

# Changeable Message Signs (CMS)



## Description

Changeable Message Signs (CMS) are signs located along the freeway that are connected to the transportation management center (TMC). TMC operators use these signs to distribute timely information to commuters that can assist the traveler in preparing for what is ahead. CMS provide an effective method of broadcasting information about downstream corridor delays, traffic incidents, estimated travel times and tolling information.

CMS are one of the traditional ITS elements deployed for use in Advanced Traffic Management System (ATMS) techniques. The use of changeable message signs is an effective method of providing traveler information immediately to the motorist on the highway system. It is an excellent means to inform motorists of upcoming events like chain control measures, accidents, road closures and amber alerts. CMS are also used for Active Traffic Management strategies including lane management, route management, tolling lane management and traffic incident management.

The Bay area has nicknamed their system MITTENS to display travel times in the Bay Area relying on MTC's 511 system for travel time predictions.



## PROS

- CMS can help drivers make better route decisions or travel time decisions.
- CMS help alleviate driver stress by giving them information ahead of time about congestion or assessing traffic.
- Unlike radio broadcasts, CMS can be placed where they are most useful to drivers and where the most options are located for alternative routing when the freeway is congested.

## CONS

- Public perceptions vary on this ITS element based on perception of people who live in neighborhoods located near the freeway and whether the CMS add to or distract from freeway beautification efforts in the area.
- Locating CMS where it may make a driver chose to re-route off of the freeway.

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TRAVEL TIME TO  
SFO ARPT 8 MIN  
SF DUNELN 21 MIN



## FREQUENTLY ASKED QUESTIONS ABOUT CHANGEABLE MESSAGE SIGNS

### Specific Locations and Conditions

Caltrans has standards for the CMS sizes and types but a constraint with field deployments is the ability to communicate with the signs using either a leased or non-leased connection. Actual locations for CMS on the Solano corridors will be based on need, roadway structures and distances to strategic decision points in the roadway where motorists need to make travel route decisions.

### Cost

CMS signs themselves are not cost prohibitive at \$47,000 - \$115,000 each for a stationary CMS and, \$15,000 to \$30,000 for a portable CMS. Caltrans has standards for mounting CMS that could cost another \$100,000 for the stationary CMS. These estimates do not consider the cost of operating the CMS or the cost of communications which, depends on availability of hardwire or telephone lines in the desired location. Operating costs (including maintenance) tends to range around \$2,000 per year.

### Where does the traffic time information come from and how often is it updated?

Data containing information about travel speeds is extracted from vehicle detection system (VDS) devices at or along the state highway system. That information is transmitted to the CMS for travelers. The information is updated at regular intervals.

### Why are CMS better than radio broadcasts that I already depend on?

Unlike radio broadcasts, CMS can be placed strategically where they are most useful to drivers for making decisions.

### How is it determined where to place the signs?

Locations for signs are chosen based on freeway structure for supporting safe lane transition and options available for travelers to make re-routing decisions. If there are no re-routing options (i.e., roads where travelers can select another route), signs are placed based on when travelers would need specific information that can be displayed on the CMS. ●

