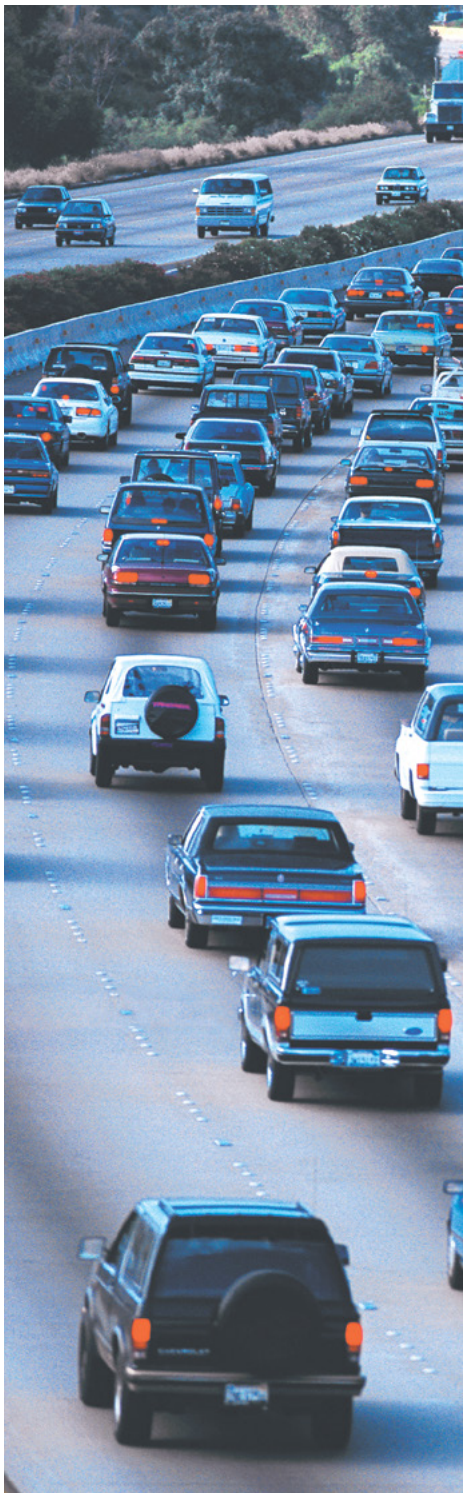
Executive Summary ES

Every two years, the Alameda County Transportation Commission (Alameda CTC) measures traffic conditions on major Alameda County roadway facilities that are designated as the Congestion Management Program (CMP) network. As the Congestion Management Agency (CMA) for the county, Alameda CTC undertakes this monitoring not only to comply with the state law, but also to utilize it as an opportunity to understand the performance of the county's key roadways that lead to informed transportation decisions. The state congestion management legislation requires the CMAs to designate a CMP network and adopt LOS standards to monitor the network performance at least biennially. The focus of the LOS monitoring is to measure average travel speeds on the county roadways, identify congested segments and assess long term congestion trends on the CMP network. Traffic conditions are evaluated using level of service (LOS) standards based on the Highway Capacity Manual (HCM). As required by the state law, if a CMP segment is found to operate at LOS F conditions during any monitoring cycle, after applicable exemptions, a deficiency plan is required to be prepared to improve the performance of that CMP segment.



Alameda County CMP Network

The entire CMP network in Alameda County consists of approximately 327 miles of roadways. The CMP network is divided into two tiers (**Figure ES-1**). Tier 1 roadways are a part of the CMP network that was initially adopted in 1991 and updated in 1992. These include all freeways, state highways, selected principal arterials and freeway ramp connectors. Tier 2 roadways were added during an update to the CMP network in 2011 and include principal and major arterials. Monitoring of Tier 1 roadways in the afternoon peak period is subject to CMP conformity. Monitoring of Tier 1 roadways in the morning peak period and Tier 2 roadways for both peak periods are for information purposes only.

In addition to the Tier 1 and Tier 2 roadways, Alameda CTC monitors the three Bay crossing bridges connecting the county to San Francisco and the Peninsula. It also conducts travel time surveys between 10 origin and destination (OD) pairs using multiple modes of transportation. Starting in the 2014 monitoring cycle, Alameda CTC also began monitoring 84 miles of mainline freeway HOV and express lanes. This additional data is collected for information purposes only.

[1] Network length is updated based on the measurements noted during the 2014 monitoring cycle.

