



Solution: Ramp Metering

Ramp meters are traffic signals placed at freeway on-ramps. Similar to the way signals at local intersections regulate traffic, ramp metering signals manage traffic entering a freeway by optimizing the use of available gaps for vehicles to merge.

Ramp metering smooths out the flow of traffic and enhances safety by balancing conflicting traffic demands. Smoother traffic flow increases mobility and reduces the potential for accidents. Ramp metering in Marin County makes sense.

Ramp meters have been activated on several major corridors around the region, and metering is underway for other congested corridors over the next few years, including:

- Highway 101 in Sonoma County
- I-80 in Solano County
- Highway 4 in Contra Costa County
- Highway 101 in San Mateo County
- I-680 in Santa Clara County

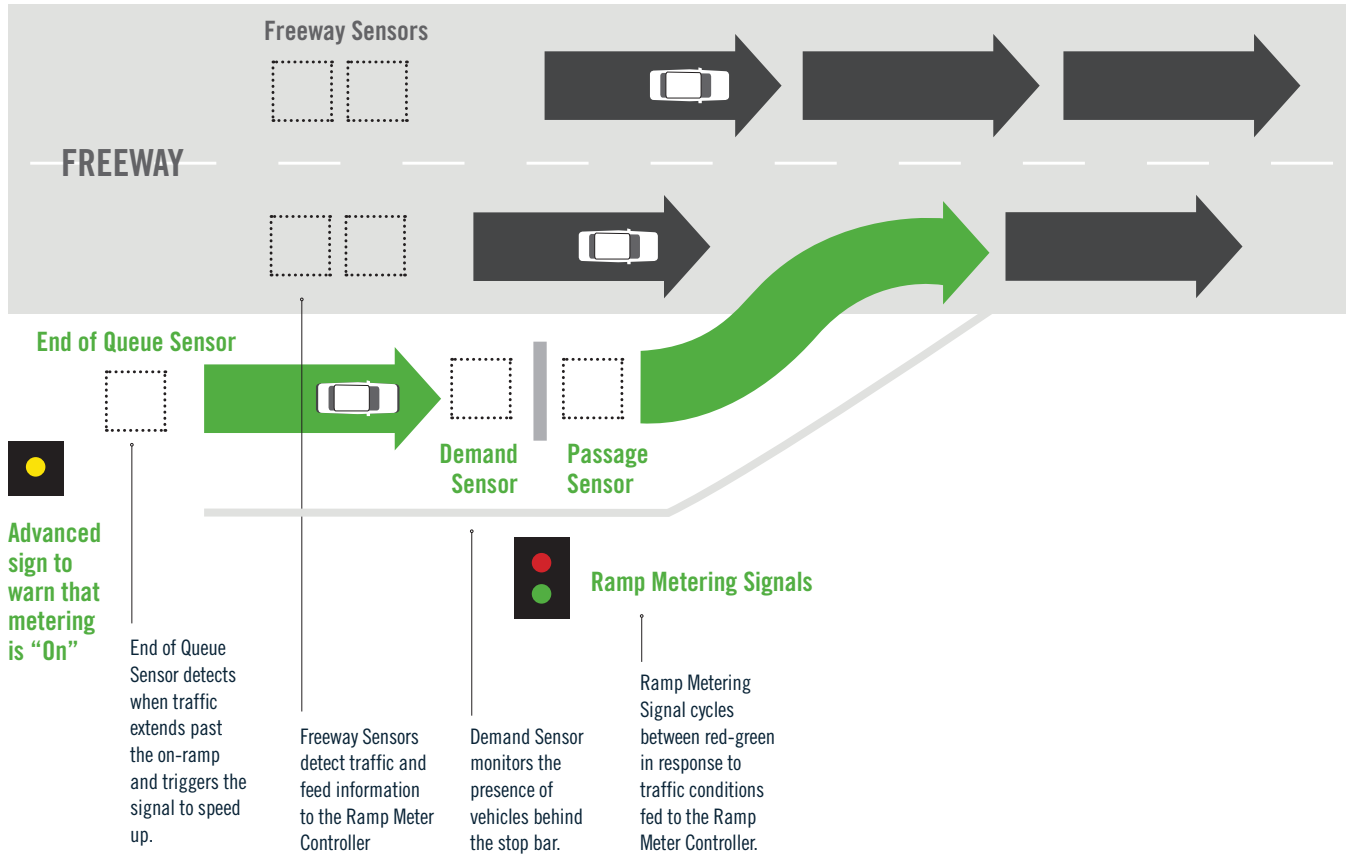
**LESS
CONGESTION**
5–15%

**FEWER
ACCIDENTS**
15–50%

KEY BENEFITS:

