

I-66 ATM Treatment Definitions



Continuous CCTV Camera Coverage

This treatment provides closed-circuit television (CCTV) camera coverage of the roadway from the Traffic Operations Center (TOC) to monitor traffic conditions, verify incidents, etc. It will increase coverage from what is currently available, offering constant viewing of all roadway lanes and shoulders, and limited views of on-ramps and off-ramps.



DMS



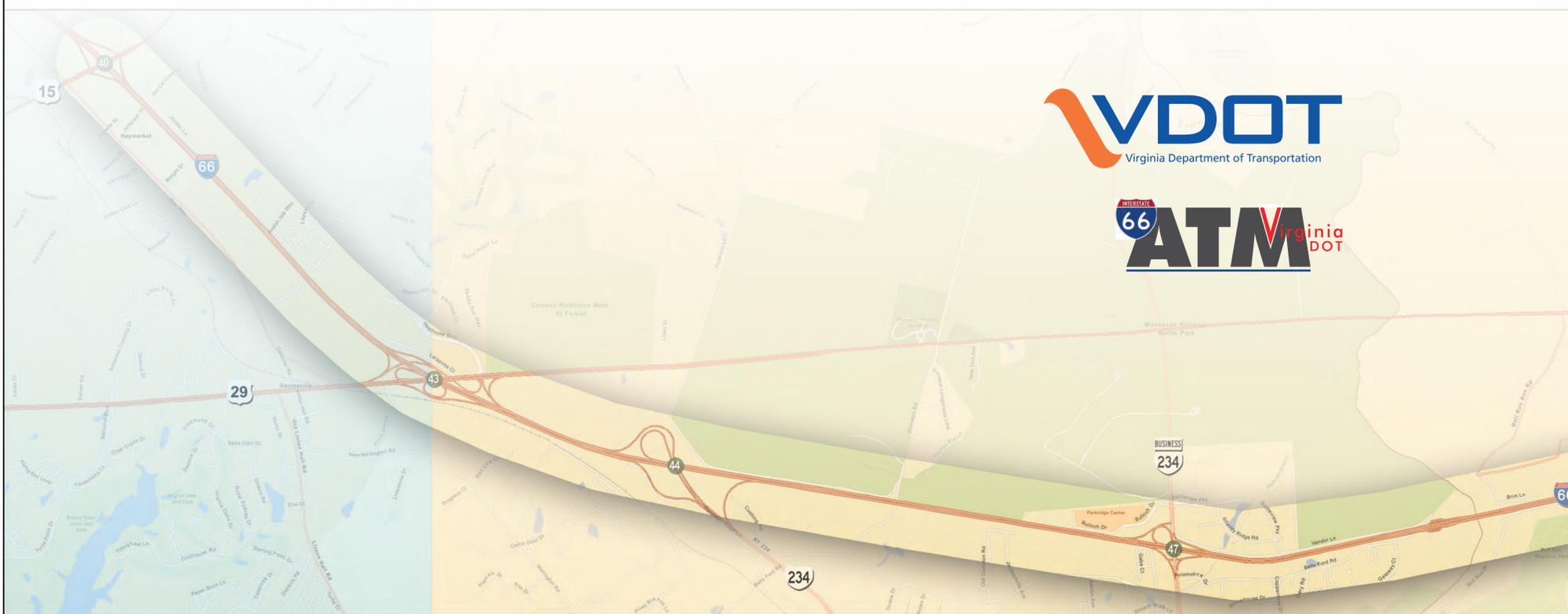
Dynamic message signs (DMS) provide information directly to motorists along the roadway. The messages being displayed can be either manually programmed or dynamically assigned based on current roadway conditions or a time-based schedule. The DMS signage includes HOV and advisory signs, as well as those used for variable speed limit-related advisory messages (see Back of Queue Warning, below). They may be mounted to structures supporting the lane control system or in stand-alone locations in advance of major roadway interchanges.

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Vehicle Detection

Vehicle detection provides real-time traffic data such as speed, volume, etc. This data is aggregated over short time periods (e.g., 20-seconds) and transmitted to the TOC or used locally to determine the appropriate ATM strategies to be implemented.



