

PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION (PASS) FY12/13 CYCLE

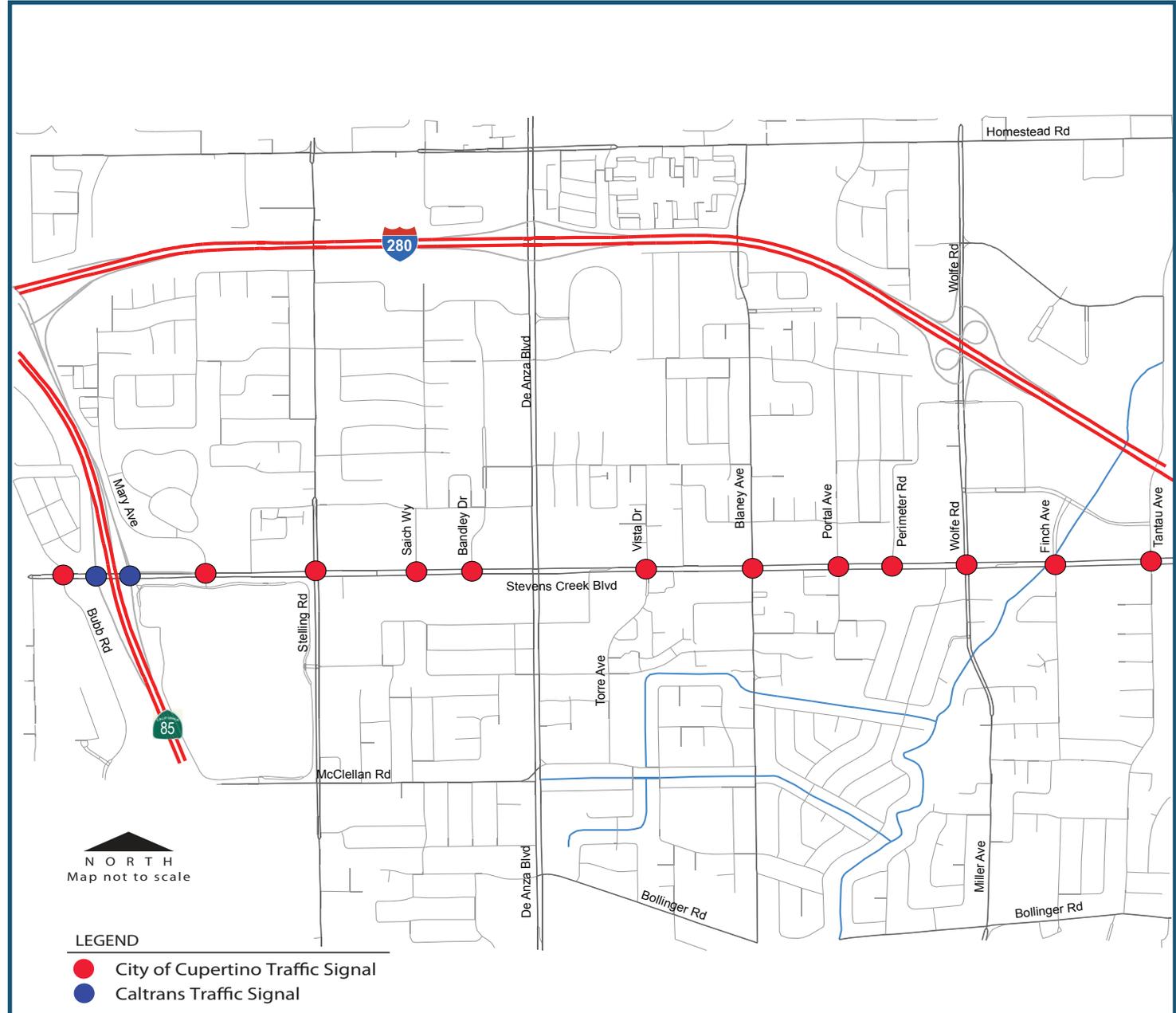
Stevens Creek Blvd ■ Traffic Signal Timing Project

City of Cupertino | Metropolitan Transportation Commission

PROJECT OVERVIEW

The City of Cupertino received a Program for Arterial Synchronization (PASS) grant from the Metropolitan Transportation Commission to conduct a signal timing study for 14 signals along Stevens Creek Blvd between Bubb Rd/ Peninsula Ave and Tantau Ave.

The project objective was to develop traffic signal coordination timing plans for the weekday AM, midday, and PM peak periods, for all project signals, and school peak periods, for three of signals on the east end of the corridor. There was a concurrent Transit Performance Initiative (TPI) project that was being completed for VTA Line 323 Limited Service to provide transit signal priority (TSP) along this route within the project limits, therefore the PASS project was coordinated with the TPI project in development of the timings.