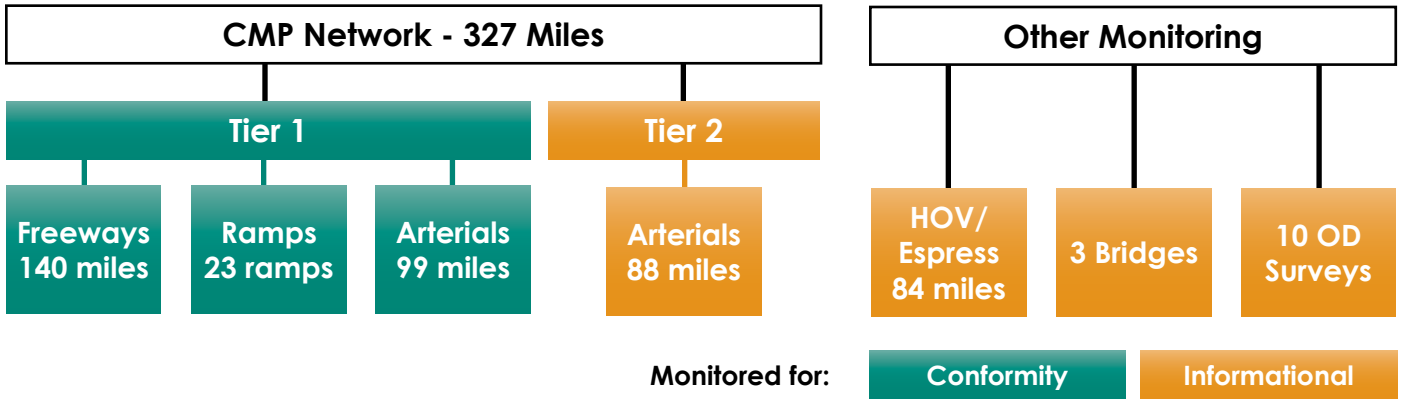


Figure ES-1: Alameda County CMP Network and Other Monitoring Elements

Measuring Congestion Levels: LOS Standards

Monitoring is undertaken by measuring the average speed of traffic over a specific length of roadway. The speeds are calculated from travel time data that is typically obtained from floating car surveys from the field. However, starting in the 2014 monitoring cycle, commercially available speed information is also used for monitoring a large portion of the CMP network. This commercial speed data is obtained through INRIX for the current monitoring cycle.

Based on the average speed, LOS is assigned to each roadway segment using adopted standards based on HCM. This LOS extends from LOS A (best) to LOS F (worst). The LOS category gives information about the quality of service to drivers. LOS A represents the best travel conditions from the driver's perspective where roadways are almost free flow and LOS F represents congested or stop-and-go conditions.

CMP Conformity

There are special requirements for Tier 1 roadways that perform at LOS F in the afternoon. This would trigger CMP conformance requirements, where the respective local jurisdiction would be required to prepare a deficiency plan to improve the performance of the segment. The deficiency plan will include details on the cause of the deficiency, measures to improve the performance of the roadway, and a funding plan for the proposed improvements. There are statutory exemptions that would exempt some of the congested roadways from deficiency planning, including if the roadway segment was already deficient in the base monitoring year (called "grandfathered") or construction work was active during the monitoring period.

Applying New Data Collection Technology: Commercial Speed Data

Keeping pace with technology, starting in the 2014 monitoring cycle, Alameda CTC began using commercial speed data in addition to the traditional floating car surveys for LOS monitoring purposes. Use of commercial speed data was approved by the Commission in 2013 based on a validation exercise carried out by Alameda CTC. As a part of that exercise, it was determined that commercial speed data could be used for freeways (Tier 1), ramps (Tier 1) and part of the arterials (Tier 2) where commercial speed data is available.

All other CMP roadways, including arterials (Tier 1) and a portion of arterials (Tier 2) were monitored using floating car surveys, similar to the previous monitoring cycles. Further, HOV lanes, where commercial speed data is not reported on these lanes separately, two freeways (Tier 1), two ramps (Tier 1) and 25 miles of arterials (Tier 2) that had inadequate coverage of commercial speed data were also monitored using floating car surveys.

Two-thirds of the CMP network was monitored using commercial speed data for the first time in 2014.

Prior monitoring studies used floating car surveys for monitoring the entire CMP network.

Countywide Results

2014 monitoring results reported that average speeds on the CMP network declined from 2012, continuing the trend observed since 2010 as in the previous 2012 monitoring cycle. The speed reduction on freeways and arterials in 2014 ranged between 0.9 mph and 1.7 mph (**Figure ES-2**). This is likely due to the improving economy combined with the impact of construction activities. However, there were two notable locations showing improvements due to completion of improvement projects, namely Caldecott Tunnel 4th bore and Hayward Loop.

