FREQUENTLY ASKED QUESTIONS

1. What is VSL?

VSL stands for "variable speed limits," which is a technique to coordinate the movement of traffic through updated speed limits in order to more efficiently move traffic and improve safety. A variable speed limit system collects data in real time throughout a corridor and sets the speed limit upstream of congestion to prevent stop and go traffic and at the same time, alert drivers to hazards ahead.

2. Where is VDOT going to implement VSL?

The Virginia Department of Transportation is implementing VSL along Interstate 95 in the northbound direction between mile markers 115 and 130 for a total of 15 miles. This is from just south of Thornburg to Route 3 in Fredericksburg. Based on the expected success of this deployment, VDOT anticipates implementation of VSL at additional locations throughout the Commonwealth.

3. Why is VDOT implementing VSL?

VSL has successfully been used in Virginia to reduce crashes on I-77 at Fancy Gap, as well as on the approaches and in the Hampton Roads Bridge-Tunnel and on the Monitor-Merrimac Memorial Bridge-Tunnel. The I-95 implementation is expected to mitigate recurring and nonrecurring congestion and improve safety. VSL has been shown to be an effective tool when tailored to the unique characteristics of the location where it is applied.

4. What are the benefits of VSL?

VSL can improve throughput, reduce travel delay, and enhance safety by reducing the frequency and severity of crashes.

5. When will VSL be operational?

The VSL segment on I-95 will be operational in the fall of 2021.

6. How will the VSL be evaluated?

VDOT will be determining the effectiveness of the system by measuring improvements for metrics in safety and congestion. Some of the metrics may include; person hours of delay, crash rates and types, incident delay, and frequency of speed reductions. It is anticipated that the evaluation will be continual as the system operates.

7. How does VSL improve safety?

Variable speed limits reflect current travel conditions and drivers will expect congestion ahead when they see reduced speed limits. Drivers will approach the congestion at slower speeds providing more time to react and preventing crashes. The system will collect traffic volumes, speeds and traffic density and use that data to continually improve the way in which it sets the speed limits to achieve the best safe throughput. Speed limits will only be reduced when necessary.

8. Will I have to quickly brake to comply with a reduced speed limit?

The system will only allow speeds to be reduced by 10 mph at a time and must hold that speed for at least a minute so drivers can reduce speed at a comfortable rate. When traffic clears, however, the speed limits can go directly up to their maximum allowable "normal" speed limit.

9. Will my trip be longer if you are dropping speeds?

It has been documented through other VSL applications worldwide that a smooth flow of traffic moves faster than a surge of traffic that then comes to a halt or stop-and-go conditions. In addition, more consistent speeds reduce the risk and severity of crashes, which are also the cause of travel delay.

10. How will enforcement take place?

Speed limits posted on VSL are enforceable just like regular speed limit signs. Enforcement authorities will have access to real-time changes in posted speed limits along the VSL corridor.

11. Will VDOT be monitoring individual vehicles?

No. VDOT is using a type of detection that uses radar to detect the presence of each vehicle and its speed. It is not capable of reading license plates or capturing any identifiable information.

12. What does VSL look like?

VSL looks like a normal speed limit sign with black text on a white background. The actual speed limit number is digital and displays the speed with LEDs, but it will appear as the same white sign with black text. The VSL signs will appear more frequently than regular speed limits signs. In the I-95 VSL corridor, they will be spaced from ½ to 1-mile apart. The I-95 VSL will have permanent mounted speed limit signs and vehicle detectors, like the I-77 system. Some additional portable changeable message signs will be used to inform travelers of lowered speeds, which can be moved to other locations as the need arises. The variable speed limit signs will be operational 24 hours a day. Static speed limit signs will be removed from this segment of I-95 northbound.

13. Where has VSL been implemented before?

VSL has been implemented all around the United States and in many other countries. Each implementation of VSL is unique to the characteristics of the roadway and the particular purpose of that implementation. For example, VDOT implemented VSL on I-77 at Fancy Gap to improve safety during low visibility (foggy) conditions. The I-95 VSL is intended to mitigate recurring and nonrecurring congestion and improve safety.

14. How do you determine what the speed limit should be?

Vehicle detectors will collect traffic speed and volume data, which will be fed into a software program to recognize when traffic is approaching unstable conditions (for example, very high volume and fast speed) and assign incrementally lower speeds to harmonize traffic flow and reduce the probability of crashes and congestion. Once traffic flow stabilizes, the posted speed limit will return to the maximum speed. Speeds can also be lowered manually by operators at VDOT's Traffic Operations Center to create safer conditions in work zones, in weather events, and around traffic accidents.

15. How low will the speeds go?

The lowest speed that will be displayed on the I-95 implementation will be 35 mph. This is consistent with the many VSL systems across the country.

16. Where can I find more information about the VDOT VSL program?

More information can be found on the VDOT website: http://www.virginiaDOT.org/variablespeedlimits

17. How is VSL being funded?

VDOT is using funds from the I-95 Corridor Improvements Program and the Innovation and Technology Transportation Fund.

18. Will WAZE tell me when speed limits are reduced?

VDOT has been exchanging traffic condition information with WAZE for many years for mutual benefit. Coordination between VDOT and WAZE is on-going. The VDOT software program that sets the speed limits will provide the current posted speeds to WAZE.

19. Will I be notified when I am traveling in the area where speed limits may be reduced?

There will be static and dynamic signs informing travelers when they are approaching the VSL area, both on the mainline interstate and on all entrance ramps in the area. The VSL signs will also have beacons (lights) that will flash when the speed limit is reduced from the normal maximum speed limit. In the future, it is possible that in-vehicle apps (e.g., Apple CarPlay, Android Auto, etc.), may also incorporate the real-time speed limit information VDOT will make available.

20. How will VDOT maintain the VSL system?

The system will be designed with backup power to protect against outages of 24 hours. Should a system component experience a failure, VDOT's on-call maintenance contractor will schedule a repair. The system will be given high priority so that repairs will be completed within an 8-hour time frame. In the unlikely circumstance that an outage occurs, standard operations procedures will be in place to ensure proper and effective operations of the variable speed limit system. The system is designed with resiliency of dual indicated signs. Components have replacement packages that can be installed quickly in case of failure or damage.