

PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION (PASS) FY13/14 CYCLE

Sir Francis Drake Boulevard and Red Hill Avenue Signal Timing Project

Town of San Anselmo | City of San Rafael | Town of Fairfax | Town of Ross | Metropolitan Transportation Commission

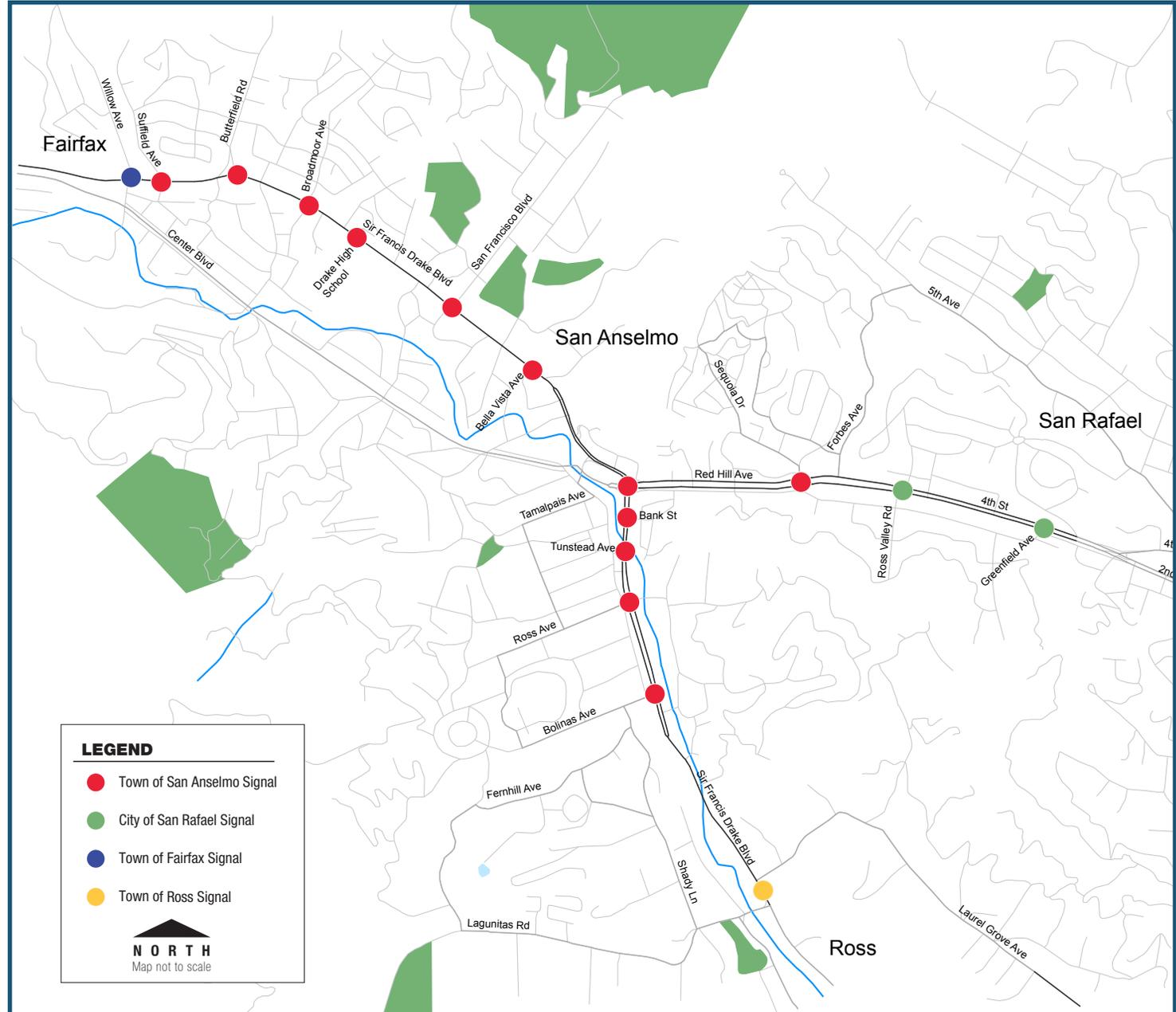
PROJECT OVERVIEW

The Town of San Anselmo, in conjunction with the City of San Rafael, Town of Fairfax, and Town of Ross, received a grant from the Metropolitan Transportation Commission's Program for Arterial System Synchronization (PASS) to deploy optimized signal timing plans for the 16 traffic signals along Sir Francis Drake Boulevard and Red Hill Avenue/4th Street. Twelve of the project intersections are owned and operated by the Town of San Anselmo, two signals are owned and operated by the City of San Rafael, and one signal is owned and operated by each Towns of Fairfax and Ross.

The goal of the project was to conduct a timing analysis and develop and implement signal coordination plans during the weekday AM, midday, and PM peak periods, as well as the weekend peak and off-peak periods.

