, misc. items, top speed of 35 m.p.h.	Electric motor, two nontandem wheels, designed for one person, top speed of 15 m.p.h.
Registration	Registration and license plate	None	Title, registration, and license plate	None
Licensing	Driver's license or permit	None; minimum operator age is 12	Driver's license or permit	None
Insurance	None	None	Liability and personal injury coverage (same as passenger autos)	None
Operation rules	Generally same traffic laws as motorcycles and motor vehicles	Generally same traffic laws as bicycles; no operation on sidewalks; allowed on certain bike paths and trails	Generally same traffic laws as other motor vehicles; no operation on roads with speed limit above 35	Generally same traffic laws as pedestrians; allowed on bike paths
Safety equipment	Helmet; headlight must be on at all times; taillight required for night	Helmet if under 18; headlight and reflector required for night	Must meet federal equipment requirements	Reflectors required
Notes "NEV" refers to a neighborhood electric vehicle. "MSEV" refers to a medium-speed electric vehicle.				

Vehicle Descriptions and Regulations

Motorized vehicles are not usually subject to state regulation while they are being operated on private land, including private driveways. However, once they venture onto streets, roads, and even alleys they are subject to state, and in some places local, regulations. With the introduction of mini-trucks, motorized foot scooters, and neighborhood electric vehicles, recent changes in Minnesota law have expanded the assortment of vehicles that can be operated on public roadways. The following sections describe the basic classifications of different low-power vehicles under Minnesota law, outlines their legal definitions and general characteristics, and provides an overview of regulatory provisions for each.

Golf Carts and All-Terrain Vehicles

Classifications¹

Golf carts are not specifically defined in statute. They were originally manufactured for use on golf courses, but their variety and uses have increased. The vehicle usually seats two to four people and can be powered by an electric or gasoline engine ranging from under 4 to over 20 horsepower. Vehicle weight can go from 500 to over 2,000 pounds. Top speed is typically less than 20 miles per hour. Some models can go up to 25 miles per hour and may be considered a neighborhood electric vehicle or medium-speed electric vehicle under Minnesota law.



For purposes of limited use by permit on public roads, four-wheel all-terrain vehicles (ATVs) are defined in statute as a motorized flotation-tired vehicle with four tires and an engine displacement of no more than 800 cc, weighing less than 600 pounds. [Minn. Stat. § 169.045](#), subd. 1. Note that while ATVs are not registered for on-road use, they generally must be registered with the Department of Natural Resources (which is not discussed in this publication).



Regulations

Both motorized golf carts and ATVs are not titled or registered with the Department of Public Safety, and ordinarily they cannot be operated on public roads. However, Minnesota law does allow local units of government, such as counties and cities, to authorize both motorized golf carts and certain four-wheel ATVs to use streets and highways under their jurisdiction. [Minn. Stat. § 169.045](#).

Registration

Operation of golf carts and certain four-wheel ATVs can be allowed via a special permit issued by counties, cities, or towns. [Minn. Stat. § 169.045](#), subd. 1. The Minnesota Department of Transportation cannot issue the permit for use on trunk highways. If a local unit of government so chooses, it can issue the permit to operate a motorized golf cart or four-wheeled ATV on roadways under its jurisdiction.

However, a permit does not allow use on roads that are not under the authority of the issuing unit of government. A city-issued permit, for instance, would not authorize operation on county roads.

The permit can limit use to certain roads and must be renewed annually. It can be revoked at any time based on evidence of inability to safely operate the vehicle. The governing body must establish an ordinance that provides for permit application and confirmation that insurance requirements are

¹ Image sources: www.floridaslargestgolfshow.com/register.htm; <http://www.gekgo.com/cpi-gas-atvs.html>

met. The ordinance can establish additional conditions as well as require certification by a physician of ability to safely operate the vehicle.

Licensing

A driver's license or instruction permit is not required. [Minn. Stat. § 169.045](#), subd. 7.

Insurance

Insurance requirements must be established as part of the local ordinance permitting vehicle use and must match that of motorcycles. Thus liability insurance (which covers certain claims from another driver) is required and is the same as for passenger automobiles, but the vehicles are exempt from the requirements of personal injury protection under the Minnesota No-Fault Automobile Insurance Act (which establishes minimum required coverage levels for medical, lost wages, and related expenses).² [Minn. Stat. §§ 65B.43](#), subd. 13; [65B.48](#), subd. 5.

