

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

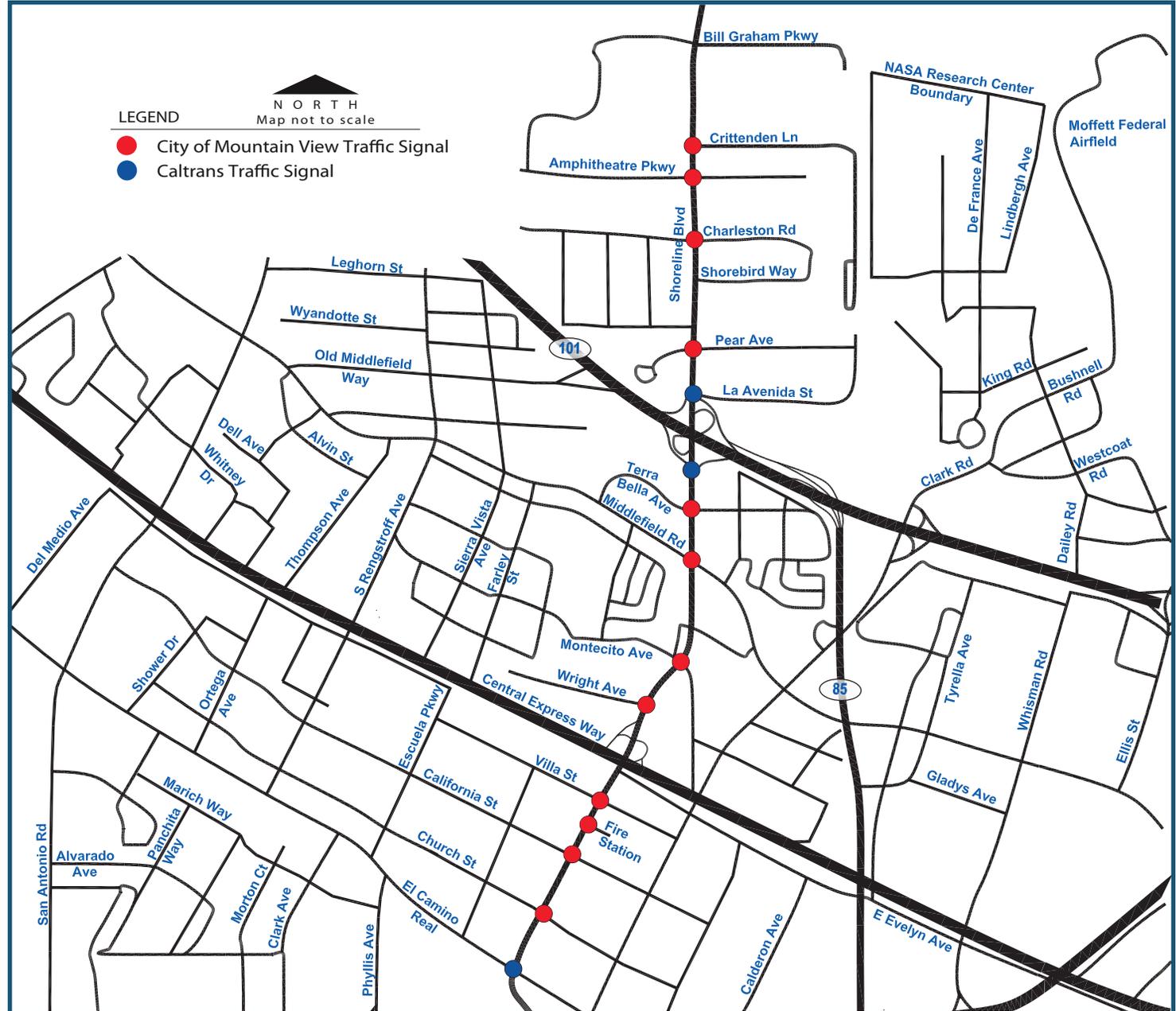
# Shoreline Blvd ■ Traffic Signal Timing Project

City of Mountain View | Caltrans | Metropolitan Transportation Commission

## PROJECT OVERVIEW

The City of Mountain View, in conjunction with Caltrans, received a Program for Arterial System Synchronization (PASS) grant from the Metropolitan Transportation Commission to conduct a signal timing study for 15 signals along Shoreline Blvd between Crittenden Lane and El Camino Real. The project services include developing and implementing traffic signal coordination timing plans for the AM, midday and PM peak periods to facilitate traffic progression along Shoreline Blvd, and to improve the operational efficiency of the traffic signals with the existing capacity constraints.

At the request of the city, the PASS also completed these additional services: 1) evaluating the options to provide communication between the project signals and the city traffic operations center; 2) evaluating the removal of an exclusive left-turn on the northbound approach at the intersection of Shoreline Blvd and Pear Ave; and 3) evaluating the need for a dedicated right-turn lane for the eastbound approach of Charleston Rd at Shoreline Blvd, including providing concept level signing and striping layout.