The PASS project involved the completion of the following tasks: collect turning movement counts, including vehicular, pedestrian, and bicycle counts; conduct field review of the project area; conduct travel time surveys; review actuated settings; review collision history; develop the existing conditions model; develop coordination plans for the weekday AM, midday, and PM peak periods, as well as the weekend peak and off-peak periods;

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PROJECT OVERVIEW (CONTINUED)

implement and fine-tune the recommended timings; conduct the “before” and “after” travel time surveys; and document the analyses/ findings for the project.

After the proposed signal timing plans were developed; marked-up timing sheets were prepared. Fine-tuning was conducted during the peak periods and minor adjustments were made to the timing based on the observed traffic conditions.

BENEFITS TO VARIOUS MODES



BENEFITS TO BICYCLISTS: The minimum green times were reviewed and increased at 14 intersections to allow stopped bicyclists enough time to clear an intersection when the light turns green.



BENEFITS TO PEDESTRIANS: The pedestrian intervals were reviewed and increased at two intersections based on the 2012 California MUTCD to enhance safety. The Walk intervals were increased at five project intersections.

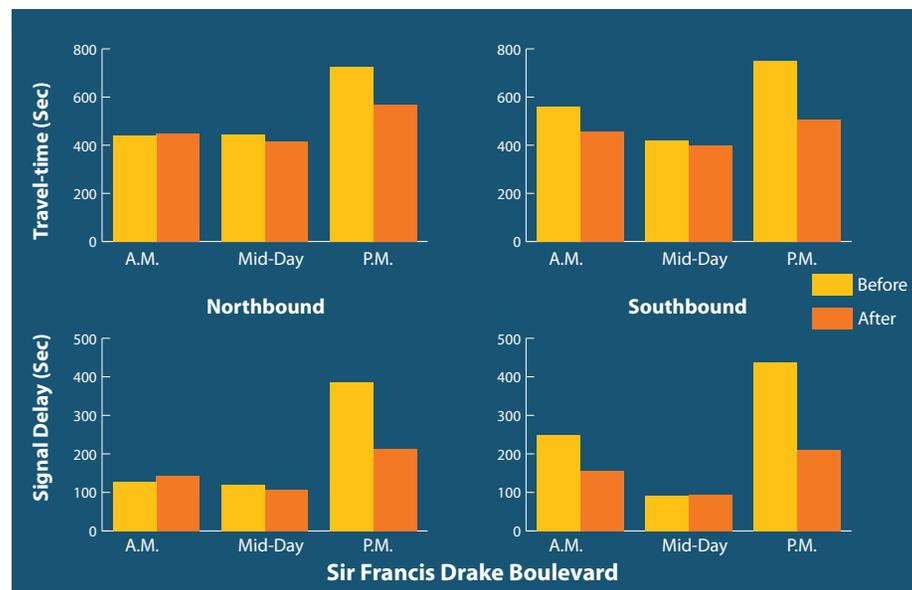


BENEFITS TO TRAFFIC SAFETY: A review of intersection level collisions along the corridors was conducted to identify any collision patterns that may be corrected through signal timing adjustments. No specific timing changes were needed as a result of the collision review.

Project Costs	
Consultant Costs (Basic Services/ Plans)	\$37,500
Consultant Costs (Additional Plans, TSP, IM Flush Plans, etc.)	\$33,000
Other Project Costs (GPS Clocks, Communications equipment, etc.)	\$0
Agency Staff Costs (Estimate)	\$9,375
Total Costs	\$79,875

Measures	First Year		Lifetime (5 Years)	
	Savings	Monetized Savings	Savings	Monetized Savings
Travel Time Savings	54,209 hrs.	\$1,057,902	145,418 hrs.	\$2,837,882
Fuel Consumption Savings	161,344 gal.	\$622,651	432,813 gal.	\$1,670,298
ROG Emissions Reduction	0.58 tons	\$729	1.55 tons	\$1,956
NOx Emissions Reduction	0.4 tons	\$7,158	1.07 tons	\$19,203
PM2.5 Emissions Reduction	0.02 tons	\$6,383	0.05 tons	\$17,122
CO Emissions Reduction	4.51 tons	\$349	12.1 tons	\$935
Total Lifetime Benefits				\$4,547,395

Overall Project Benefits	Auto
Average Decrease in Travel Time	19%
Average Speed Increase	24%
Average Fuel Savings	14%
Average Reduction in Signal Delay	29%
Average Reduction in Number of Stops	33%
Overall Benefit-Cost Ratio	57:1



PROJECT BENEFITS SUMMARY



Average Reduction in Auto Signal Delay: 29%

Average Reduction in Number of Stops: 33%

Auto Fuel Consumption Savings: 14% or 432,813 gallons



Total Emissions Reduced (ROG, NOx, PM2.5, CO): 14.77 tons

Auto Travel Time Savings: 19% or 145,418 hours



Overall Project Benefit-cost Ratio = 57:1



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