If insurance cannot be obtained on the private market, it can be purchased from the Minnesota Automobile Insurance Plan with a rate determined by the Department of Commerce. [Minn. Stat. § 169.045](#), subd. 8.

Operation

Drivers of golf carts and ATVs are subject to the same traffic laws as operators of other motor vehicles. The vehicle can only be operated between sunrise and sunset, and cannot be used in bad weather or if there is not enough light to see people and other vehicles from 500 feet away. The vehicle can only be operated on designated roadways, although they may cross other roads and highways.

Safety equipment

Standard equipment requirements for motor vehicles do apply to vehicles operating under the permit, except that a rearview mirror is needed. It must provide a view to the rear for at least 200 feet. Golf carts must also display a triangular slow-moving vehicle emblem.

Mini-trucks

Classification³

Mini-trucks often resemble pickup trucks, but are notably smaller in size and capacity. They are produced by a number of Asian manufacturers such as Daihatsu, Honda, Mitsubishi, Subaru, and Suzuki. They have generally been imported for off-road uses. In some cases, importers install a governor limiting the top speed to 25 miles per hour. The vehicle taxation structure in Japan, which creates incentives for owning newer vehicles that meet higher emissions standards, appears to have helped spawn exports to the United States.



² The minimum liability coverage is \$30,000 per person for injuries, \$60,000 per occurrence for injuries, and \$10,000 for property damage.

³ Image source: <http://www.made-in-china.com>

The trucks typically weigh between 1,400 and 1,800 pounds and have 12-inch wheels. Although they come in different forms, the standard is an open flat bed behind a small enclosed cab for the driver and one passenger. Most engines range from 550 cc to 660 cc and have 3 or 4 cylinders. Other features can include air conditioning and all-wheel drive. Uses of mini-trucks include recreational off-road activity, work on farms and ranches, at construction sites, in industrial parks, and for grounds maintenance. The vehicles typically do not meet federally mandated equipment standards for motor vehicles (such as for vehicle lighting and occupant safety) and may not meet certain emissions requirements for on-road vehicles.

Mini-trucks were formally classified in statute under a 2009 law that authorized their operation under some circumstances. They are defined as a motor vehicle that:

- has four wheels;
- uses an electric motor rated at 7,500 watts or less, or uses an engine with a maximum displacement of 660 cc;
- weighs between 900 and 2,200 pounds;
- has an enclosed cabin;
- resembles a pickup truck or van and has a cargo area; and
- was not originally manufactured to meet federal safety standards for “low-speed vehicles.” [Minn. Stat. § 169.011](#), subd. 40a.

Regulations

Mini-trucks cannot be registered with the Department of Public Safety to drive on public roads in Minnesota. However, under a 2009 law, the vehicles can be operated on authorized streets and highways via a special permit issued by local units of government, such as counties or cities. [Laws 2009, ch. 158, § 10](#). The permit and regulations are mostly the same as allowed for golf carts and some ATVs (discussed previously on page 5). [Minn. Stat. § 169.045](#). The authority for mini-truck operation expires July 31, 2012.

Registration

Operation of mini-trucks can be allowed via a special permit issued by counties, cities, or towns. [Minn. Stat. § 169.045](#), subd. 1. The Minnesota Department of Transportation cannot issue the permit for use on trunk highways. If a local unit of government so chooses, it can issue a permit to operate the vehicle on roadways under its jurisdiction.

However, a permit does not allow use on roads that are not under the authority of the issuing unit of government. A city-issued permit, for instance, would not authorize operation on county roads.

The permit can limit use to certain roads and must be renewed annually. It can be revoked at any time based on evidence of inability to safely operate the vehicle. The governing body must establish an ordinance that provides for permit application and confirmation that insurance requirements are met. The ordinance can establish additional conditions as well as require certification by a physician of ability to safely operate the vehicle.

