

## When is the new sign appropriate?

The sign should be used at the beginning of any stretch of road where bike speeds can reasonably be expected to match or exceed motor vehicle speed. On long downslopes, it is probably a good idea to put the signs about once a mile or after each intersection.

On winding mountain roads, bike speeds will almost certainly match the vehicle speeds on sharp downhill curves, and so signs should be placed there, even if the average slope is not steep enough to justify signs for the straight portions of the road. The reminder to motorists is particularly important in places where sight distance is limited, and motorists often drive so fast that their stopping distance exceeds their clear sight distance.

Standard formulæ can be used to compute the speed of a bicycle on any slope with any power input. The following table indicates the slope at which many bicyclists can be expected to reach the speed limit for various speeds. Of course, top speed may not be reached on short slopes. It is best to measure the speed of bicyclists riding down the slope in a full racing crouch to determine actual speeds, since air drag is the main determinant of speed in downhill riding.

<b>Speed limit</b>	<b>slope</b>
25 m.p.h.	3%
30 m.p.h.	4%
35 m.p.h.	5%
40 m.p.h.	7%
45 m.p.h.	8%
50 m.p.h.	10%
55 m.p.h.	12%

The signs are particularly needed where roads are narrow, where the road curves, and where the right edge of the road is not suitable for bicycle riding. Signs should not be limited to designated bike routes, as the warnings are particularly important on the roads which provide no additional lane width for motorists and bikes to share the lane.

# Downhill Bikes

**a signage recommendation  
by People Power**



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## Why is a new sign needed?

When riding down steep slopes, bicyclists attain speeds comparable to or exceeding that of motor vehicles. At these speeds it is not safe for bicyclists to ride as far to the right as is possible, but many bicyclists (and police) misinterpret California Vehicle Code 21202(a) as requiring this unsafe behavior. What the law actually says is

*Any person operating a bicycle upon a roadway at a speed less than the normal speed of traffic moving in the same direction at such time shall ride as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations: ...*

Clearly, when bicycles are traveling the same speed as motor vehicles, the standard speed positioning rule of traffic suggests that they ride in the main travel lane; and when they are traveling faster than motor vehicles, they should be passing on the left, not the right.

The striping of bike lanes does not change the speed positioning rules. Even discriminatory rules like 21208(a), which requires bicycles to stay in bike lanes, only requires this behavior of bikes that are slower than normal traffic.

Because bicyclists, motorists, and police officers are often not aware of the exact wording of the Vehicle Code, it is necessary to inform them of the safe and legal behavior for bicyclists in areas where bikes can reasonably be expected to travel at the speed of motor vehicle traffic.



Figure 1. Proposed new sign for steep downhill roads.

## What sign is proposed?

The sign shown in Figure 1 was photographed in September 1993 on Folsom Street in Boulder, Colorado. It is a simple, immediately understandable sign that informs motorists and bicyclists of the correct road positioning for bicycles. People Power recommends this sign for use throughout Santa Cruz County.

The sign should be large enough to be readable by motorists travelling at the normal speed for the road. Painting the sign black on yellow, and making the sign a standard size and shape, will make it immediately recognized as a traffic sign, not a directional or advertising sign.