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Auxiliary Lane Control System

This treatment, currently in place on I-66, allows the shoulder to be used as a travel lane only during specific times of day. The expanded treatment supports use of the shoulder during high-volume periods, regardless of time of day, or if there is an incident blocking the lanes. The system uses signals above the lane to show either a green arrow or red "X" to indicate when the shoulder is open or closed to traffic.



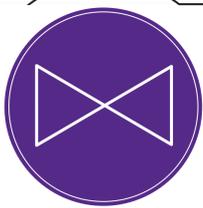
Lane Control System

This treatment uses overhead gantries with lane control indicators over each travel lane to control traffic. Depending on circumstances, they show advisory speed limits, high-occupancy vehicle (HOV) lane restrictions, green arrows, yellow arrows, or red "X's" to manage traffic. These gantries can also accommodate other devices such as CCTV, DMS and vehicle detectors.



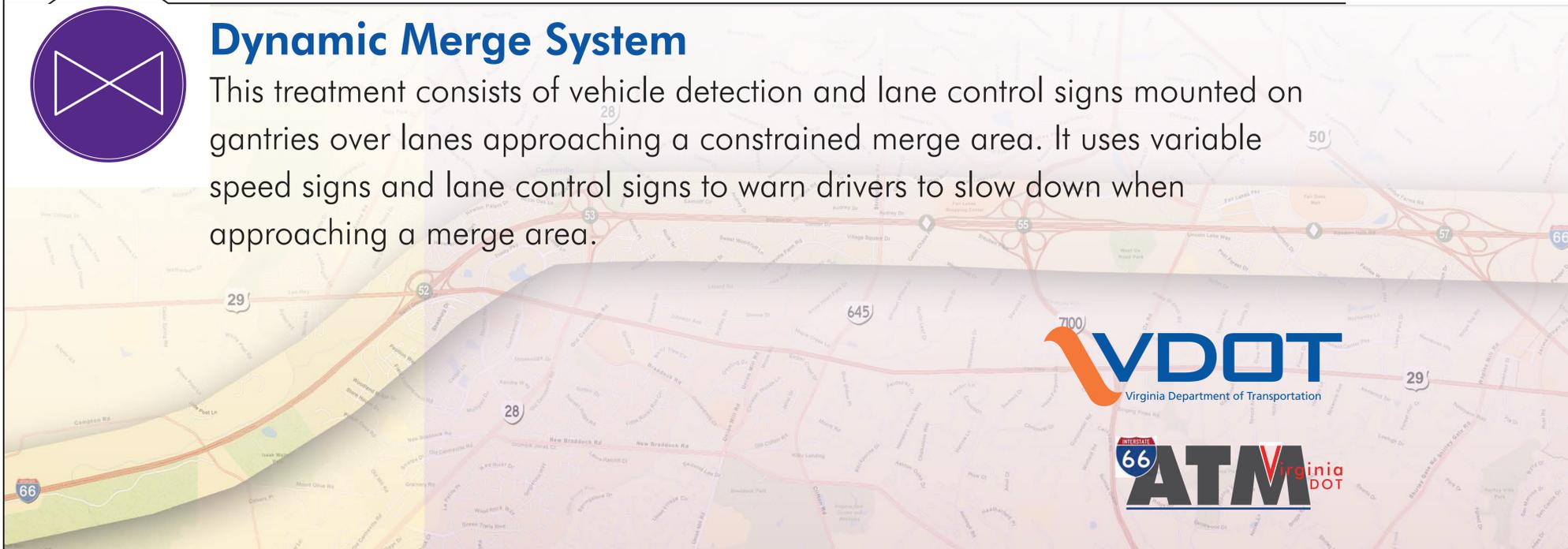
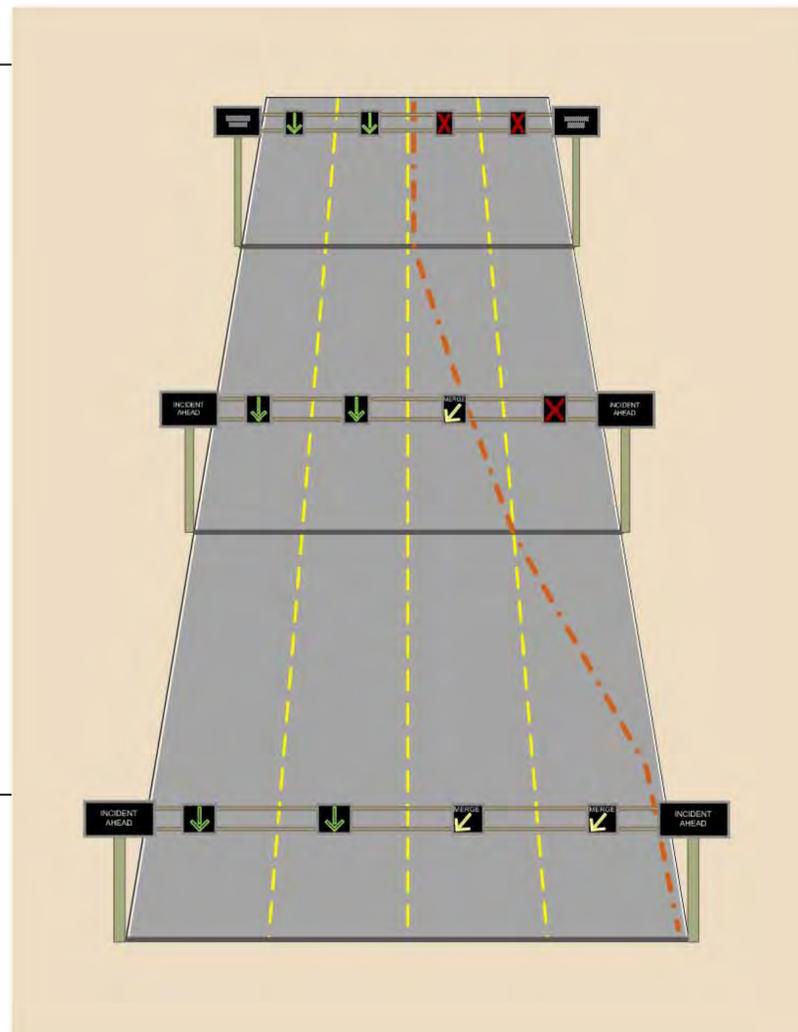
Back of Queue Warning System