<i>Licensing</i>	Unlike golf carts and ATVs under the local permit, a driver's license or instruction permit is required. Minn. Stat. § 169.045 , subd. 7.
<i>Insurance</i>	Insurance requirements must be established as part of the local ordinance permitting mini-truck use and must match that of motorcycles. Thus liability insurance (which covers certain claims from another driver) is required and is the same as for passenger automobiles, but the vehicles are exempt from the requirements of personal injury protection under the Minnesota No-Fault Automobile Insurance Act (which establishes minimum required coverage levels for medical, lost wages, and related expenses). ⁴ Minn. Stat. §§ 65B.43 , subd. 13; 65B.48 , subd. 5. If insurance cannot be obtained on the private market, it can be purchased from the Minnesota Automobile Insurance Plan with a rate determined by the Department of Commerce. Minn. Stat. § 169.045 , subd. 8.
<i>Operation</i>	Drivers are subject to the same traffic laws as operators of other motor vehicles. The vehicles can only be driven on designated roadways, although they may cross other roads and highways. Mini-trucks are not restricted from operation at night or in inclement weather.
<i>Safety equipment</i>	Some equipment requirements apply, including headlights and taillights; turn-signal lamps; some rearview mirrors; a windshield; front driver and passenger seat belts; and a parking brake.

Motor Scooters and Motorcycles

Classification⁵

Motor scooters, as they are commonly known, generally differ from motorcycles in a couple of ways. The engine is most often located underneath where the operator sits, and the standard design is step-through with a low platform for the operator's feet. They are generally lighter (200 pounds), smaller (145 cc engine), and slower (top speed under 60 miles per hour) than the average motorcycle. Vespa and Honda are among the best-selling manufacturers.



Motor scooters are not specifically defined in Minnesota law separately from motorcycles and are treated as a type of motorcycle. See [Minn. Stat. § 169.974](#). "Motorcycles" are defined as motor vehicles that have no more than three wheels and a seat or saddle for the driver. The classification excludes motorized bicycles, electric-assisted bicycles, and tractors. [Minn.](#)

⁴ The minimum liability coverage is \$30,000 per person for injuries, \$60,000 per occurrence for injuries, and \$10,000 for property damage.

⁵ Image source: <http://www.vespausa.com>

[Stat. § 169.011](#), subd. 44.

Regulations

Motor scooters are treated under Minnesota law in the same manner as motorcycles, and the following summary is the same for both. [Minn. Stat. §§ 169.011](#), subd. 44; [169.974](#).

<i>Registration</i>	The vehicle must be registered and carries a registration tax of \$10. Minn. Stat. § 168.013 , subd. 1b. The license plate must be displayed on the rear of the vehicle. A certificate of title also needs to be obtained.
<i>Licensing</i>	A valid driver's license with a two-wheeled vehicle endorsement is required. A two-wheeled vehicle instruction permit is available to a person who is over 16 years old, has a driver's license, is enrolled in a two-wheeled driver's safety course, and passes a written exam.
<i>Insurance</i>	Liability insurance (which covers certain claims from another driver) is required and is the same as for passenger automobiles. ⁶ Minn. Stat. §§ 65B.43 , subd. 13; 65B.48 , subd. 5. Motor scooters and motorcycles are exempt from the requirements of personal injury protection under the Minnesota No-Fault Automobile Insurance Act (which establishes minimum required coverage levels for medical, lost wages, and related expenses).
<i>Operation</i>	Operation is allowed on streets but not sidewalks. Motor scooter and motorcycle operators are subject to the same traffic laws as operators of other motor vehicles (except those that by their nature would not be relevant). Instruction permit holders face additional limits on vehicle operation, including prohibitions on carrying passengers and driving at night. Additional passengers are allowed under some circumstances.
<i>Safety equipment</i>	The vehicle must have at least one rearview mirror, a brake light, a horn, and a headlight that is lighted at all times. A helmet is required for operators and passengers under the age of 18, and eye protection is required for all operators.

Motorized Bicycles (Mopeds) and Electric-Assisted Bicycles

Classifications⁷

Bicycles with attached motors are available in a number of styles that generally resemble a bicycle, although they weigh more (from 55 to over 250 pounds), have additional features such as built-in headlights and turn signals, and may not necessarily have pedals for manual use.

⁶ The minimum liability coverage is \$30,000 per person for injuries, \$60,000 per occurrence for injuries, and \$10,000 for property damage. Note that the insurance requirements do not appear to apply to all motorcycles and motor scooters: under the definition of "motorcycle" in the chapter on automobile insurance, the vehicle's engine must be "rated at greater than five horsepower." [Minn. Stat. § 65B.43](#), subd. 13.