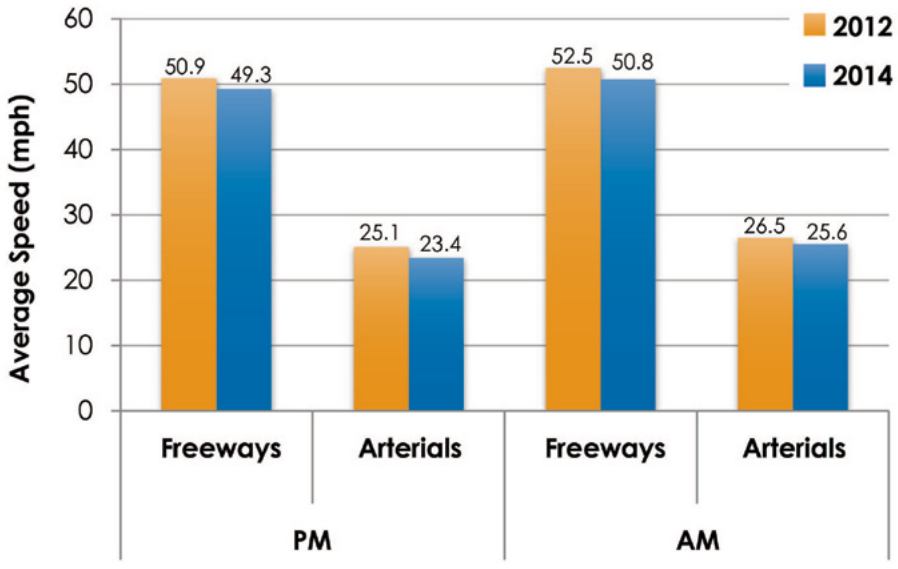


Figure ES-2: Average Speeds on CMP Network – 2012 vs 2014

In 2014, the number of congested segments operating at LOS F slightly increased from 42 to 45 in the afternoon peak. Similar trends were noticed in the morning peak, where the LOS F segments increased from 28 to 32. **Figure ES-3** shows a map of the location of all the LOS F segments both in the afternoon and morning peak periods and active construction.