## OTHER RECOMMENDED IMPROVEMENTS

The following recommendations could be further studied to mitigate congestion along Shoreline Blvd: i) To provide a bus pull out area to serve as a passenger drop-off location north of Pear Ave along Shoreline Blvd; and ii) To relocate the current drop-off location north of Charleston Ave to a new location, to reduce backup past Charleston Rd and to reduce weaving within the intersection.

## BENEFITS TO VARIOUS MODES



**BENEFITS TO BICYCLISTS:** The minimum green intervals were reviewed for bicyclists to improve the safety at the intersections based on 2012

California MUTCD standards. Changes to minimum green were made at the intersections not meeting the standard requirements.



**BENEFITS TO PEDESTRIANS:** The Walk timing and Flash Don't Walk clearance timing parameters were also updated to provide adequate time for

children and seniors to safely cross the study intersections to accommodate the new walking speed of 3.5 feet/second.



**BENEFITS TO TRANSIT:** Based on the transit travel time runs, the project resulted in an average of 35% increase in speed and an average of

22% savings in transit travel time. These results show that optimizing signal timings on a regular basis provides significant benefits to the users and transit operators.

### Project Costs

Consultant Costs (Basic Services/Plans)	\$38,250
Other Project Costs (GPS Clocks, Communications Equipment, etc.)	\$14,550
Agency Staff Costs (Estimate)	\$9,563
<b>Total Costs</b>	<b>\$62,363</b>

### Project Benefits

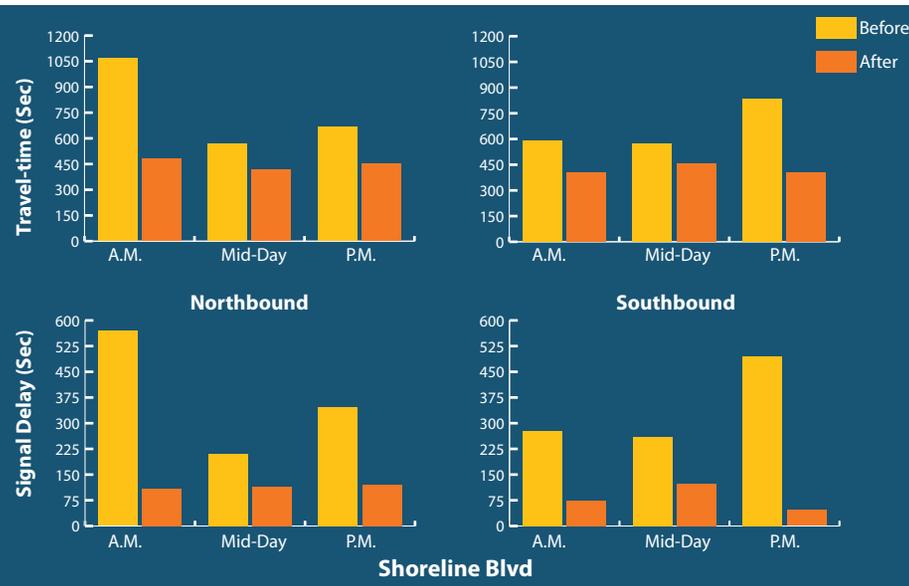
Measures	Annual Average		Lifetime (5 Years)	
	Savings	Monetized Savings	Savings	Monetized Savings
Travel Time Savings	55,725 hrs.	\$1,063,665	278,627 hrs.	\$5,318,327
Fuel Consumption Savings	106,331 gal.	\$427,318	531,655 gal.	\$2,136,588
ROG Emissions Reduction	0.89 tons	\$1,114	4.43 tons	\$5,570
NOx Emissions Reduction	1.17 tons	\$21,111	5.87 tons	\$105,554
PM10 Emissions Reduction	0.16 tons	\$23,071	0.79 tons	\$115,354
CO Emissions Reduction	4.53 tons	\$350	22.65 tons	\$1,750
<b>Total Lifetime Benefits</b>				<b>\$7,683,143</b>
Transit Travel Time Savings	286 hrs.	\$5,456	1,429 hrs.	\$27,279
<b>Total Lifetime Benefits with Transit</b>				<b>\$7,710,422</b>

### Overall Project Benefits

	Auto	Transit
Average Decrease in Travel Time	40%	22%
Average Speed Increase	62%	35%
Average Fuel Savings	32%	N/A
Average Reduction in Signal Delay	72%	N/A
Average Reduction in Number of Stops	69%	N/A

### Overall Benefit-Cost Ratio

**124:1**



## PROJECT BENEFITS SUMMARY



**Average Reduction in Auto Signal Delay: 72%**

**Average Reduction in Number of Stops: 69%**

### Auto Fuel Consumption

**Savings: 32% or 531,655 gallons**



**Total Emissions Reduced (ROG, Nox, PM10, CO): 33.74 tons**

**Auto Travel Time Savings: 40% or 278,627 hours**



**Average Transit Travel Time Savings: 22% or 1,429 hours**

**Overall Project Benefit-cost Ratio = 124:1**



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