⁷ Image sources: <http://www.egovehicles.com>; <http://www.electric-bikes.com/others.htm>

They are commonly referred to as “mopeds,” although that term can describe other vehicles as well. In general, the vehicles are lighter and less powerful than a motor scooter.

Motorized bicycles. A motorized bicycle resembles a bike but incorporates motorized capability. State law defines it as a bicycle propelled by an electric or liquid fuel motor that has an engine displacement of up to 50 cc and up to 2 brake horsepower, and is capable of a top speed of 30 miles per hour on a flat surface. Although it appears to be classified as a type of bicycle in law, pedals are not specifically required.⁸ [Minn. Stat. § 169.011](#), subd. 45.



Electric-assisted bicycles. Electric-assisted bicycles, sometimes referred to as “e-bikes” are a subset of motorized bicycles.⁹ To be classified as an electric-assisted bicycle in Minnesota, the device must have a saddle and operable pedals, two or three wheels, and an electric motor of up to 1,000 watts, as well as meet certain federal motor vehicle safety standards. The motor must disengage during braking and have a maximum speed of 20 miles per hour (whether assisted by human power or not). [Minn. Stat. § 169.011](#), subd. 27.



Regulations

Motorized bicycles and electric-assisted bicycles are regulated in a manner similar to motor scooters. Most of the laws for motorcycles and motor scooters also apply to motorized bicycles, with a few exceptions. A few regulations are specifically different for electric-assisted bicycles. [Minn. Stat. § 169.223](#).

<i>Registration</i>	The bicycle must be registered, with an annual tax of \$6. Minn. Stat. § 168.013 , subd. 1h. The license plate must be displayed on the rear of the vehicle. Minn. Stat. § 169.79 , subd. 3. A title is not required.
<i>Licensing</i>	An operator must have a driver’s license (although a two-wheeled vehicle endorsement is not required), motorized bicycle operator’s permit, or motorized bicycle instruction permit. Minors at least 15 years old can obtain an operator’s or instruction permit. Minn. Stat. § 171.02 .
<i>Insurance</i>	Liability insurance (which covers certain claims from another driver) is

⁸ A “bicycle,” under state law, is a “device propelled solely by human power upon which any person may ride, having two tandem wheels except scooters...” [Minn. Stat. § 169.011](#), subd. 4.

⁹ While an electric-assisted bicycle is specifically included as a type of “motorized bicycle,” in the definition of “electric-assisted bicycle” it appears to instead be classified as a motor vehicle. [Minn. Stat. §§ 169.011](#), subds. 27, 45.

required and is the same as for passenger automobiles, except that liability coverage is not required for an electric-assisted bicycle.¹⁰ [Minn. Stat. §§ 65B.43](#), subd. 13; [65B.48](#), subd. 5. Both types of bicycles are exempt from the requirements of personal injury protection under the Minnesota No-Fault Automobile Insurance Act (which establishes minimum required coverage levels for medical, lost wages, and related expenses).

Operation

Motorized bicycle operators must follow the same traffic laws as operators of motor scooters, motorcycles, and other motor vehicles (except those that by their nature would not be relevant). [Minn. Stat. §§ 169.223](#), subd. 1; [169.974](#). Operators must generally ride as close as is practical to the right-hand side of the road, occupy only one lane, and ride no more than two abreast.

The bicycle may not be operated on a sidewalk except to access a road. There is variation across communities in whether electric-assisted bicycles are allowed on bike paths reserved for nonmotorized traffic.¹¹ Unless otherwise designated by a political subdivision via posted signs, a person can operate an electric-assisted bicycle in a bicycle lane.¹² In addition, an electric-assisted bicycle can be operated on the shoulder of a roadway if going in the same direction as motor vehicle travel. [Minn. Stat. § 169.223](#), subd. 5.

Safety equipment

The bicycle must have at least one rearview mirror, a horn, and a headlight that is on at all times. A taillight is additionally required for operation at night.

A bicycle helmet is mandatory for operators under the age of 18 or if operating an electric-assisted bicycle. Eye protection is required except for operators of electric-assisted bicycles.