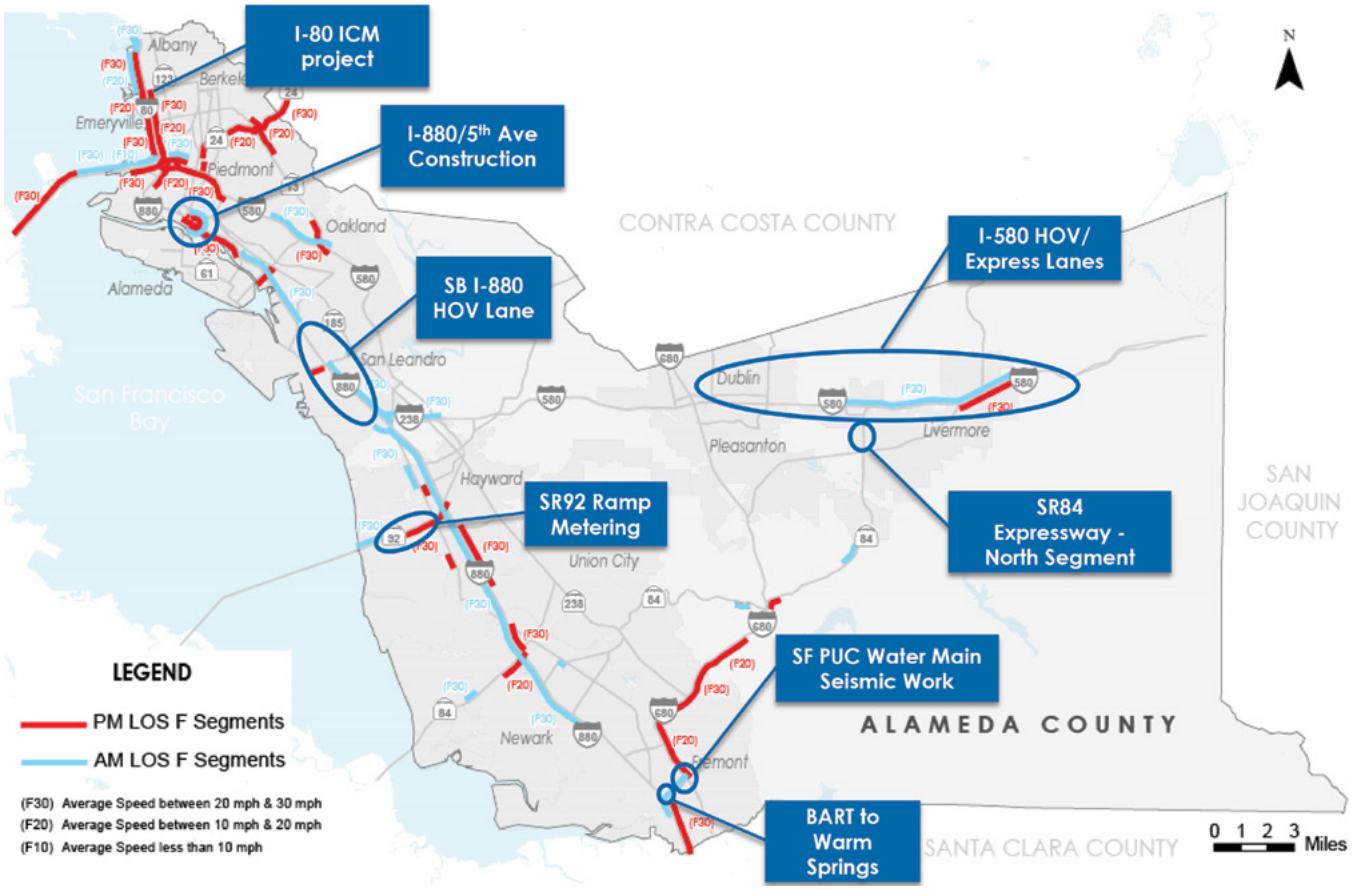


Figure ES-3: 2014 LOS Monitoring: Congested Segments Morning and Afternoon Peak Periods

After applying applicable statutory exemptions (including interregional trips on the segments that performed at LOS F during the 2014 LOS Monitoring in the afternoon peak period), no new deficiency has been identified.

Trends

Alameda CTC has been monitoring the performance of the CMP road network since 1991. Recently, there has been a noticeable increase in congestion on the network and overall performance influenced by the economic conditions in the Bay Area and the nation as a whole. Overall, average speeds on the CMP network almost returned to pre-recession speeds in 2014, after peaking in 2010 during the economic recession. **Figure ES-4a** shows the average CMP network

speeds on freeways and arterials between 2006 and 2014. Considering the large extent of network being monitored, the slight increase in average network speed represents a significant improvement in network performance for both freeways and arterials.

Employment data for the Bay Area region shows that Alameda County lags behind the other neighboring counties (Santa Clara, San Mateo and San Francisco) in employment recovery (**Figure ES-4b**). Therefore, Alameda County being in the geographic center of the region, the regional commute corridors connecting to the adjacent counties are generally experiencing more increased traffic than the roads serving internal trips in Alameda.

Average freeways and arterials speeds show a close correlation to employment. Employment decreased around 2010 and therefore less workers commuted during the peak periods, resulting in improved speeds across the roadway network. As employment recovered after 2012, CMP roadway speeds declined. Though the employment rates increased in 2013, they were still not as high as pre-recession years.

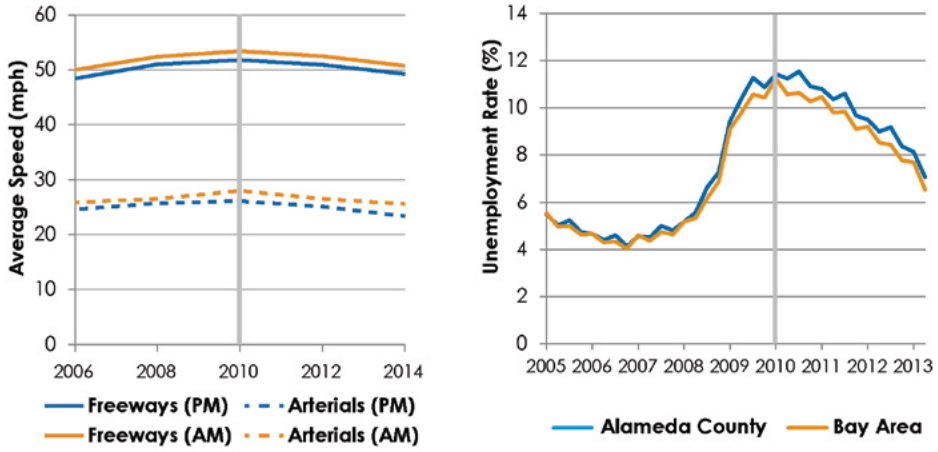


Figure ES-4: a) CMP Network Speeds and b) Unemployment Rates (Source: Bureau of Labor Statistics)

