



DLMS

Dynamic Lane Merge Systems

STOPPED
TRAFFIC
AHEAD

USE
BOTH
LANES

MERGE
AHEAD

USE
BOTH
LANES

MERGE
HERE

TAKE
TURNS

DYNAMIC LATE MERGE
INCREASES
ROAD CAPACITY AND
REDUCES BACKUPS



Dynamic Lane Merge Systems are designed to improve safety and efficiency on roadways with a lane merge.

When traffic is congested, a DLMS system advises motorists to merge late. This reduces backups and increases road capacity and throughput.

In low-traffic, free-flow conditions, it makes sense for cars to merge early, before the lane taper, as they find openings in traffic.

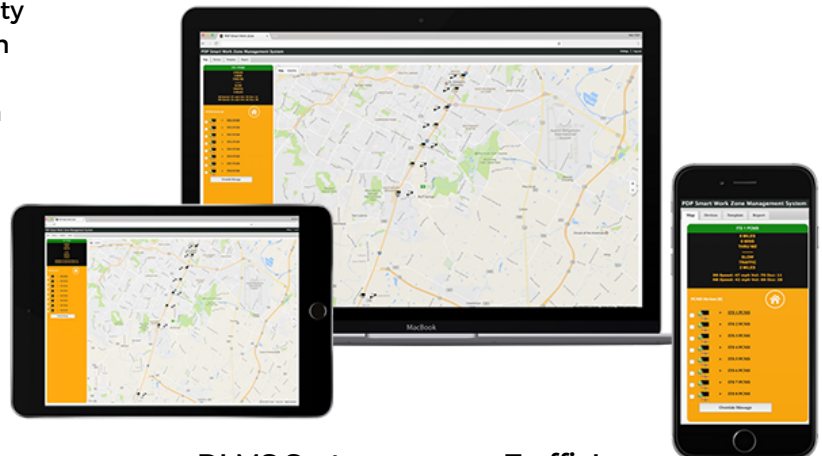
In high-volume congested conditions, early merge generates long queues, and reduces road capacity and safety. Speed differentials between the open and closed lane increase, as some drivers speed forward in the closed lane, darting into the open lane at the last minute. This creates unsafe conditions.

DLMS Systems encourage drivers to merge in the optimal pattern for the current road conditions.

According to FHWA Guidance, DLMS can improve operations, reduce delay and queue lengths, and increase safety in the work zone.

Benefits Found in Studies

- Higher Capacity and Throughput
- Reduced Queue Lengths and Faster Queue Discharge
- Reduced Travel Time Delay
- Decreased Aggressive Behavior
- Improved Safety
- Reduced Driver Confusion in Merging
- Reduced speed differentials between lanes



DLMS Systems run on TrafficLynx, QLynx's easy-to-use, web-based ITS platform.



QLynxTech.com
404-803-5487
Sales@QLynxTech.com

References:

- According to FHWA Guidance, DLMS can improve operations, reduce delay and queue lengths, and increase safety in the work zone.
 - Reference 1
- Benefits Found in Studies: Higher Throughput
 - Reference 2,3,5
- Benefits Found in Studies: Reduced Queue Lengths
 - Reference 3,4,6
- Benefits Found in Studies: Faster Queue Discharge
 - Reference 5
- Benefits Found in Studies: Reduced Travel Time Delay
 - Reference 2
- Benefits Found in Studies: Decreased Aggressive Behavior
 - Reference 4
- Benefits Found in Studies: Improved Safety
 - Reference 4
- Benefits Found in Studies: Reduced Driver Confusion in Merging
 - Reference 4
- Benefits Found in Studies: Reduced speed differentials between lanes
 - Reference 3,4

Referenced Studies and Websites:

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https://www.workzonesafety.org/fhwa_wz_grant/atssa/atssa_dynamic_lane_merging
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3. Dynamic Late Merge Control at Highway Work Zones: Evaluation, Observations, Suggestions, Kang, Chang, Paracha, TRB, 2006
4. Evaluation of the 2004 Dynamic Late Merge System, Prepared for Minnesota DOT by URS Corporation, 2004
5. Two Simplified Dynamic Lane Merging System (SDLMS) for Short Term Work Zones, Harb, Radwan, Ramasamy, Abdel-Aty, Pande, Shaaban, Putcha, TRB, 2009
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