



Variable Speed Limit Frequently Asked Questions

What is a Variable Speed Limit (VSL)?

A variable speed limit (VSL) sign is an electronic version of a regular speed limit sign with an LED display of the regulatory speed limit number (i.e. the enforceable speed limit) which can be changed to best suit conditions on the highway. The VSL signs will change the speed limit as needed based on real-time traffic speed and volume, weather conditions, road conditions and traffic incidents.

Why are VSLs important?

With a traditional static speed limit, drivers may adapt their own speed based on changing conditions, but these adjustments are often insufficient to maintain safe operations and are up to the driver. Crash data analysis indicates that incidents rise during adverse conditions, such as rain, snow, ice or reduced visibility. VSL systems proactively address these challenges by dynamically adjusting speed limits to make travel safer and more reliable.

How are VSL systems used in Colorado?

In Colorado, each VSL corridor is unique, with specific characteristics such as grade, number of lanes and past safety performance. The VSL algorithm is tailored to calculate an appropriate speed limit based on real-time conditions within the corridor. For example, the I-70 Mountain Corridor often sees congestion due to weather conditions such as snow, making it a good corridor for VSL.

Where will VSL systems be implemented in Colorado?

VSL corridors are being deployed with flow-based and weather-based algorithms on the I-70 Corridor in Glenwood Canyon and on the I-70 Mountain Express Lanes. Additional corridors on Wolf Creek Pass and eastbound I-70 from Genesee to Wadsworth are under consideration.

Are these speed limits enforceable?

Yes, the speed limit posted on VSLs is the enforceable speed limit; it is not a recommended or suggested speed limit. Drivers traveling at speeds faster than what is posted can be ticketed for speeding, whether they are in the general purpose lanes or Express Lanes. There may be times when some signs are blank while crews make adjustments or fix any programming. Even if one or more signs are blank, the subsequent signs will show the enforceable speed limit.



Variable Speed Limit sign on I-70 near Idaho Springs

Benefits of Variable Speed Limits

- **Reduces Stop-and-Go Traffic:** VSL can help minimize disruptions caused by weather, crashes, or other road conditions, reducing stop-and-go traffic and improving overall traffic flow.
- **More Reliable Travel Experience:** By providing real-time speed limit adjustments, VSL aims to ensure smoother traffic flow, more reliable travel times and less delay by proactively managing speed on congested roadways.
- **Crash Prevention:** VSL prepares drivers for upcoming road conditions, reducing the likelihood of crashes. By posting lower speed limits in advance, VSL mitigates the risks associated with reduced friction and adverse weather.
- **Efficient Corridor Management:** VSL enables the efficient movement of vehicles through a corridor. By dynamically adjusting speed limits, the system helps optimize traffic flow, especially during peak hours or adverse conditions.
- **Safety in Work Zones:** Reduced speed so that vehicles approach construction areas and pass-through work zones at safer speeds.