This system provides queue detection and back of queue warnings on the freeway. Vehicle detectors are placed in strategic locations to locate the back of a queue of vehicles upstream of an incident or bottleneck in order to warn approaching motorists. This treatment is used with the Lane Control System gantries to display a lower speed limit to slow traffic approaching the queue, thus improving safety and potentially improving flow through the bottleneck.



Dynamic Merge System

This treatment consists of vehicle detection and lane control signs mounted on gantries over lanes approaching a constrained merge area. It uses variable speed signs and lane control signs to warn drivers to slow down when approaching a merge area.



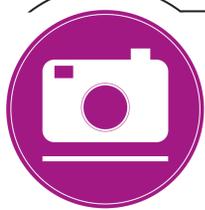
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Redundant CCTV Camera Coverage



This treatment provides redundant backup CCTV camera coverage in case of device failure. It also allows the TOC to monitor video of an incident in the auxiliary lane while simultaneously monitoring activity in the travel lanes. Power and communications supporting the redundant camera system will be separate from the primary system.



Auxiliary Lane Monitoring

This treatment provides monitoring of the roadway shoulder to automatically recognize a stopped or disabled vehicle and alert the TOC. The system will also provide TOC personnel a faster means to “sweep” the shoulder lane before opening it for traffic.



System-Wide Adaptive Dynamic Ramp Metering

This treatment provides ramp metering on I-66 at select, inside-the-Beltway on-ramps in order to regulate the flow of vehicles on to the highway. The ramp meters will be “adaptive,” meaning that their timing will vary according to traffic conditions.



Enhanced Emergency Pull-Out

This treatment provides an emergency pull-out from the shoulder lane so that vehicles will periodically have areas where they can stop when the shoulder is being used as a travel lane. This includes vehicle presence detection so that the TOC will be automatically alerted when a vehicle is in the pull-out area.

