

Off-Road Vehicle/Motorcycle Noise Information Sheet



January 2008

This information sheet was prepared for the Washoe County Citizen Committee appointed by the Washoe County Commission to review and provide suggestions on a draft nuisance ordinance. Staff researched information on off-road vehicle/motorcycle noise as regulated in the adjacent states of California and Oregon. The information contained within this document is intended to assist the Committee in their nuisance related discussions and is neither comprehensive nor all encompassing for California and Oregon regulations.

CALIFORNIA REGULATIONS

California classifies off-road vehicles, to include trail motorcycles, snow mobiles and sand buggies, as Off-Highway Vehicles (OHV). OHVs must be registered as an OHV, unless otherwise registered for regular highway use. OHVs registered for on-highway use may be operated both on and off the highway. A vehicle registered only as an OHV cannot be operated on public streets.

Green and Red Stickers

The Green or Red self-adhesive sticker issued by the California Department of Motor Vehicles (DMV) serves as the OHV license plate. Green or red stickers are based on California air quality regulations.

- Green stickers** are issued for all 2002 year model and older OHVs, including those that were previously issued a red sticker, and to 2003 and newer vehicles that comply with the California Air Resource Board emission standards for California. Green stickers allow year round use at all California OHV riding areas.
- Red stickers** are issued only for 2003 and newer year model OHVs that are not certified to California OHV emission standards and which have a "3" or "C" in the eighth position of the vehicle identification number (VIN). Red stickers allow seasonal use only in California OHV riding areas.

All vehicles operated off-highway on public lands in California are required to be street-licensed or registered as an off-highway vehicle (OHV). Visitors from another state must either possess current registration from their home state or purchase a California Nonresident OHV Use Permit (sticker) before operating the vehicle off-highway. OHV registration is administered by the California DMV.

Noise Standards

Effective January 1, 2003, all OHVs in California must be equipped at all times with a silencer or muffler which limits noise emissions. OHVs must meet the established noise limit standards prior to sale in the State of California. Noise limit standards are outlined in the table shown on the following page:

OHV manufacture date	Noise limit
Before January 1, 1986	101 dbA
On or after January 1, 1986	96 dbA
Competition OHV manufacture date	
Before January 1, 1998	101 dbA
On or after January 1, 1998	96 dbA

Testing is done at 20 inches using procedures established by the Society of Automotive Engineers under Standard J-1287. A brief summary of the standards include:

- Sound meters must meet the Type 1, Type S1A, Type 2 or Type 2A requirements of ANSI S1.4-1983 and must be equipped with a windscreen.
- Sound meters must be calibrated (to an accuracy of ± 0.5 dB) before the first test of the day, at intervals in the field of no more than one hour between calibrations, and at the end of the test day.
- During the test, the engine is run with the gearbox in neutral and at a speed equal to one-half of the rated engine speed (± 200 rpm). The engine must be at normal operating temperature during the test.
- The sound meter will be set for the A-weighting network and for slow, dynamic response. Testing is done on both sides of the vehicle with the sound meter located 20 inches ($\pm \frac{1}{2}$ inch), at the same height as the vehicle's exhaust outlet, and at an angle of 45 degrees (± 10 degrees) to the normal direction of travel of the vehicle.

OHV recreation, to include regulation of the OHV noise standards, is administered by the California State Parks.

OREGON REGULATIONS

Oregon considers all vehicles intended for off-highway use to be All-Terrain Vehicles (ATVs). ATVs are divided into three classes:

- Class I ATV** (Quads, 3-wheelers). Vehicles 50 inches wide or less, dry weight of 800 pounds or less, having a saddle or seat, and travels on 3 or more tires.
- Class II ATV** (Jeeps, Sand rails, SUVs, etc). Vehicles wider than 50 inches and dry weight more than 800 pounds.
- Class III ATV** (motorcycles). Vehicles on two tires and dry weight less than 800 pounds.

All ATVs must have the appropriate class of ATV sticker (e.g., Class III ATV Sticker) and ATV operators must possess either a valid driver's license or an Operator's Permit. Operators on a Class I ATV need not have a license if accompanied by a properly licensed/permitted person 18 years of age or older. Operators aged 12 years or more on a Class III ATV must have a license, Operator's Permit, or be accompanied by a properly licensed/permitted person 18 years of age or older.

The Oregon Parks and Recreation Department administers operation permits for off-road public land ATV use (i.e., sell ATV stickers). No matter the class of ATV, an operator must have either an Oregon OHV Operating Permit (ATV sticker) or a resident state OHV operative permit to operate an ATV on public lands in Oregon. Oregon ATV Operating Permits can be issued to non-resident operators. The Oregon DMV does not require titling or registration of Class I or

Class III ATVs. Class II ATVs must be properly titled and registered, unless operated solely off-road.

Noise Standards

Safety equipment standards for off-road vehicles are regulated through Oregon State Statutes. All off-road vehicles must be equipped with a muffler that conforms to the current noise level and defect standards of the Oregon Department of Environmental Quality. The mufflers must be maintained at 99 decibels or below, depending on the vehicle and the area. Current sound levels are outlined below:

All of Oregon:	
Motorcycles	99 dB
Front engine (SUV, Truck)	95 dB
Mid & rear engine (quad, sand rail)	97 dB
Sand Lake Recreation Area	97 dB
Oregon Dunes National Recreation Area	93 dB

Field testing of these noise standards is done using the “20 inch test”. Vehicle sound is measured by a decibel meter 20 inches and 45 degrees from the exhaust outlet. For Class I and Class III ATVs, the test is performed at 50% of the manufacturer’s RPM recommendation. For Class II ATVs, the test is performed at 75% of the engine’s maximum RPM.

HOW LOUD IS LOUD?

Noise is measured in decibels, which is a unit used to express the relative intensity of sounds on a scale from zero for the average least perceptible sound to about 130 for the average level that causes pain in humans. Charts illustrating the range of sound from around 20 decibels to over 150 decibels are found in both government and private sector publications. The following chart is from the US Forest Service and US BLM web site for the Deschutes & Ochoco National Forest, Crooked River National Grassland areas:



The chart refers to the Oregon State legal limit of 99 dB. ODNRA is the acronym for the Oregon Dunes National Recreation Area, wherein the current legal noise standard is 93 dB with a goal to lower that standard to 90 dB.