

# City of Hayward Signal Timing Project

City of Hayward | Caltrans | Metropolitan Transportation Commission

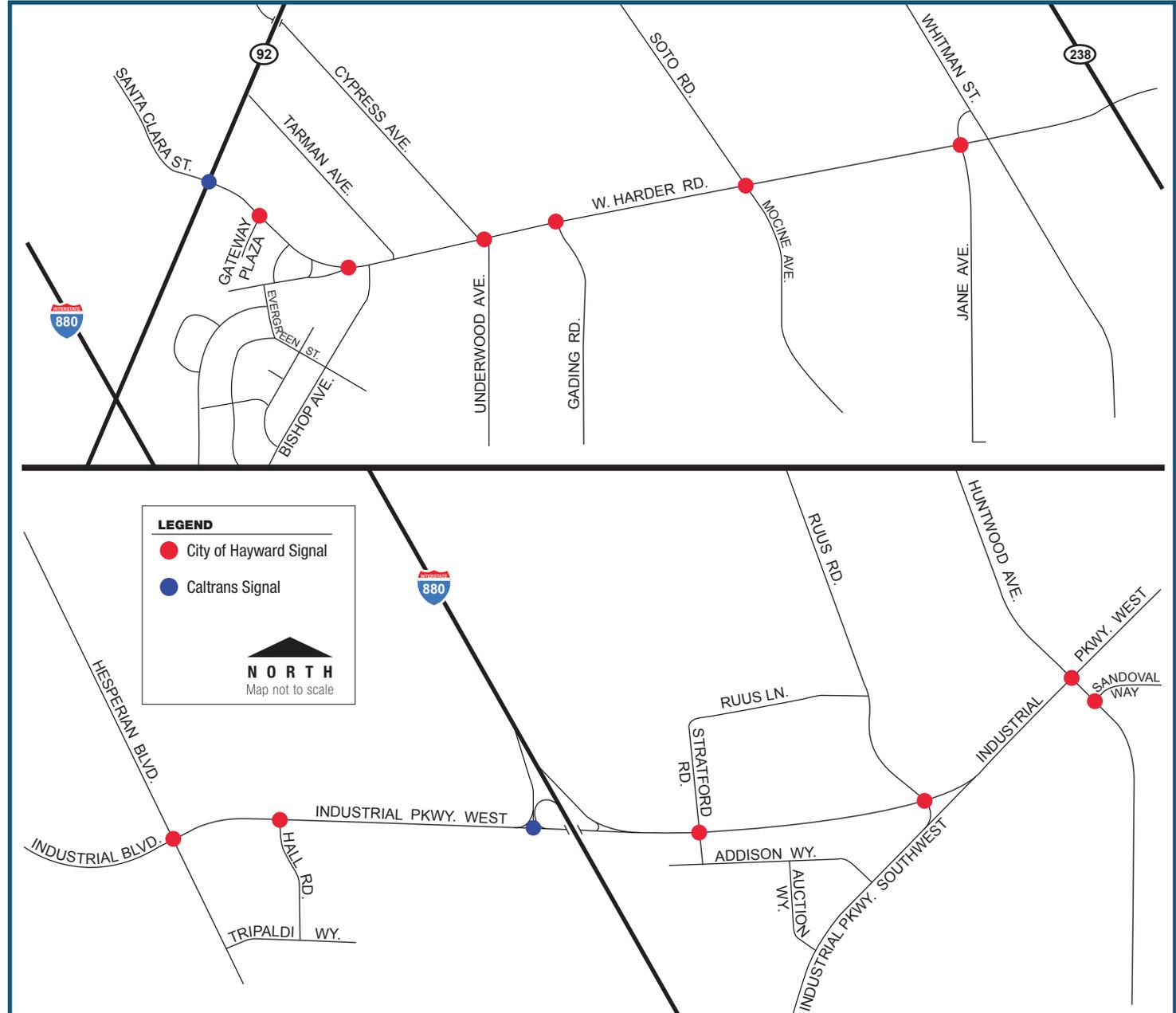
## PROJECT OVERVIEW

The City of Hayward received a grant from the Metropolitan Transportation Commission's Program for Arterial System Synchronization (PASS) to conduct a signal timing study for 14 traffic signals along Harder Road and Industrial Parkway. Twelve of the project intersections are owned, operated and maintained by the City of Hayward, and two signals are owned, operated and maintained by Caltrans.

The goal of the project was to conduct a timing analysis and develop and implement signal coordination plans during the weekdays for the 14 project signals. Timing plans developed and implemented consisted of AM, midday, and PM peak periods on typical weekdays.