¹⁰ The minimum liability coverage is \$30,000 per person for injuries, \$60,000 per occurrence for injuries, and \$10,000 for property damage.

¹¹ A “bicycle path” is a dedicated bikeway that is separated from a shoulder or marked route on a street. [Minn. Stat. § 169.011](#), subd. 6.

¹² A “bicycle lane” is a portion of the roadway or shoulder of a street designated for exclusive use by bicyclists. [Minn. Stat. § 169.011](#), subd. 5.

Motorized Foot Scooters

Classification¹³

In the past few years, motorized foot scooters have become increasingly popular among youth. They are also called “motorized scooters” and “go-peds.” The devices are usually lightweight platforms with two small wheels, having a design similar to a skateboard but with a motor as well as steering and acceleration control via handlebars mounted on the front. Braking is from a hand brake on the handlebar or by using a foot-operated rear-wheel brake. Some have a seat or saddle that sometimes is removable, which is typically found on more powerful and expensive models. Many motorized foot scooters weigh around 20 to 65 pounds, although heavier designs are available.



Types include both gas and electric motors. Electric models generally have a top speed below 15 miles per hour and a range of up to 20 miles. Models with gas engines commonly range from 25 to 50 cc (1.5 to 2.5 horsepower), and can have a top speed of over 30 miles per hour.

Under a Minnesota law first passed in 2005 and modified in 2008, a motorized foot scooter is defined as a device that:

- has handlebars;
- can be stood or sat on by the operator (a seat or saddle is not required);
- is powered by an internal combustion engine or an electric motor;
- has wheels no more than 12 inches in diameter; and
- has an engine capable of a maximum speed of not more than 15 miles per hour on a flat surface. [Minn. Stat. § 169.011](#), subd. 46.

Pocket bikes. Pocket bikes (also referred to as mini-bikes, mini-motorcycles, and mini-choppers) have become popular in recent years and are marketed as toys. They come in a variety of styles, but often resemble a miniature-sized motorcycle, with a saddle that is commonly located about two feet off the ground. The vehicles are typically powered by a 49-cc gas engine (although electric models are available). They have wheel sizes around 10 inches, weights ranging from just over 30 pounds to about 100



¹³ Image sources: <http://www.electrikmotion.com/GTscotersmain.htm>;
<http://www.lifesaversconference.org/webfiles2006/porter.ppt>

pounds, and top speeds ranging from 30 to over 50 miles per hour.

A 2008 legislative change increased the maximum wheel size of motorized foot scooters from 10 to 12 inches, which effectively eliminated pocket bikes from the motorized foot scooter classification. (Before the changes, motorized foot scooters had been defined based on having a small wheel size *or* a modest top speed, which meant that the category included many pocket bikes.)



Since most pocket bikes are no longer treated as a type of motorized foot scooter, it is likely that they can not legally be operated on public roads. Some pocket bikes may fit within the motorized bicycle classification while others will be treated as motorcycles, but will not be able to be registered (see the section Identifying the Type of Vehicle on page 17 for more information).

Regulations

Minnesota law treats motorized foot scooters like bicycles, meaning that operators have the same rights as bicyclists and must generally follow the same laws. [Minn. Stat. § 169.225](#).

Registration A motorized foot scooter does not need to be registered, and a certificate of title is not necessary.

Licensing A driver's license or permit is not required for operation. The minimum operator age is 12 years old.

Insurance The device does not need to be insured.

Operation A motorized foot scooter may not be operated on a sidewalk, except to cross it. The device can be operated on a bicycle path, bicycle trail, bicycle lane, or bikeway unless (1) the pathway is reserved for nonmotorized use, or (2) operation is restricted by local government.

Operators must ride as close as is practical to the right-hand side of the road, and must follow the same traffic laws as bicyclists. This includes a requirement that when making a left turn, the rider must dismount and cross the roadway on foot (the person is then subject to any restrictions applicable to a pedestrian).

No passengers besides the operator can be carried.

Safety equipment Any person under age 18 must wear a helmet.

The device can be operated when it is dark out, but under current Department of Public Safety regulations it must meet the same lighting requirements that apply to a bicycle: a headlight that is visible at least 500 feet ahead and a red reflector that can be seen from 600 feet behind when in

the path of a motor vehicle's headlight.

