RAMP FLOW CONTROL

Description

Ramp flow control (also known as ramp metering) uses specialized traffic signals that release vehicles onto a freeway in a smooth and even manner. The goal is to keep entering vehicles from crowding out freeway traffic and creating stop-and-go traffic that ripples upstream and slows the entire freeway. By releasing one or two vehicles at a time, flow signals keep the freeway moving efficiently for a longer period of time. Less stop-and-go traffic means fewer crashes that cause additional congestion. In return, vehicles will wait on the ramp. This strategy may not completely eliminate traffic congestion, but can delay its onset and shorten its duration.

Target Market

Flow control signals are best implemented in locations and at times where a large group of vehicles enter a freeway at one time, including freeway entrance ramps (on freeway sections near where stop-and-go traffic occurs). High Occupancy Vehicle (HOV) by-pass lanes can be added to ramps to give priority to those users.

Cost:	●●●○○
Time:	**Short**
Impact:	**Corridor**
Who:	**State**
Hurdles:	**Acceptance**

How Will This Help?

- Decreased crash rates in signal-controlled areas supported in several studies.
- Increased volume throughput and speed, which reduces travel time for all users.
- Relatively low cost to install and maintain.

Success Stories

- Houston and Atlanta report significant travel-time savings.
- Milwaukee, Portland, Detroit, and Los Angeles report significant increases in travel speeds.
- Portland, Sacramento, and Los Angeles report significant reduction in crash frequency.
- Minneapolis reports significant reduction in emissions.

Implementation Issues

How quickly (if at all) the public accepts ramp flow control remains the pivotal issue in implementation. The public must be convinced of the benefits that can be achieved from ramp flow control. The operators must also stay vigilant in adjusting operation strategies to take maximum advantage of the system.

For more information, please refer to: http://mobility.tamu.edu/mip/strategies.php.

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