The PASS project involved the completion of the following tasks: collect turning movement counts, including vehicular, pedestrian, and bicycle counts; conduct travel time surveys; review collision history; develop coordination plans for the study periods; and conduct the "before" and "after" travel time surveys to assess the performance of the new plans.

The field fine-tuning was conducted during the typical weekday periods and minor adjustments were made to the offsets and splits based on observed traffic conditions.



## BENEFITS TO VARIOUS MODES



### BENEFITS TO PEDESTRIANS:

The pedestrian timings were reviewed based on the 2012 California MUTCD to ensure safety by providing adequate time for children and seniors to safely cross the study intersections. The Walk time and the Flashing Don't Walk clearance times were adjusted at all 14 project intersections.



### BENEFITS TO TRAFFIC SAFETY:

The yellow clearance timing parameters were updated based on posted speed limits along the study corridors at seven project intersections and no changes were made to all red clearance timing parameters.

### Project Costs

Consultant Costs (Basic Services/ Plans)	\$40,500
Consultant Costs (Additional Plans, TSP, IM Flush Plans, etc.)	\$3,000
Other Project Costs (GPS Clocks, Communications equipment, etc.)	\$3,500
Agency Staff Costs (Estimate)	\$10,125
<b>Total Costs</b>	<b>\$57,125</b>

### Project Benefits

Measures	First Year		Lifetime (5 Years)	
	Savings	Monetized Savings	Savings	Monetized Savings
Travel Time Savings	59,772 hrs.	\$1,166,476	160,342 hrs.	\$3,129,138
Fuel Consumption Savings	110,224 gal.	\$425,374	295,683 gal.	\$1,141,090
ROG Emissions Reduction	0.35 tons	\$446	0.95 tons	\$1,198
NOx Emissions Reduction	0.26 tons	\$4,717	0.70 tons	\$12,654
PM2.5 Emissions Reduction	0.01 tons	\$3,919	0.03 tons	\$10,514
CO Emissions Reduction	3.39 tons	\$262	9.09 tons	\$702
<b>Total Lifetime Benefits</b>	<b>\$4,295,295</b>			

### Overall Project Benefits

Overall Project Benefits	Auto
Average Decrease in Travel Time	21%
Average Speed Increase	30%
Average Fuel Savings	17%
Average Reduction in Signal Delay	50%
Average Reduction in Number of Stops	39%

### Overall Benefit-Cost Ratio

**79:1**

## PROJECT BENEFITS SUMMARY



Average Reduction in Auto Signal Delay: 50%

Average Reduction in Number of Stops: 39%

Auto Fuel Consumption Savings: 17% or 295,683 gallons

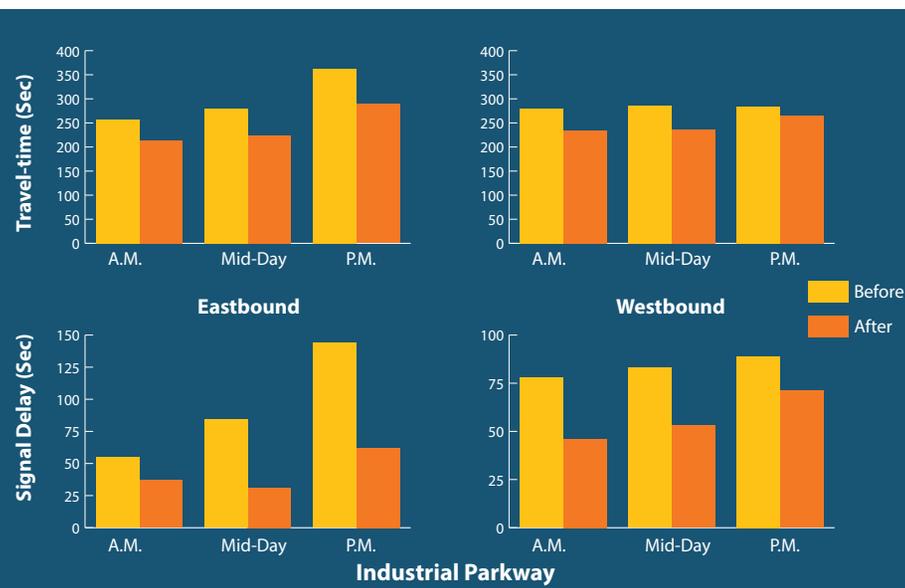


Total Emissions Reduced (ROG, NOx, PM2.5, CO): 10.77 tons

Auto Travel Time Savings: 21% or 160,342 hours



Overall Project Benefit-cost Ratio = 79:1



### For more info, please contact:

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### Project Consultant:

**TJKM Transportation Consultants**