Neighborhood Electric Vehicles and Medium-Speed Electric Vehicles

Classifications¹⁴

Neighborhood electric vehicles and medium-speed electric vehicles are similar to golf carts, but have more power, can carry more passengers or cargo, and are designed for potential operation on public roads.

Neighborhood electric vehicle. A Minnesota law passed in 2006 defines a neighborhood electric vehicle (NEV) as a four-wheeled, electrically powered motor vehicle that has a maximum speed of between 20 and 25 miles per hour on a flat surface. [Minn. Stat. § 169.011](#), subd. 47.



Medium-speed electric vehicle. A 2008 law created a related classification: the medium-speed electric vehicle (MSEV). An MSEV is defined similarly to an NEV. It too is four-wheeled, electrically powered motor vehicle, but it can have a top speed of up to 35 miles per hour on a flat surface. It also must be fully enclosed, have at least one door for entry, be equipped with a roll cage or crush-proof design, have a minimum wheelbase of 40 inches, have wheels with a diameter of at least 10 inches, and other than speed capability, it must meet the federal safety standard for low-speed vehicles. [Minn. Stat. § 169.011](#), subd. 39.



The electric vehicles are rechargeable through the electrical grid and have a range of between 30 to 75 miles before needing to recharge. Models come in styles ranging from two-seaters to small-scale trucks, normally weighing between 1,000 and 1,500 pounds. They have primarily been produced for niche uses such as military bases and retirement communities, but their use is widening. Demand also grew out of combined use on golf courses and adjacent streets. The largest U.S. market is in California.

Because of registration, titling, and vehicle equipment requirements, most golf carts would not be considered an NEV or an MSEV that could be operated on public roads (except under the permit discussed earlier). Similarly, because of safety standards that must be met by manufacturers, mini-trucks could not be classified as an NEV or MSEV.

Federal Low-Speed Vehicle Classification

Both NEVs and MSEVs must meet a federal safety standard for “low-speed vehicles” in order to be legally operated on public roads in Minnesota.¹⁵ However, the NEV and MSEV definitions

¹⁴ Image sources: <http://www.gemcar.com>; <http://electriccarsofamerica.com/ev-car-news/1-latest-news/2-30-electric-cars>

¹⁵ Federal law establishes a number of safety standards that regulate manufactured motor vehicles. The U.S. Department of Transportation, National Highway Traffic Safety Administration (NHTSA) establishes and oversees

under state law do not completely match the federal classification. There are a couple of differences, but a key one regards the top speed capability of MSEVs, which under state law is allowed to be higher than the 25 miles per hour maximum allowed under the federal low-speed vehicle standard. This may raise issues with federal preemption as well as the ability of vehicle manufacturers to legally produce MSEVs.

Regulations

Under Minnesota law NEVs and MSEVs are treated similarly to passenger motor vehicles, but their use is restricted to slower streets. *See* [Minn. Stat. § 169.224](#).

Registration Both NEVs and MSEVs are considered passenger automobiles and must be registered. They are subject to the same registration tax (based on vehicle value, depreciated over time) as cars, pickup trucks, and vans. License plates must be displayed on the vehicles.

A certificate of title also must be obtained, which requires a vehicle identification number and a manufacturer's certificate of origin.¹⁶ Homemade electric vehicles and retrofitted golf carts do not qualify for titling. [Minn. Stat. § 168A.05](#), subd. 9.

Licensing A valid driver's license or instruction permit is required, and no special endorsement is necessary.

Insurance Insurance requirements match that of other passenger automobiles, including liability coverage (which covers certain claims from another driver) and personal injury protection under the Minnesota No-Fault Automobile Insurance Act (which establishes minimum required coverage levels for medical, lost wages, and related expenses).¹⁷

Operation Drivers of an NEV or MSEV are subject to the same traffic laws as operators of other motor vehicles. Neither type of vehicle can be operated on a street or highway with a speed limit above 35 miles per hour, except to directly cross it. A local government can restrict use of the vehicle on its roads.