1. Reduces need to cut through city streets
2. Reduces congestion
3. Eliminates off-ramp to on-ramp cut through traffic
4. Smooths out freeway traffic flow
5. Reduces accidents caused by traffic merging onto freeway
6. Improves air quality

How Ramp Metering Works



RAMP METERING WORKS! HERE'S WHY:

1. Queues from metered ramps do not impede operation of local streets
2. Communities are not disproportionately burdened with ramp delays
3. HOV preferential lanes at ramps are included, if feasible
4. When queues at metered ramps cannot be accommodated, the metering rates increase, or stay on green to flush the queue
5. Freeway and arterial operations are coordinated to ensure efficient operation of both facilities

When will it happen?

Implementing ramp metering along Highway 101 involves a number of activities such as developing design and construction plans, determining metering rates, installing equipment, and modifying some on-ramps. The following schedule outlines the activities and responsible agencies.

Winter 2014	Summer 2015	Winter 2015	Spring 2016	Spring 2016
Complete design plans	Start ramp metering improvements (install equipment, modify ramps) (Caltrans) and Start Ramp Metering Implementation Plan (TAM, Cities, Caltrans, and MTC)	Complete ramp metering improvements (Caltrans) and Ramp Metering Implementation Plan (TAM, Cities, Caltrans, and MTC)	Activate ramp meters (Caltrans)	Conduct before and after studies (TAM, Cities, Caltrans, and MTC), and modify metering rates as appropriate (Caltrans)

Managing congestion through technology

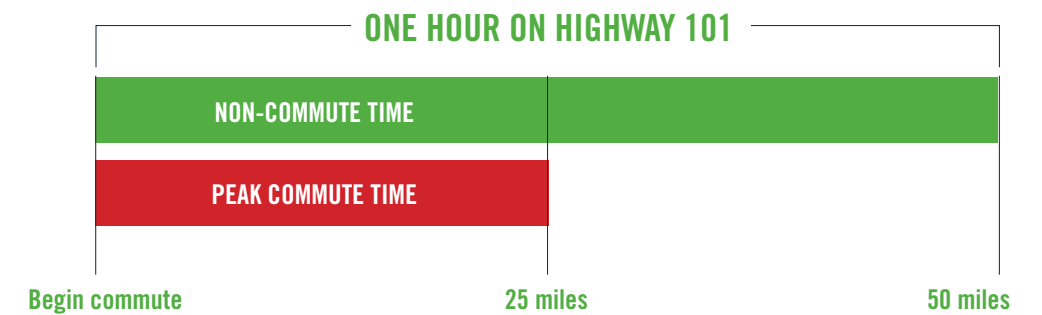


The Metropolitan Transportation Commission, in partnership with Caltrans and local congestion management agencies, are working together to lessen the effects of congestion by improving freeway operations through the use of technology. The Freeway Performance Initiative was launched in 2007 to develop and implement cost-effective strategies to help mitigate problems associated with congestion. Among these strategies are ramp metering, message signs, roving tow trucks to clear incidents, and 511 traveler information.

To learn more, contact Transportation Authority of Marin staff Bill Whitney and Dan Cherrier at 415-226-0815

Stuck in Marin County traffic?

Motorists traveling along Highway 101 experience significant delays during peak commute times. During the evening commute, it can take drivers **more than twice as long** to travel from Marin City to the Sonoma County line.



WHAT CAUSES CONGESTION?

Highway congestion is caused when traffic demand exceeds the available capacity of the highway system. Congestion varies from day to day because demand and capacity are constantly changing. Factors such as time of day, day of the week, and season of the year influence demand, as do recreational travel, special events, and emergencies (e.g. evacuations).

Roughly half of the congestion happens virtually every day during peak-travel periods. The other half of congestion is caused by non-recurring congestion, or temporary disruptions such as crashes and disabled vehicles that take away part of the roadway from use.

