

PASS FY 11/12 CYCLE

COUNTY OF MARIN | CITY OF LARKSPUR | CALTRANS

CITY OF SAN RAFAEL | CALTRANS

TOWN OF WINDSOR | CALTRANS

CITY OF NAPA | CALTRANS

CITY OF SUISUN CITY | CITY OF FAIRFIELD | CALTRANS

CITY OF BRENTWOOD | CALTRANS

TOWN OF DANVILLE | COUNTY OF CONTRA COSTA | CALTRANS

CITY OF SAN RAMON

CITY OF ALAMEDA

CITY OF BERKELEY

CITY OF FREMONT | CALTRANS

CITY OF OAKLAND

CITY OF SAN LEANDRO | CALTRANS

CITY OF MOUNTAIN VIEW | CALTRANS

CITY OF SANTA CLARA | COUNTY OF SANTA CLARA | CALTRANS

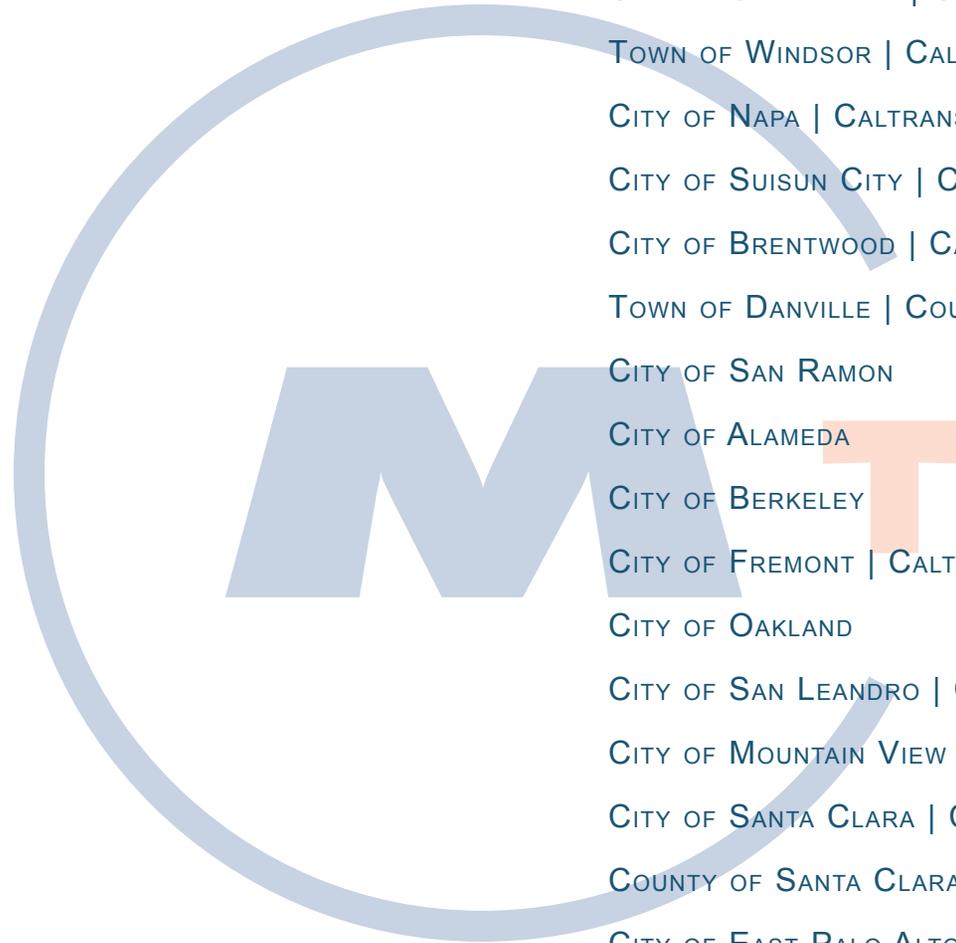
COUNTY OF SANTA CLARA

CITY OF EAST PALO ALTO | CALTRANS

CITY OF MENLO PARK | CALTRANS

COUNTY OF SAN MATEO

CITY OF SOUTH SAN FRANCISCO | CALTRANS



PASS FY 11/12 CYCLE

The purpose of the Program for Arterial System Synchronization (PASS) is to provide technical and financial assistance to Bay Area agencies to help improve the safe and efficient operation of certain traffic signal systems and corridors. The PASS provides traffic engineering assistance to local jurisdictions in retiming their traffic signals.