Safety equipment The vehicle may only be operated on public streets and highways if it meets federal equipment standards established for low-speed vehicles. This includes: a windshield, headlamps, tail-lamps, brake lights, front and rear turn signals, reflectors at the rear, rearview mirrors, a parking break, a seat

the safety standards through federal regulations. [49 U.S.C. § 30111](#); [49 C.F.R. § 571](#). The regulations cover technical and engineering specifications for motor vehicle safety equipment, ranging from windshield wipers and brake hoses to crash resistance and material flammability. Each specification is referred to as a "federal motor vehicle safety standard."

¹⁶ The certificate of origin is created by the vehicle manufacturer and sent to a dealer along with the vehicle itself. The dealer then provides the certificate to the Department of Public Safety when the vehicle is sold.

¹⁷ The minimum liability coverage is \$30,000 per person for injuries, \$60,000 per occurrence for injuries, and \$10,000 for property damage. The minimum personal injury protection (PIP) coverage is \$40,000 per person per accident (\$20,000 for hospital and medical expenses, and \$20,000 for other expenses such as lost wages).

belt, and a vehicle identification number. [49 CFR § 571.500](#).

An NEV or an MSEV must have a slow-moving vehicle emblem. [Minn. Stat. § 169.522](#), subd. 1.

Segways

Classification¹⁸

Segways were first introduced in 2001. They are referred to in law as “electric personal assistive mobility devices.” They have two wheels that are parallel rather than tandem and handlebars that a standing operator uses for steering. They are designed to be self-balancing, which contrasts with the other two-wheeled low-speed vehicles that require balancing by the vehicle operator. The latest Segways have a top speed of 12.5 miles per hour and a range of about 24 miles. To be considered an electric personal assistive mobility device under Minnesota law, a device must have two nontandem wheels, be able to transport only one person, use an electric motor, and have a maximum speed of 15 miles per hour on a flat surface. [Minn. Stat. § 169.011](#), subd. 26.



Regulations

Operators of a Segway (or other electric personal assistive mobility device) have the same rights and responsibilities as pedestrians, with some additional requirements. [Minn. Stat. § 169.212](#).

Registration They do not need to be registered, and a certificate of title is not necessary.

Licensing A driver’s license or permit is not required for operation.

Insurance The device does not need to be insured.

Operation The device may be operated on a bicycle path. Operators must use due care and go at speeds that are “reasonable and prudent under the conditions.” [Minn. Stat. § 169.212](#).

Segways can only be operated on a road if directly crossing the roadway, the sidewalk is obstructed or unavailable, under direction of a traffic control device, or temporarily to reach a motor vehicle.

No passengers may be carried.

Safety equipment The device must have reflectors on its front, back, and wheels, which can be seen from 600 feet when in the path of a motor vehicle’s headlight.

¹⁸ Image source: <http://www.segway.com>

Wheelchairs

Wheelchairs are in a separate category from most vehicles. The statutory classification includes scooters and tricycles “used by a disabled person as a substitute for walking.” [Minn. Stat. § 169.011](#), subd. 93.

Under Minnesota law, persons in wheelchairs are considered pedestrians rather than vehicle operators and have the same rights and responsibilities as pedestrians. This is true whether the wheelchair is powered or not. Wheelchairs are required to remain on sidewalks and stay off streets except to cross them, or in situations where a passable or useable sidewalk is not available.

Identifying the Type of Vehicle

A wide variety of low-power vehicles and devices have come onto the market in recent years. Determining whether a specific model is classified as a motor scooter, motorized bicycle, motorized foot scooter, or motorcycle can be challenging. The characteristics of a particular vehicle, such as engine size, top speed, and safety equipment, determine how it is treated under Minnesota law. Although other features are relevant, engine size is an important factor in classifying scooters, mopeds, and motorcycles.

A key question is whether the vehicle fits one of the definitions of those vehicles identified under Minnesota law. With a vehicle that does not clearly fit any low-power vehicle definition, if it has two or three wheels as well as a seat or saddle, it is likely to be classified as a motorcycle (this is in effect a default classification, even the vehicle or device is not commonly viewed as a motorcycle). Vehicle title and registration would therefore be required. However, smaller devices such as pocket bikes that might fall into the motorcycle classification often lack safety equipment required under federal regulations, preventing a vehicle identification number (VIN) from being assigned. Since a VIN is needed in order for Driver and Vehicle Services in the Department of Public Safety to issue a title, the vehicle would not be able to be titled and registered, which is necessary for legal operation of motorcycles on public roads. *See* [Minn. Stat. §§ 168.013](#), subd. 1; [168.09](#), subd. 1; [168A.04](#), subd. 1; [168A.085](#).