Similar trends have been observed in ridership on the major regional transit system. As shown in **Figure ES-5**, in 2010 at the peak of unemployment, BART ridership was low and the demand on freeways had reduced showing increased average speeds. Through the economic recovery in 2012 and 2014, the demand on both of these transportation services has increased again, showing increased ridership on BART and decline in average speeds on the CMP network.

2014 monitoring generally reported increased congestion on the CMP network with declined network average speeds and increased number of congested segments.

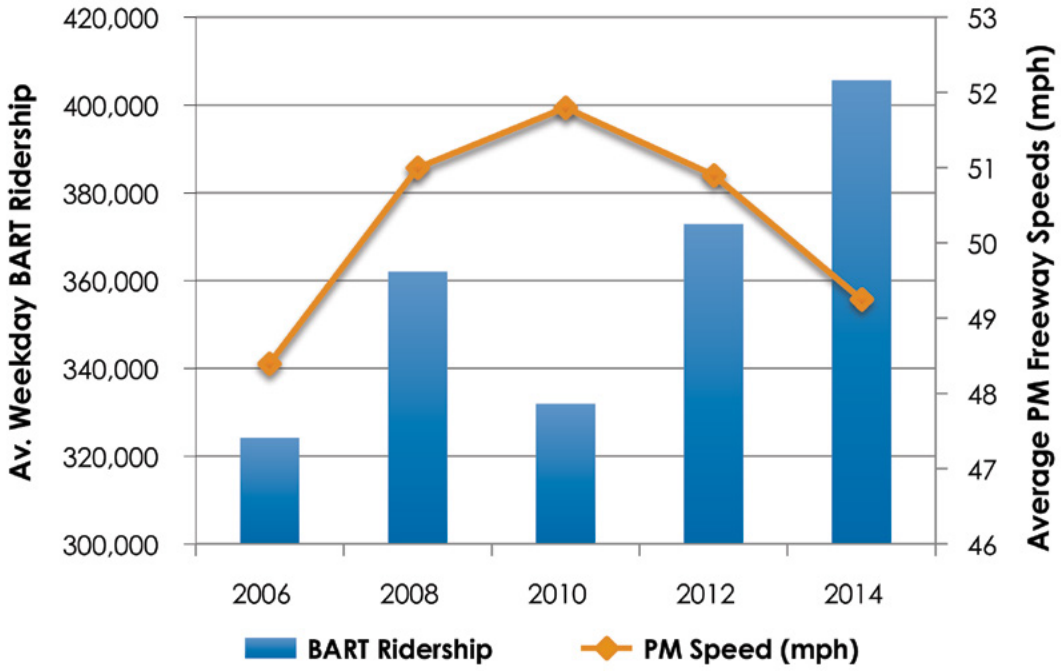


Figure ES-5: Afternoon Peak Period Average Freeway Speed and BART Ridership (Source: BART)

Planned and Potential Transportation Improvements

In 2014, one of the major impacts on road network performance was from the presence of construction and maintenance activities, particularly on major corridors. Major construction work was present on I-80 (also underway in 2012), I-580 in East County and I-880 in North and Central County. On the arterial network, State Route 112 (Davis Street) was under construction. **Figure ES-3** highlights the location of active construction work in 2014 that occurred in the vicinity of any CMP segments. The next LOS monitoring effort in 2016 will likely show improved performance resulting from these completed upgrades. Beyond the above projects currently under construction, potential improvements identified to be in various stages of plan/project development were grouped as follows:

1. Projects with approval that have already been **programmed** for construction. For example, State Route 84 widening project starting in 2015;
2. Projects in the **development or planning** phases. For example, the express lane project on I-680 northbound that is currently in the Environmental Phase; and
3. County-wide **planning study** efforts. For example, Goods Movements Plan, Transit Plan and Multi-Modal Arterial Plan that will study the county transportation needs and identify potential improvement measures.

Additionally, the 2014 Transportation Expenditure Plan, which is an $8 billion, 30-year plan appearing before voters as Measure BB during the November 2014 ballot, if passed, is expected to improve the county-wide transportation system in all aspects.