This cycle of the PASS had a total of 20 projects, listed in the table below, consisting of 348 traffic signals from eight counties in the Bay Area. MTC, in partnership with Caltrans and the local agencies, has successfully completed these projects. In this cycle, 32 Caltrans signals were coordinated with local agency signals along major arterials in the Bay Area.

As a part of each project, new traffic counts were collected

in the field to understand the traffic patterns and volumes along the corridors. The 7-day 24-hour volume counts (ADT), peak period turning movement counts, bicycle and pedestrian counts, and historical collision data were analyzed in developing and implementing new signal coordination plans. Field implementation and fine-tuning, are the last but the most important tasks to successfully achieve traffic progression. To provide a common time-source for Caltrans and local signals, 88 GPS clocks were procured and installed for several projects. This time synchronizing enabled the coordination of state and local signals along some major arterials for the first time. When requested, the PASS also provides project sponsors with the technical help needed to address any issues or citizen complaints received for up to one year after the completion of the PASS project.

#	County	Project Sponsors	# of Signals	Timing Plans/Services	Consultant
1	MR	County of Marin, City of Larkspur, Caltrans	12	Weekday Peaks; Controller Evaluation	TJKM Consultants
2	MR	City of San Rafael, Caltrans	77	Weekday Peaks	Kimley-Horn
3	SN	Town of Windsor, Caltrans	4	Weekday; Traffic Responsive Study	TJKM Consultants
4	NA	City of Napa, Caltrans	13	Weekday; Weekend; School Peaks	TJKM Consultants
5	SO	City of Suisun City, City of Fairfield, Caltrans	13	Weekday Peaks w/ Extended AM	URS Corporation
6	CC	City of Brentwood, Caltrans	12	School; Wednesday PM Peaks	TJKM Consultants
7	CC	Town of Danville, County of CC, Caltrans	22	Weekday; School Peaks	URS Corporation
8	CC	City of San Ramon	14	Weekday; School Peaks; Phasing Analysis	Kimley-Horn
9	AL	City of Alameda	10	Weekday; Incident Management Plans	TJKM Consultants
10	AL	City of Berkeley	46	Weekday; Weekend Peaks	Kimley-Horn
11	AL	City of Fremont, Caltrans	13	Weekday Peaks	URS Corporation
12	AL	City of Oakland	14	Weekday Peaks	TJKM Consultants
13	AL	City of San Leandro, Caltrans	9	Weekday Peaks	TJKM Consultants
14	SC	City of Mountain View, Caltrans	7	Weekday Peaks	TJKM Consultants
15	SC	City and County of Santa Clara, Caltrans	22	Weekday Peaks	URS Corporation
16	SC	County of Santa Clara	24	Traffic Responsive w/ IM Flush Plans	Kimley-Horn
17	SM	City of East Palo Alto, Caltrans	14	Weekday; Weekend Peaks	URS Corporation
18	SM	City of Menlo Park, Caltrans	10	Weekday Peaks	URS Corporation
19	SM	County of San Mateo	4	Weekday Peaks; ADT	URS Corporation
20	SM	City of South San Francisco, Caltrans	8	Weekday; School PM Peaks	TJKM Consultants

BENEFIT-COST SUMMARY

The PASS project benefits are assumed to be 100 percent on the first day after implementation of the new signal timing plans, declining steadily to zero by end of the fourth year. The results from the 20 projects are summarized below:

- Total Auto Fuel Consumption Savings: 14% or over 5.5 million gallons
- Total Auto Travel Time Savings: 18% or over 2 million hours
- Average Auto Speed Increase: 25%
- Total Auto Emissions Reduction: 350 tons (ROG: 41 tons; NOx: 52 tons; PM10: 8 tons; CO: 249 tons)
- Total Transit Travel Time Savings: 4% or 30,000 hours
- Average Transit Speed Increase: 8%

Total Project Costs: \$1,197,000

Total Lifetime Benefits: \$72,601,000

Overall Benefit-Cost ratio is 61:1

OTHER BENEFITS

The optimized signal timing plans were developed and implemented based on the recently adopted CA MUTCD guidelines. The pedestrian walking speed was reduced to 3.5 feet per sec. (previously 4.0 feet per sec.), providing adequate crossing time for pedestrians. The minimum green time was reviewed and increased at many intersections to enhance safety for bicyclists while crossing the intersection. The yellow time and all-red timing parameters were reviewed and updated to provide additional clearance time for the vehicular traffic to clear or stop safely at the intersections.