The default categorization for a vehicle or device that does not conform to any other low-power vehicle definition is likely a motor vehicle. As such, it would need to be registered and have license plates, the operator must have a driver’s license, full insurance coverage is required, and the vehicle must have safety equipment that includes lights, turn signals, and brakes at both the front and rear.

Legislation in Other States

Electric vehicles. Almost all states now have regulations governing NEVs. The definitions of an NEV (or “low-speed vehicle” as it is called by some states as well as in federal regulations) often overlap with Minnesota’s and follow the federal safety standard. Unlike Minnesota,

however, laws in a number of states as well as the federal regulations do not limit the category to electrically powered vehicles. States commonly allow NEV operation only on roads with a speed limit of up to 35 miles per hour. A handful of states allow further regulations by local units of government.

Nationally, the MSEV classification is quite recent. At least nine states have enacted legislation establishing the new class (Kentucky, Maryland, Minnesota, Montana, Oklahoma, Oregon, Tennessee, Texas, and Washington), and the vehicle is defined similarly as in Minnesota.¹⁹ As with NEVs, MSEV operation is generally restricted to relatively slower roads, with a top posted limit of between 35 and 45 miles per hour.

Motorized foot scooters. Many states have addressed the status of motorized foot scooters, and there is variation among those states that have specific laws. Some, including Delaware and New Jersey, prohibit operation on public roads, trails, and sidewalks. Others have different provisions for:

- minimum operator age (ranging from no minimum in Washington to age 16 in California, Florida, and Oregon);
- helmet requirements (generally required);
- driver's license (required in a couple of states including Florida and Maine); and
- maximum speed limit of streets on which they can be operated (25 miles per hour in a few states, such as California and Oregon).

Legislative activity on pocket bikes has primarily consisted of prohibiting their operation on public streets and roads, sidewalks, trails, and other public lands. Concerns about the vehicles include engine noise, lack of safety equipment such as horns and mirrors, stability at higher speeds, and reduced visibility of both the vehicle (due to its small size) and the operator (due to positioning quite low to the ground). A couple of states have also enacted labeling and disclosure laws. California, New Hampshire, and Connecticut require that manufacturers or retailers affix a label stating that pocket bikes cannot be legally operated on public roads. New Hampshire additionally requires disclosure by the retailer that the vehicle might not be covered under an operator's insurance policy.

Mini-trucks. Nationally, mini-trucks have been another area of recent legislative activity, and most laws have gone into effect in 2007 or more recently. According to the Insurance Institute for Highway Safety, 16 states allow their use on some public roads (Arkansas, California, Florida, Idaho, Illinois, Kansas, Louisiana, Maine, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma, Tennessee, Utah, and Wyoming).²⁰ The vehicles are usually restricted from operating on interstates and certain other roads, but the nature of the limitations varies across the states. In many cases, local units of government such as counties and cities can further restrict vehicles from roads under their jurisdiction. Top speed capability restrictions vary from 25 miles per hour to no limit. A few states require that the truck meets federal safety standards for "low-

¹⁹ Insurance Institute for Highway Safety, "Medium-Speed Vehicles," July 2010, <http://www.iihs.org/laws/mediumspeedvehicles.aspx> (accessed July 13, 2010).

²⁰ Insurance Institute for Highway Safety, "Mini-truck State Laws," July 2010, <http://www.iihs.org/laws/minitrucks.aspx> (accessed July 13, 2010).

speed vehicles.” This is the same standard that Minnesota requires for operation of NEVs and MSEVs.

Segways. The majority of states allow Segways to be used on public sidewalks and bike paths, although they are restricted to just sidewalks in some cases.²¹ A handful of states have not enacted legislation governing their use, and they are not allowed in a couple of states.

For more information about vehicles and traffic regulation, visit the transportation area of our web site, www.house.mn/hrd/hrd.htm.

²¹ Governor’s Highway Safety Association, “Segway Laws,” May 2010, Accessed 27 May 2010
<http://www.ghsa.org/html/stateinfo/laws/segway_laws.html>.