BENEFITS TO VARIOUS MODES



BENEFITS TO BICYCLISTS: For improved safety, the minimum green intervals were reviewed for bicyclists on the corridor.

Changes to minimum green intervals were made at five project intersections.



BENEFITS TO PEDESTRIANS: For improved safety, the pedestrian intervals were reviewed based on City standards.

Changes to pedestrian timing were made at two project intersections.



BENEFITS TO TRANSIT: Based on the transit travel time runs, the project resulted in an average of 7% increase in speed and an average of 11% savings in travel time for the buses serving the corridor.

These results show that optimizing signal timings on a regular basis provides significant benefits to the users and transit operators.



BENEFITS TO TRAFFIC SAFETY: To enhance safety, the yellow clearance intervals were reviewed and updated based

on current standards. Changes to clearance intervals were made at five project intersections. After the new timing plans were implemented, the auto stops were reduced by 45%. Additional benefits from reduction in stops include reduced vehicle maintenance, and reduced driver frustration.

Project Costs

Consultant Costs(Weekday Peak Coordination Plans, Transit Travel Time Runs)	\$37,550
Other Project Costs (Additional ADT count, School Peak Timing)	\$5,025
Agency Staff Costs (Estimate)	\$8,225
Total Costs	\$50,800

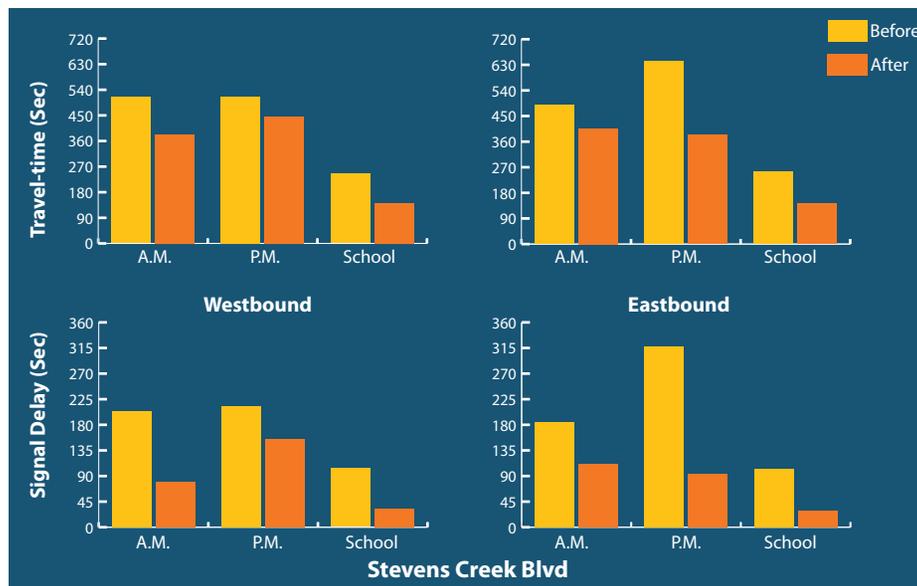
Project Benefits

Measures	Annual Average		Lifetime (5 Years)	
	Savings	Monetized Savings	Savings	Monetized Savings
Travel Time Savings	53,647 hrs.	\$1,024,002	268,237 hrs.	\$5,120,010
Fuel Consumption Savings	190,686 gal.	\$766,320	953,431 gal.	\$3,831,601
ROG Emissions Reduction	1.34 tons	\$1,690	6.71 tons	\$8,452
NOx Emissions Reduction	1.65 tons	\$29,665	8.24 tons	\$148,325
PM10 Emissions Reduction	0.26 tons	\$37,572	1.29 tons	\$187,861
CO Emissions Reduction	8.36 tons	\$646	41.79 tons	\$3,230
Total Lifetime Benefits				\$9,299,479
Transit Travel Time Savings	3,141 hrs.	\$59,953	15,705 hrs.	\$299,766
Total Lifetime Benefits with Transit				\$9,599,245

Overall Project Benefits	Auto	Transit
Average Decrease in Travel Time	28%	11%
Average Speed Increase	42%	7%
Average Fuel Savings	23%	N/A
Average Reduction in Signal Delay	56%	N/A
Average Reduction in Number of Stops	45%	N/A

Overall Benefit-Cost Ratio

189:1



PROJECT BENEFITS SUMMARY



Average Reduction in Auto Signal Delay: 56%

Average Reduction in Number of Stops: 45%

Auto Fuel Consumption Savings: 23% or 953,461 gallons



Total Emissions Reduced (ROG, Nox, PM10, CO): 58.03 tons

Auto Travel Time Savings: 28% or 268,237 hours



Average Travel Time Savings: 11% or 15,705 hours

Overall Project Benefit-cost Ratio = 189:1



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