

QUEUE WARNING

Description

Queue warning's basic principle is to inform travelers of the presence of downstream stop-and-go traffic (based on real-time traffic detection) using warning signs and flashing lights. Drivers can anticipate an upcoming situation of emergency braking and slow down, avoid erratic behavior, and reduce queuing-related collisions. Dynamic message signs show a symbol or word when stop-and-go traffic is near. Speed harmonization and lane control signals that provide incident management capabilities can be combined with queue warning. The system can be automated or controlled by a traffic management center operator. Work zones also benefit from queue warning with portable dynamic message signs units placed upstream of expected queue points.

Target Market

- Freeways or roads experiencing frequent congestion
- Facilities with frequent queues in predictable locations
- Facilities with sight distance restricted by vertical grades, horizontal curves, or poor illumination

How Will This Help?

- Reduce primary and secondary crashes by alerting drivers to congested conditions.
- Delay the onset of congestion, improving smooth and efficient traffic flow and trip reliability.
- Provide environmental benefits through decreased emissions, noise, and fuel consumption.

Success Stories

- IH 610, Houston—A queue warning test system increased average speeds and significantly reduced crash-causing speed variances among lanes.
- Oslo, Norway—Variable signing on main routes improves motorist behavior and improved safety.

Implementation Issues

When queue warning is included in a larger traffic management project that has lane control signals and variable speed limits, it is possible to reduce the speed incrementally between gantries and evacuate traffic from one lane to provide access and shelter for emergency vehicles. Work zones also take advantage of queue warnings. Many agencies use mobile message signs to warn approaching traffic of queues. Queue warning can be more effective when deployed

in conjunction with speed harmonization. When implemented with speed harmonization, the queue warning pictograms and/or flashing lights need to be visible to all vehicles. An expert system that deploys the strategy based on prevailing roadway conditions without requiring operator intervention is optimal.



Missouri Department of Transportation

Cost:	●●○○○
Time:	Moderate
Impact:	Corridor
Who:	State
Hurdles:	Public Support, Operations